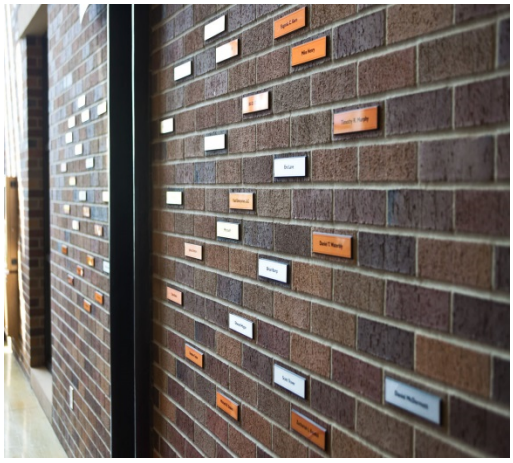
CAPITAL BUDGET REQUEST



2025-2027 BIENNIUM

Eastern Washington University

Office of the President
Eastern Washington University
214 Showalter Hall
Cheney, WA 99004-2445

September 10, 2024

Governor Jay Inslee
Office of the Governor
PO Box 40002
Olympia, WA 98504

Dear Governor Inslee:

This letter transmits the 2025-27 biennial capital budget request for Eastern Washington University (EWU). Developed within the guidelines set by the Office of Financial Management, this request represents Eastern's efforts to focus on its mission to provide an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence.

These prioritized capital budget requests support university priorities and strategies currently in place to serve the higher education needs of our region. Eastern places a high distinction on protecting the state's investment in our physical facilities. Funding for projects such as classroom renewal and infrastructure preservation are essential to the success of the university.

Priority #1 – Martin-Williamson Hall
Eastern Washington University is requesting funding for Phase 1 improvements to Martin-Williamson Hall. The facility houses the Psychology and Education departments along with Counseling and Wellness services and Student Accommodations and Support Services. While the building no longer supports an effective learning environment, it does represent an important place in EWU's history, and a prominent location on the campus. This major renovation will ensure that the building continues to serve students for many years into the future, and it will usher a new era of building performance and sustainability by complying with state and federal mandates for energy use and carbon emissions. Combined with priority #2 below, this project will significantly reduce the building energy use and help to lower the total campus energy use intensity.

Priority #2 – Geothermal Plant – Node 1
With the adoption of HB 1390, public facilities are required to develop a plan to reduce energy use, reduce carbon emissions, and to comply with state and federal energy performance standards. After multiple years of study and numerous technical reports, Eastern Washington University requests funding to meet these standards in the most effective way possible - by incorporating ground source heat pump technology to create a Geothermal Plant (Node 1) on the Cheney campus. Completing this facility would enable EWU to meet current standards, future proof our campus energy system, and to use the best current technology to reduce carbon emissions. The facility will be designed to support up to 11 buildings (over 500,000 sf), existing and new, on the campus and to dramatically reduce overall demand of natural gas consumption at the existing steam plant.

Priority #3 – Dental Therapy Lab and Clinic
Eastern Washington University requests funding to relocate the EWU Dental Hygiene Clinic to a new facility adjacent to the University of Washington/EWU Regional Initiatives in Dental Education (RIDE) program. EWU is planning to launch a new graduate-level Dental Therapy program which will require expanded use of the existing Dental Hygiene Clinic. Relocating EWU's Dental Hygiene Clinic to available space in a building adjacent to the UW/EWU RIDE program will strengthen natural programmatic and collaborative opportunities

and result in shared infrastructure and operational support. With the planned addition of Dental Therapy, this proposal presents a unique opportunity to create the only dental education cluster in the state that brings together baccalaureate, masters, and doctoral-level dental training in shared facilities.

Eastern Washington University is committed to ensuring that our facilities remain well-maintained and responsive to the long-term needs of the region. These proposal support expansion and renewal of campus infrastructure and are essential to providing access to higher education for the residents of Eastern Washington. We respectfully request your thoughtful consideration of this capital funding request, which is critical to supporting the university's mission.

Thank you for your continued support.

Sincerely,

Shari McMahan, PhD
President

370 – Eastern Washington University

2025-23 Biennial Capital Budget Request

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Minor Works – Program 061 2025-27

Tab D – Not used

Tab E – Not used

Tab F – Direct Pay Form

Direct Pay Form

Attachments for Reference

EWU Hydro-Geological (Geothermal) Feasibility Study

EWU Ground Source Heat Pump Evaluation

EWU Decarbonization Plan – Prelim Capital Request Report

EWU Geothermal Plant – Node 1 Infrastructure Request

EWU Martin-Williamson Predesign Report

EWU Civil Engineering Building – Applied Engineering Predesign Report

EWU Lucy Covington Center Predesign Report

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2025-23 Biennial Capital Budget Request

Tab A - Narrative

Ten Year Summary

Ten Year Capital Plan by Project

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Capital FTE Summary

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Deferred Maintenance Backlog Reduction Plan – Project List

Eastern Washington University Ten-Year Capital Plan 2025-2027

Major Projects

Priority	Funding Source	Project	2025-27	2027-29	2029-31	2031-33	2033-2035
1	State Capital 057	Martin and Williamson Halls (major program)					
		Design	$12,566,000				
		Construction PH-1		$ 80,555,000			
		Construction PH-2			$ 60,003,059		
2	CCA Funds	GeoThermal Node Plant (infrastructure)					
		Design and Construction PH I (infrastructure)	$64,008,000				
		Design and Construction PH II (insfrastructure)		$ 50,000,000			
		Design and Construction PH III (infrastructure)			$50,000,000		
3	State Capital 057	Dental Therapy Lab & Clinic	$10,500,000				
4	State Capital 057	Civil Engineering Building - Applied Engineering (major program)					
		Design	$7,500,000				
		Construction		$ 120,000,000			
5	State Capital 057	Lucy Covington Center					
		Design	$2,400,000				
		Construction		$ 18,000,000			
6	CCA Funds	Computer Engineering Building decarbonization (standalone preservation)	$4,751,000				
7	CCA Funds	Art Complex decarbonization (standalone preservation)	$10,403,000				
8	CCA Funds	John F Kennedy Library decarbonization (standalone preservation)	$3,084,000				
9	CCA Funds	Sutton Hall decarbonization (standalone preservation)	$1,017,000				
10	CCA Funds	Huston Hall decarbonization (standalone preservation)	$1,858,000				
11	CCA Funds	Building Demolition for decarbonization (Streeter, Morrision, & Isle Hall)	$9,527,000				
		Potential Future Major Projects					
		Kingston Hall					
		Pre Design		$400,000			
		Design			$ 5,000,000		
		Construction				$ 75,000,000	
		Showalter Hall					
		Pre Design			$ 400,000		
		Design				$ 6,000,000	
		Construction					$ 85,000,000
Total Major Projects			$127,614,000	$268,955,000	$115,403,059	$81,000,000	$85,000,000

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Ten Year Capital Plan by Project Priority
2025-27 Biennium
*

Version: 24 EWU Capital Budget

Report Number: CBS001
Date Run: 9/10/2024 12:50PM

Project by Agency Priority

Priority	Project by Account-EA Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
0	**30000507 Science Renovation**									
	057-1 State Bldg Constr-State	111,287,000	37,428,000	15,364,000	58,495,000					
0	**40000070 Infrastructure Renewal III**									
	057-1 State Bldg Constr-State	10,000,000	1,117,000	6,560,000	2,323,000					
0	**40000112 Sports and Recreation Center Energy Improvements**									
	26C-1 Climate Commit Accou-State	9,998,000			9,998,000					
0	**40000114 Infrastructure Renewal IV**									
	057-1 State Bldg Constr-State	12,000,000		2,191,000	9,809,000					
0	**40000116 Minor Works: Preservation 2023-25**									
	057-1 State Bldg Constr-State	5,375,000		5,375,000						
0	**40000120 Minor Works: Program 2023-25**									
	061-1 EWU Capital Projects-State	6,000,000		6,000,000						
0	**40000183 Minor Works - HSCC - Fire Detection/Reporting Systems**									
	057-1 State Bldg Constr-State									
1	**40000113 Martin - Williamson Hall**									
	057-1 State Bldg Constr-State	153,490,000		366,000		12,566,000	80,555,000	60,003,000		
2	**40000158 Geothermal Plant - Node 1**									
	26C-1 Climate Commit Accou-State	164,008,000				64,008,000	50,000,000	50,000,000		
3	**40000157 Dental Therapy Lab and Clinic**									
	057-1 State Bldg Constr-State	10,498,000				10,498,000				
4	**40000156 Civil Engineering Building - Applied Engineering**									

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Priority	Project by Account-EA Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
4	**40000156 Civil Engineering Building - Applied Engineering**									
	057-1 State Bldg Constr-State	127,500,000				7,500,000	120,000,000			
5	**40000071 Lucy Covington Center**									
	057- State Bldg Constr-Unknown									
	057-1 State Bldg Constr-State	20,280,000				2,400,000	17,880,000			
	061-1 EWU Capital Projects-State	300,000	62,000	168,000	70,000					
	Project Total:	**20,580,000**	**62,000**	**168,000**	**70,000**	**2,400,000**	**17,880,000**			
6	**40000159 Computer Engineering Building - Decarbonization**									
	26C-1 Climate Commit Accou-State	4,751,000				4,751,000				
7	**40000161 Art Complex - Decarbonization**									
	26C-1 Climate Commit Accou-State	10,403,000				10,403,000				
8	**40000163 John F Kennedy Library - Decarbonization**									
	26C-1 Climate Commit Accou-State	3,084,000				3,084,000				
9	**40000165 Sutton Hall - Decarbonization**									
	26C-1 Climate Commit Accou-State	1,017,000				1,017,000				
10	**40000167 Huston Hall - Decarbonization**									
	26C-1 Climate Commit Accou-State	1,858,000				1,858,000				
11	**40000169 Building Demo for Decarbonization - Morrison, Streeter, & Isle**									
	26C-1 Climate Commit Accou-State	9,527,000				9,527,000				
12	**40000171 Minor Works: Preservation 2025-27**									

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Project by Agency Priority

Priority	Project by Account-EA Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
12	**40000171 Minor Works: Preservation 2025-27**									
	057-1 State Bldg Constr-State	9,850,000				9,850,000				
13	**40000192 2025 - 2027 Minor Works - Health, Safety and Code Compliance**									
	057-1 State Bldg Constr-State	9,850,000				9,850,000				
14	**40000118 2023 - 2025 Minor Works - Infrastructure Preservation**									
	057-1 State Bldg Constr-State	5,550,000				5,550,000				
15	**40000119 Minor Works - Program - 057**									
	057-1 State Bldg Constr-State	5,300,000				5,300,000				
16	**40000107 Minor Works: Preservation 2021-23**									
	061-1 EWU Capital Projects-State	3,030,000	2,012,000	1,018,000						
16	**40000201 Minor Works: Program 061 2025-27**									
	061-1 EWU Capital Projects-State	4,000,000				4,000,000				
17	**40000134 Preventative Maintenance/Backlog Reduction**									
	061-1 EWU Capital Projects-State	11,085,000		2,217,000		2,217,000	2,217,000	2,217,000	2,217,000	
18	**40000123 Kingston Hall Renovation**									
	057-1 State Bldg Constr-State	80,400,000					400,000	5,000,000	75,000,000	
19	**40000124 Showalter Hall Renovation**									
	057-1 State Bldg Constr-State	86,400,000						400,000	6,000,000	80,000,000
	Total	**876,841,000**	**40,619,000**	**39,259,000**	**80,695,000**	**164,379,000**	**271,052,000**	**117,620,000**	**83,217,000**	**80,000,000**

Total Account Summary

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Ten Year Capital Plan by Project Priority
2025-27 Biennium
*

Version: 24 EWU Capital Budget

Report Number: CBS001
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Account-Expenditure Authority Type	Estimated Total	Prior Expenditures	Current Expenditures	Reapprop 2025-27	New Approp 2025-27	Estimated 2027-29	Estimated 2029-31	Estimated 2031-33	Estimated 2033-35
057- State Bldg Constr-Unknown									
057-1 State Bldg Constr-State	647,780,000	38,545,000	29,856,000	70,627,000	63,514,000	218,835,000	65,403,000	81,000,000	80,000,000
061-1 EWU Capital Projects-State	24,415,000	2,074,000	9,403,000	70,000	6,217,000	2,217,000	2,217,000	2,217,000	
26C-1 Climate Commit Accou-State	204,646,000			9,998,000	94,648,000	50,000,000	50,000,000		
Total	**876,841,000**	**40,619,000**	**39,259,000**	**80,695,000**	**164,379,000**	**271,052,000**	**117,620,000**	**83,217,000**	**80,000,000**

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Ten Year Capital Plan by Project Priority

2025-27 Biennium

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Report Number: CBS001
Date Run: 9/10/2024 12:50PM

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Functional Area	*	All Functional Areas
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Include Enacted	No	No
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

June 25, 2024

Kris Jeske, AIA
Director of Construction & Planning
EWU Construction & Planning

In future correspondence please refer to:
Project Tracking Code: 2024-06-04495
Property: Eastern Washington University (EWU) - Martin/Williamson Hall Predesign
Re:

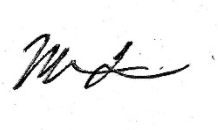
Dear Kris:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Officer (SHPO) under provisions of Governor's Executive Order 21-02 and the Office of Financial Management's requirement for DAHP predesign review on capital funded projects. Our review is based upon documentation contained in your communication.

It is our opinion that Property ID: 157306, Martin/Williamson Hall is eligible for listing in the National Register of Historic Places for its association with Eastern Washington University history and representing a significant and distinct architectural style. So, the project will likely result in an adverse impact if heavily altered in the implementation of the suggested predesign scope. We recommend keeping DAHP involved in the predesign phase as much as possible to minimize this impact as much as possible.

Also, we appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult for this project.Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,



Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

June 13, 2024

Troy Bester
Eastern Washington University

In future correspondence please refer to:
Project Tracking Code: 2020-06-04168
Property: EWU Engineering Building
Re: More Information Needed, Survey Requested

Dear Troy:

Thank you for contacting the Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Office (SHPO) under provisions of Governor's Executive Order 21-02. Our review is based upon documentation provided in your submittal. We understand this request is only regarding the predesign of the project, and appreciate you consulting with DAHP early on in project development.

In order to complete our review, we request an intensive level survey of Cadet Hall. Cadet Hall is proposed to be demolished as part of the project scope and has not been surveyed for eligibility to the National Register of Historic Places. Cadet Hall was built in 1956 and may be significant for its association with the successful ROTC program at EWU.

Before we can assess project impact on historic resources, we need to know what historic resources are present in the project area. An intensive-level survey and updated Historic Property Inventory Form completed by a Secretary of the Interior Qualified Architectural Historian will assist us in making this determination.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in conformance with Executive Order 21-02. Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 13, 2024

Troy Bester
Senior Project Manager
Construction and Planning Services, EWU

In future correspondence please refer to:
Project Tracking Code: 2024-06-04182
Property: Lucy Covington Leadership House - EWU Cheney Campus
Re: No Historic Resources Impacted

Dear Troy:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Officer (SHPO) under provisions of Governor's Executive Order 21-02. Our review is based upon documentation provided in your submittal. Please note this review is for the predesign phase of the project only.

It is our opinion that no historic resources will be impacted by the current project as proposed.

As a result of our opinion, further contact with DAHP on this proposal is not necessary. However, if new information about affected resources becomes available and/or the project scope of work changes significantly, please resume consultation as our assessment may be revised. Also, if any archaeological resources are uncovered during construction, please halt work immediately in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

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370 - Eastern Washington University
Capital FTE Summary

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS004
Date Run: 9/10/2024 1:01PM

FTEs by Job Classification

	Authorized Budget 2023-25 Biennium		2025-27 Biennium	
Job Class	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**
1004 Sr. Project Manager			3.0	3.0
1102 Assoc VP - Facilities			0.5	0.5
1588 Admin Specialist			1.0	1.0
4632I Truck Driver 1 - Float Sch			1.0	1.0
481D IT Support Technician 2			1.0	1.0
537K Const Project Coordinator 3			2.0	2.0
537L Const Project Cpordinator 4			1.0	1.0
596K Maintenance Specialist 4			2.0	2.0
608F Electrician			6.0	6.0
608H Electrician Lead			2.0	2.0
619G Sign Painter			1.0	1.0
619H Painter Lead			1.0	1.0
621F Plumbr/Pipeftr/Stmftr			2.0	2.0
621J HVAC Technician			3.0	3.0
626K Maintenance Mechanic 2			5.0	5.0
626L Maintenance Mechanic 3			2.0	2.0
7100H Office Aid			1.0	1.0
8607G Control Tech Lead - Prem Pay			1.0	1.0
Total FTEs			**35.5**	**35.5**

Account

	Authorized Budget 2023-25 Biennium		2025-27 Biennium	
Account - Expenditure Authority Type	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**
001-1 General Fund-State			1,550,000	1,550,000
148-6 HE - Dedicated Locl-Non-Appropriated			1,880,000	1,880,000
Total Funding			**3,430,000**	**3,430,000**

Narrative

The total number of FTE are higher than the previous biennium due to the previous biennium reflecting the anticipated budget reduction.

The total number of FTE are higher than the previous biennium due to the previous biennium reflecting the anticipated budget reduction.

The total number of FTE are higher than the previous biennium due to the previous biennium reflecting the anticipated budget reduction.

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Capital FTE Summary

2025-27 Biennium

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Report Number: CBS004
Date Run: 9/10/2024 1:01PM

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget

Deferred Maintenance Backlog Reduction Plan 2025-2027

Facility Condition Assessment 2022

EWU Current Replacement Value:	973,978,006
EWU Preservation Back Log Value:	132,240,991
EWU Facility Condition Index:	13.58%
EWU Facility Condition Score:	2.52

	CRV	FCA Score	CI	Backlog
Capital Funding Source: Mixed	**115,036,648**	**1.58**	**6.98%**	**8,030,299**
Pence Union Building				
Gross SF: 124,787 CRV $/SF: 463	**57,742,189**	**1.22**	**3.53%**	**2,038,581**
Equipment and Furnishings	**586,811**	**1.00**	**2.25%**	**13,203**
Equipment and Furnishings	586,811	1.00	2.25%	13,203
Interiors	**11,736,217**	**1.00**	**2.25%**	**264,065**
Interior Construction	5,281,298	1.00	2.25%	118,829
Interior Finishes	5,281,298	1.00	2.25%	118,829
Staircases	1,173,622	1.00	2.25%	26,406
Services	**26,054,402**	**1.11**	**2.86%**	**744,663**
Electrical	8,802,163	1.00	2.25%	198,049
Fire Protection	1,173,622	1.00	2.25%	26,406
HVAC	10,210,509	1.40	3.80%	388,175
Plumbing	5,281,298	1.00	2.25%	118,829
Vertical Transportation	586,811	1.00	2.25%	13,203
Shell	**14,083,460**	**1.63**	**5.06%**	**712,975**
Exterior Closure	5,281,298	1.00	2.25%	118,829
Roofing	1,760,433	2.00	6.75%	118,829
Superstructure	7,041,730	2.00	6.75%	475,317
Special Construction	**1,173,622**	**1.00**	**2.25%**	**26,406**
Special Construction	1,173,622	1.00	2.25%	26,406
Substructure	**4,107,676**	**2.00**	**6.75%**	**277,268**
Foundations	4,107,676	2.00	6.75%	277,268
Tawanka Commons				
Gross SF: 73,735 CRV $/SF: 417	**30,714,754**	**2.72**	**16.77%**	**5,150,321**
Equipment and Furnishings	**319,945**	**2.00**	**6.75%**	**21,596**
Equipment and Furnishings	319,945	2.00	6.75%	21,596
Interiors	**6,398,907**	**2.25**	**7.88%**	**503,914**
Interior Construction	2,879,508	2.00	6.75%	194,367
Interior Finishes	2,879,508	2.00	6.75%	194,367
Staircases	639,891	3.00	18.00%	115,180
Services	**14,077,596**	**3.16**	**23.56%**	**3,316,074**
Electrical	4,479,235	2.33	14.18%	634,932
Fire Protection	639,891	3.75	56.08%	358,819
HVAC	5,759,016	3.33	29.73%	1,711,868
Plumbing	2,879,508	3.20	20.45%	588,859
Vertical Transportation	319,945	2.00	6.75%	21,596
Shell	**7,678,688**	**2.50**	**15.08%**	**1,157,562**
Exterior Closure	2,879,508	2.67	14.55%	418,968
Roofing	959,836	2.00	6.75%	64,789
Superstructure	3,839,344	3.00	17.55%	673,805
Substructure	**2,239,618**	**2.00**	**6.75%**	**151,174**
Foundations	2,239,618	2.00	6.75%	151,174
University Recreation Center				
Gross SF: 25,875 CRV $/SF: 1,027	**26,579,705**	**1.22**	**3.17%**	**841,398**
Equipment and Furnishings	**270,394**	**1.00**	**2.25%**	**6,084**
Equipment and Furnishings	270,394	1.00	2.25%	6,084

	CRV	FCA Score	CI	Backlog
Interiors	**5,407,875**	**1.06**	**2.53%**	**136,887**
Interior Construction	2,433,544	1.00	2.25%	54,755
Interior Finishes	2,433,544	1.17	2.88%	69,964
Staircases	540,788	1.00	2.25%	12,168
Services	**12,248,837**	**1.36**	**3.75%**	**459,940**
Electrical	3,920,709	1.00	2.25%	88,216
Fire Protection	486,709	1.33	4.25%	20,685
HVAC	5,137,481	1.43	4.38%	225,103
Plumbing	2,433,544	1.60	4.93%	119,852
Vertical Transportation	270,394	1.00	2.25%	6,084
Shell	**6,489,450**	**1.19**	**2.93%**	**189,816**
Exterior Closure	2,433,544	1.00	2.25%	54,755
Roofing	811,181	1.50	7.65%	62,055
Superstructure	3,244,725	1.00	2.25%	73,006
Special Construction	**270,394**	**1.00**	**2.25%**	**6,084**
Special Construction	270,394	1.00	2.25%	6,084
Substructure	**1,892,756**	**1.00**	**2.25%**	**42,587**
Foundations	1,892,756	1.00	2.25%	42,587
Capital Funding Source: State	**858,941,357**	**2.61**	**14.46%**	**124,210,692**
Aquatics Building				
Gross SF: 21,237 CRV $/SF: 511	**10,858,871**	**2.65**	**13.81%**	**1,499,241**
Interiors	**2,330,230**	**2.13**	**7.59%**	**176,952**
Interior Construction	1,048,603	2.33	8.63%	90,442
Interior Finishes	1,048,603	2.00	6.75%	70,781
Staircases	233,023	2.00	6.75%	15,729
Services	**4,916,785**	**3.00**	**18.84%**	**926,441**
Electrical	1,631,161	2.33	14.18%	231,217
Fire Protection	23,302	2.00	6.75%	1,573
HVAC	2,213,718	3.00	18.00%	398,469
Plumbing	1,048,603	3.60	28.15%	295,182
Shell	**2,796,276**	**2.63**	**12.19%**	**340,796**
Exterior Closure	1,048,603	3.00	18.00%	188,749
Roofing	349,534	2.67	16.50%	57,673
Superstructure	1,398,138	2.00	6.75%	94,374
Substructure	**815,580**	**2.00**	**6.75%**	**55,052**
Foundations	815,580	2.00	6.75%	55,052
Art Building				
Gross SF: 35,493 CRV $/SF: 589	**20,905,512**	**3.03**	**19.22%**	**4,018,367**
Equipment and Furnishings	**214,196**	**2.50**	**10.13%**	**21,687**
Equipment and Furnishings	214,196	2.50	10.13%	21,687
Interiors	**4,283,916**	**2.50**	**10.46%**	**448,205**
Interior Construction	1,927,762	2.67	11.50%	221,693
Interior Finishes	1,927,762	2.33	9.88%	190,367
Staircases	428,392	2.50	8.44%	36,146
Services	**9,338,938**	**3.47**	**27.54%**	**2,572,063**
Electrical	2,998,741	3.33	23.96%	718,573
Fire Protection	342,713	3.50	59.47%	203,807
HVAC	3,855,525	3.67	25.44%	980,749
Plumbing	1,927,762	3.40	32.70%	630,378
Vertical Transportation	214,196	3.00	18.00%	38,555
Shell	**5,140,700**	**2.75**	**12.38%**	**636,162**
Exterior Closure	1,927,762	3.00	18.00%	346,997
Roofing	642,587	3.00	18.00%	115,666
Superstructure	2,570,350	2.00	6.75%	173,499
Special Construction	**428,392**	**3.00**	**18.00%**	**77,110**
Special Construction	428,392	3.00	18.00%	77,110

			CRV	FCA Score	CI	Backlog
Substructure			**1,499,371**	**3.00**	**17.55%**	**263,140**
Foundations			1,499,371	3.00	17.55%	263,140
Biology Boat Garage						
Gross SF:	**1,973**	**CRV $/SF:** **232**	**458,335**	**2.50**	**12.61%**	**57,804**
Services			**127,851**	**3.00**	**18.00%**	**23,013**
Electrical			127,851	3.00	18.00%	23,013
Shell			**246,053**	**2.33**	**10.28%**	**25,293**
Exterior Closure			77,193	3.00	18.00%	13,895
Roofing			24,123	2.00	6.75%	1,628
Superstructure			144,737	2.00	6.75%	9,770
Substructure			**84,430**	**2.50**	**11.25%**	**9,498**
Foundations			84,430	2.50	11.25%	9,498
Biology Storage						
Gross SF:	**598**	**CRV $/SF:** **288**	**172,185**	**3.00**	**18.00%**	**30,993**
Interiors			**23,762**	**3.00**	**18.00%**	**4,277**
Interior Finishes			23,762	3.00	18.00%	4,277
Services			**38,751**	**3.00**	**18.00%**	**6,975**
Electrical			38,751	3.00	18.00%	6,975
Shell			**84,082**	**3.00**	**18.00%**	**15,135**
Exterior Closure			32,902	3.00	18.00%	5,922
Roofing			7,311	3.00	18.00%	1,316
Superstructure			43,869	3.00	18.00%	7,896
Substructure			**25,590**	**3.00**	**18.00%**	**4,606**
Foundations			25,590	3.00	18.00%	4,606
Cadet Hall						
Gross SF:	**10,187**	**CRV $/SF:** **506**	**5,151,795**	**3.32**	**23.02%**	**1,186,066**
Equipment and Furnishings			**61,477**	**3.00**	**18.00%**	**11,066**
Equipment and Furnishings			61,477	3.00	18.00%	11,066
Interiors			**1,229,545**	**3.00**	**18.00%**	**221,318**
Interior Construction			553,295	3.00	18.00%	99,593
Interior Finishes			553,295	3.00	18.00%	99,593
Staircases			122,955	3.00	18.00%	22,132
Services			**1,954,977**	**3.79**	**31.24%**	**610,638**
Electrical			860,682	3.67	29.93%	257,559
Fire Protection			98,364	4.50	62.84%	61,815
HVAC			528,705	4.00	34.24%	181,020
Plumbing			467,227	3.25	23.60%	110,244
Shell			**1,475,454**	**3.00**	**18.00%**	**265,582**
Exterior Closure			553,295	3.00	18.00%	99,593
Roofing			184,432	3.00	18.00%	33,198
Superstructure			737,727	3.00	18.00%	132,791
Substructure			**430,341**	**3.00**	**18.00%**	**77,461**
Foundations			430,341	3.00	18.00%	77,461
Carpenter Storage						
Gross SF:	**3,600**	**CRV $/SF:** **178**	**639,916**	**2.00**	**6.75%**	**43,194**
Interiors			**189,605**	**2.00**	**6.75%**	**12,798**
Interior Construction			88,877	2.00	6.75%	5,999
Interior Finishes			77,027	2.00	6.75%	5,199
Staircases			23,701	2.00	6.75%	1,600
Services			**125,613**	**2.00**	**6.75%**	**8,479**
Electrical			125,613	2.00	6.75%	8,479
Shell			**241,746**	**2.00**	**6.75%**	**16,318**
Exterior Closure			75,842	2.00	6.75%	5,119
Roofing			23,701	2.00	6.75%	1,600
Superstructure			142,204	2.00	6.75%	9,599

								CRV	FCA Score	CI	Backlog
Substructure								**82,952**	**2.00**	**6.75%**	**5,599**
Foundations								82,952	2.00	6.75%	5,599
Central Services Building											
Gross SF:	**13,091**	**CRV $/SF:**	**293**					**3,830,905**	**2.58**	**13.66%**	**523,378**
Equipment and Furnishings								**12,928**	**3.00**	**18.00%**	**2,327**
Equipment and Furnishings								12,928	3.00	18.00%	2,327
Interiors								**797,208**	**2.29**	**11.43%**	**91,140**
Interior Construction								323,192	2.50	14.55%	47,024
Interior Finishes								387,831	2.33	9.88%	38,298
Staircases								86,185	2.00	6.75%	5,817
Services								**1,684,909**	**2.67**	**16.71%**	**281,565**
Electrical								603,292	2.33	14.18%	85,517
Fire Protection								17,237	1.00	2.25%	388
HVAC								736,878	3.17	18.55%	136,710
Plumbing								327,501	3.00	18.00%	58,950
Shell								**1,034,215**	**2.75**	**12.38%**	**127,984**
Exterior Closure								387,831	3.00	18.00%	69,810
Roofing								129,277	3.00	18.00%	23,270
Superstructure								517,108	2.00	6.75%	34,905
Substructure								**301,646**	**2.00**	**6.75%**	**20,361**
Foundations								301,646	2.00	6.75%	20,361
Chemical Storage											
Gross SF:	**864**	**CRV $/SF:**	**281**					**242,884**	**2.59**	**13.46%**	**32,681**
Interiors								**46,927**	**2.40**	**10.84%**	**5,087**
Interior Construction								21,331	2.00	6.75%	1,440
Interior Finishes								25,597	2.67	14.25%	3,648
Services								**107,790**	**3.17**	**20.08%**	**21,642**
Electrical								39,817	3.00	18.00%	7,167
Fire Protection								3,982	2.00	6.75%	269
HVAC								48,634	3.17	18.55%	9,023
Plumbing								15,358	4.00	33.75%	5,183
Shell								**68,258**	**2.00**	**6.75%**	**4,607**
Exterior Closure								25,597	2.00	6.75%	1,728
Roofing								8,532	2.00	6.75%	576
Superstructure								34,129	2.00	6.75%	2,304
Substructure								**19,909**	**2.00**	**6.75%**	**1,344**
Foundations								19,909	2.00	6.75%	1,344
Cheney Hall											
Gross SF:	**31,018**	**CRV $/SF:**	**549**					**17,043,181**	**2.95**	**18.65%**	**3,178,438**
Equipment and Furnishings								**178,276**	**1.50**	**3.60%**	**6,418**
Equipment and Furnishings								178,276	1.50	3.60%	6,418
Interiors								**3,565,519**	**2.75**	**16.19%**	**577,213**
Interior Construction								1,604,484	3.00	18.00%	288,807
Interior Finishes								1,604,484	3.00	16.48%	264,339
Staircases								356,552	2.00	6.75%	24,067
Services								**7,772,832**	**3.47**	**26.15%**	**2,032,435**
Electrical								2,495,863	3.33	21.83%	544,722
Fire Protection								285,242	4.00	60.88%	173,641
HVAC								3,208,967	3.67	28.59%	917,364
Plumbing								1,604,484	3.20	22.73%	364,619
Vertical Transportation								178,276	3.00	18.00%	32,090
Shell								**4,278,623**	**2.63**	**11.18%**	**478,136**
Exterior Closure								1,604,484	3.00	15.30%	245,486
Roofing								534,828	2.67	16.50%	88,247
Superstructure								2,139,311	2.00	6.75%	144,404
Substructure								**1,247,932**	**2.00**	**6.75%**	**84,235**

	CRV	FCA Score	CI	Backlog
Foundations	1,247,932	2.00	6.75%	84,235
Childcare Facility				
Gross SF: 14,865 CRV $/SF: 331	**4,920,371**	**2.34**	**10.95%**	**538,944**
Equipment and Furnishings	**16,311**	**2.00**	**6.75%**	**1,101**
Equipment and Furnishings	16,311	2.00	6.75%	1,101
Interiors	**978,637**	**2.00**	**8.81%**	**86,242**
Interior Construction	489,319	2.00	6.75%	33,029
Interior Finishes	489,319	2.00	10.88%	53,213
Services	**2,239,992**	**2.33**	**10.33%**	**231,325**
Electrical	761,162	2.00	6.75%	51,378
Fire Protection	86,990	2.00	6.75%	5,872
HVAC	978,637	2.83	14.94%	146,184
Plumbing	413,202	2.00	6.75%	27,891
Shell	**1,304,850**	**2.50**	**11.63%**	**151,770**
Exterior Closure	489,319	3.00	10.77%	52,683
Roofing	163,106	2.00	6.75%	11,010
Superstructure	652,425	2.50	13.50%	88,077
Substructure	**380,581**	**3.00**	**18.00%**	**68,505**
Foundations	380,581	3.00	18.00%	68,505
Communications Center				
Gross SF: 19,289 CRV $/SF: 557	**10,744,339**	**2.97**	**17.35%**	**1,864,050**
Equipment and Furnishings	**116,407**	**3.00**	**18.00%**	**20,953**
Equipment and Furnishings	116,407	3.00	18.00%	20,953
Interiors	**2,328,134**	**2.38**	**9.62%**	**223,937**
Interior Construction	1,047,660	2.33	9.63%	100,837
Interior Finishes	1,047,660	2.33	9.88%	103,456
Staircases	232,813	2.50	8.44%	19,644
Services	**4,691,190**	**3.40**	**24.10%**	**1,130,426**
Electrical	1,629,694	3.33	23.96%	390,515
Fire Protection	186,251	3.00	18.00%	33,525
HVAC	1,874,148	3.60	24.46%	458,351
Plumbing	884,691	3.25	23.60%	208,746
Vertical Transportation	116,407	4.00	33.75%	39,287
Shell	**2,793,761**	**2.75**	**12.38%**	**345,728**
Exterior Closure	1,047,660	3.00	18.00%	188,579
Roofing	349,220	3.00	18.00%	62,860
Superstructure	1,396,880	2.00	6.75%	94,289
Substructure	**814,847**	**3.00**	**17.55%**	**143,006**
Foundations	814,847	3.00	17.55%	143,006
Computing and Engineering Sciences Bldg				
Gross SF: 98,383 CRV $/SF: 549	**54,057,621**	**1.70**	**6.31%**	**3,413,518**
Equipment and Furnishings	**565,456**	**2.00**	**13.28%**	**75,064**
Equipment and Furnishings	565,456	2.00	13.28%	75,064
Interiors	**11,309,126**	**1.38**	**3.85%**	**435,119**
Interior Construction	5,089,107	1.00	2.25%	114,505
Interior Finishes	5,089,107	1.67	5.65%	287,535
Staircases	1,130,913	1.50	2.93%	33,079
Services	**24,653,894**	**2.06**	**8.15%**	**2,010,197**
Electrical	7,916,388	1.67	5.66%	447,841
Fire Protection	904,730	2.00	6.75%	61,069
HVAC	10,178,213	2.33	11.00%	1,119,603
Plumbing	5,089,107	2.00	6.75%	343,515
Vertical Transportation	565,456	2.00	6.75%	38,168
Shell	**13,570,951**	**1.00**	**2.25%**	**305,346**
Exterior Closure	5,089,107	1.00	2.25%	114,505
Roofing	1,696,369	1.00	2.25%	38,168

						CRV	FCA Score	CI	Backlog
Superstructure						6,785,475	1.00	2.25%	152,673
Substructure						**3,958,194**	**2.50**	**14.85%**	**587,792**
Foundations						3,958,194	2.50	14.85%	587,792
Electric Storage									
Gross SF:	**1,600**	**CRV $/SF:**	**154**			**246,486**	**2.00**	**6.75%**	**16,638**
Interiors						**46,348**	**2.00**	**6.75%**	**3,128**
Interior Construction						12,114	2.00	6.75%	818
Interior Finishes						34,234	2.00	6.75%	2,311
Services						**55,828**	**2.00**	**6.75%**	**3,768**
Electrical						55,828	2.00	6.75%	3,768
Shell						**107,443**	**2.00**	**6.75%**	**7,252**
Exterior Closure						33,708	2.00	6.75%	2,275
Roofing						10,534	2.00	6.75%	711
Superstructure						63,202	2.00	6.75%	4,266
Substructure						**36,868**	**2.00**	**6.75%**	**2,489**
Foundations						36,868	2.00	6.75%	2,489
Fifth Street Hall									
Gross SF:	**7,163**	**CRV $/SF:**	**329**			**2,354,614**	**4.63**	**53.22%**	**1,253,167**
Equipment and Furnishings						**18,815**	**5.00**	**67.00%**	**12,606**
Equipment and Furnishings						18,815	5.00	67.00%	12,606
Interiors						**497,264**	**4.00**	**33.75%**	**167,827**
Interior Construction						201,594	4.00	33.75%	68,038
Interior Finishes						241,912	4.00	33.75%	81,645
Staircases						53,758	4.00	33.75%	18,143
Services						**1,032,160**	**5.00**	**67.00%**	**691,547**
Electrical						284,919	5.00	67.00%	190,896
Fire Protection						5,376	5.00	67.00%	3,602
HVAC						510,704	5.00	67.00%	342,172
Plumbing						204,282	5.00	67.00%	136,869
Vertical Transportation						26,879	5.00	67.00%	18,009
Shell						**618,221**	**4.43**	**45.32%**	**280,148**
Exterior Closure						241,912	4.67	57.39%	138,844
Roofing						53,758	4.50	60.35%	32,443
Superstructure						322,550	4.00	33.75%	108,861
Substructure						**188,154**	**4.50**	**53.70%**	**101,039**
Foundations						188,154	4.50	53.70%	101,039
Greenhouse Boneyard									
Gross SF:	**1,421**	**CRV $/SF:**	**98**			**138,738**	**3.47**	**23.69%**	**32,864**
Equipment and Furnishings						**853**	**4.00**	**33.75%**	**288**
Equipment and Furnishings						853	4.00	33.75%	288
Services						**76,477**	**3.20**	**20.40%**	**15,602**
Electrical						15,068	3.00	18.00%	2,712
HVAC						37,243	3.00	18.00%	6,704
Plumbing						24,165	3.50	25.60%	6,186
Shell						**43,782**	**3.60**	**28.23%**	**12,358**
Exterior Closure						25,587	3.67	32.70%	8,367
Roofing						4,549	4.00	33.75%	1,535
Superstructure						13,646	3.00	18.00%	2,456
Special Construction						**5,686**	**5.00**	**67.00%**	**3,810**
Special Construction						5,686	5.00	67.00%	3,810
Substructure						**11,941**	**2.00**	**6.75%**	**806**
Foundations						11,941	2.00	6.75%	806
Greenhouse Science									
Gross SF:	**1,754**	**CRV $/SF:**	**148**			**259,332**	**2.83**	**15.85%**	**41,105**
Interiors						**22,810**	**2.00**	**6.75%**	**1,540**

	CRV	FCA Score	CI	Backlog
Interior Finishes	22,810	2.00	6.75%	1,540
Services	**124,227**	**3.64**	**24.99%**	**31,038**
Electrical	37,198	3.00	18.00%	6,696
HVAC	63,166	3.67	25.79%	16,289
Plumbing	23,863	4.00	33.75%	8,054
Shell	**80,712**	**2.00**	**6.75%**	**5,448**
Exterior Closure	31,583	2.00	6.75%	2,132
Roofing	7,018	2.00	6.75%	474
Superstructure	42,111	2.00	6.75%	2,842
Special Construction	**7,018**	**3.00**	**20.25%**	**1,421**
Special Construction	7,018	3.00	20.25%	1,421
Substructure	**24,565**	**2.00**	**6.75%**	**1,658**
Foundations	24,565	2.00	6.75%	1,658
Grounds Covered Storage				
Gross SF: 2,920 CRV $/SF: 172	**502,703**	**2.21**	**9.16%**	**46,043**
Interiors	**112,459**	**2.00**	**6.75%**	**7,591**
Interior Construction	49,982	2.00	6.75%	3,374
Interior Finishes	62,477	2.00	6.75%	4,217
Services	**101,886**	**3.00**	**18.00%**	**18,340**
Electrical	101,886	3.00	18.00%	18,340
Shell	**221,074**	**2.14**	**7.04%**	**15,571**
Exterior Closure	86,507	2.33	7.50%	6,488
Roofing	19,224	2.00	6.75%	1,298
Superstructure	115,343	2.00	6.75%	7,786
Substructure	**67,283**	**2.00**	**6.75%**	**4,542**
Foundations	67,283	2.00	6.75%	4,542
Hargreaves Hall				
Gross SF: 56,616 CRV $/SF: 539	**30,490,023**	**1.19**	**3.04%**	**927,635**
Equipment and Furnishings	**325,400**	**1.00**	**2.25%**	**7,322**
Equipment and Furnishings	325,400	1.00	2.25%	7,322
Interiors	**6,508,009**	**1.00**	**2.25%**	**146,430**
Interior Construction	2,928,604	1.00	2.25%	65,894
Interior Finishes	2,928,604	1.00	2.25%	65,894
Staircases	650,801	1.00	2.25%	14,643
Services	**13,569,199**	**1.25**	**2.65%**	**359,486**
Electrical	4,555,606	1.00	2.25%	102,501
Fire Protection	520,641	2.00	6.75%	35,143
HVAC	5,238,947	1.40	2.84%	148,627
Plumbing	2,928,604	1.00	2.25%	65,894
Vertical Transportation	325,400	1.00	2.25%	7,322
Shell	**7,809,611**	**1.13**	**3.34%**	**260,646**
Exterior Closure	2,928,604	1.33	5.15%	150,823
Roofing	976,201	1.00	2.25%	21,965
Superstructure	3,904,805	1.00	2.25%	87,858
Substructure	**2,277,803**	**2.00**	**6.75%**	**153,752**
Foundations	2,277,803	2.00	6.75%	153,752
Hazardous Waste Transfer Facility				
Gross SF: 1,196 CRV $/SF: 270	**323,266**	**2.25**	**8.77%**	**28,366**
Interiors	**67,803**	**2.00**	**6.75%**	**4,577**
Interior Construction	39,369	2.00	6.75%	2,657
Interior Finishes	28,433	2.00	6.75%	1,919
Services	**135,605**	**2.55**	**11.58%**	**15,699**
Electrical	46,368	2.00	6.75%	3,130
Fire Protection	875	3.00	18.00%	157
HVAC	57,304	3.00	18.00%	10,315
Plumbing	31,058	2.00	6.75%	2,096

	CRV	FCA Score	CI	Backlog
Shell	**89,237**	**2.00**	**6.75%**	**6,024**
Exterior Closure	27,996	2.00	6.75%	1,890
Roofing	8,749	2.00	6.75%	591
Superstructure	52,492	2.00	6.75%	3,543
Substructure	**30,621**	**2.00**	**6.75%**	**2,067**
Foundations	30,621	2.00	6.75%	2,067
Huston Hall				
Gross SF: 27,425 CRV $/SF: 548	**15,037,443**	**2.76**	**16.48%**	**2,477,986**
Equipment and Furnishings	**157,625**	**2.50**	**10.13%**	**15,960**
Equipment and Furnishings	157,625	2.50	10.13%	15,960
Interiors	**3,152,504**	**2.63**	**15.64%**	**492,973**
Interior Construction	1,418,627	3.00	18.00%	255,353
Interior Finishes	1,418,627	2.67	15.25%	216,341
Staircases	315,250	2.00	6.75%	21,279
Services	**6,840,933**	**2.89**	**18.78%**	**1,284,566**
Electrical	2,206,753	2.33	14.18%	312,807
Fire Protection	283,725	2.33	8.00%	22,698
HVAC	2,994,879	3.29	23.54%	705,057
Plumbing	1,197,951	3.00	18.00%	215,631
Vertical Transportation	157,625	3.00	18.00%	28,373
Shell	**3,783,004**	**2.75**	**14.81%**	**560,358**
Exterior Closure	1,418,627	2.67	10.75%	152,502
Roofing	472,876	2.67	14.25%	67,385
Superstructure	1,891,502	3.00	18.00%	340,470
Substructure	**1,103,376**	**2.50**	**11.25%**	**124,130**
Foundations	1,103,376	2.50	11.25%	124,130
Indian Education Center				
Gross SF: 3,537 CRV $/SF: 526	**1,862,128**	**2.71**	**16.25%**	**302,642**
Equipment and Furnishings	**6,099**	**2.00**	**6.75%**	**412**
Equipment and Furnishings	6,099	2.00	6.75%	412
Interiors	**406,578**	**2.25**	**9.11%**	**37,049**
Interior Construction	182,960	2.00	6.75%	12,350
Interior Finishes	182,960	2.33	9.88%	18,067
Staircases	40,658	2.50	16.31%	6,632
Services	**819,255**	**2.93**	**18.18%**	**148,970**
Electrical	284,605	3.00	17.57%	49,994
Fire Protection	32,526	4.00	60.88%	19,800
HVAC	347,624	3.00	18.00%	62,572
Plumbing	154,500	2.25	10.75%	16,604
Shell	**487,894**	**2.38**	**8.16%**	**39,794**
Exterior Closure	182,960	2.00	6.75%	12,350
Roofing	60,987	3.00	18.00%	10,978
Superstructure	243,947	2.00	6.75%	16,466
Substructure	**142,302**	**4.50**	**53.70%**	**76,416**
Foundations	142,302	4.50	53.70%	76,416
Isle Hall				
Gross SF: 34,322 CRV $/SF: 565	**19,407,985**	**3.50**	**29.99%**	**5,820,169**
Equipment and Furnishings	**207,129**	**3.00**	**14.85%**	**30,759**
Equipment and Furnishings	207,129	3.00	14.85%	30,759
Interiors	**4,142,580**	**3.38**	**29.72%**	**1,231,019**
Interior Construction	1,864,161	3.33	20.63%	384,483
Interior Finishes	1,864,161	3.67	41.41%	771,970
Staircases	414,258	3.00	18.00%	74,566
Services	**8,637,278**	**3.56**	**30.45%**	**2,629,813**
Electrical	2,899,806	4.00	33.75%	978,684
Fire Protection	331,406	3.00	58.91%	195,219

	CRV	FCA Score	CI	Backlog
HVAC	3,334,777	3.40	24.55%	818,833
Plumbing	1,864,161	3.60	30.43%	567,171
Vertical Transportation	207,129	4.00	33.75%	69,906
Shell	**4,971,095**	**3.75**	**33.55%**	**1,667,595**
Exterior Closure	1,864,161	4.00	42.31%	788,644
Roofing	621,387	3.67	31.65%	196,669
Superstructure	2,485,548	3.50	27.45%	682,283
Substructure	**1,449,903**	**3.00**	**18.00%**	**260,983**
Foundations	1,449,903	3.00	18.00%	260,983
Jim Thorpe Fieldhouse				
Gross SF: 51,316 CRV $/SF: 454	**23,300,158**	**2.76**	**16.02%**	**3,733,723**
Interiors	**4,960,333**	**2.14**	**8.15%**	**404,200**
Interior Construction	2,010,946	2.50	10.20%	205,116
Interior Finishes	2,413,135	2.00	6.75%	162,887
Staircases	536,252	2.00	6.75%	36,197
Services	**10,027,916**	**3.17**	**20.83%**	**2,089,172**
Electrical	3,753,765	2.67	15.27%	573,120
Fire Protection	53,625	2.00	6.75%	3,620
HVAC	4,316,830	3.60	24.46%	1,055,747
Plumbing	1,903,695	3.33	23.99%	456,686
Shell	**6,435,026**	**2.75**	**15.99%**	**1,029,202**
Exterior Closure	2,413,135	3.33	28.15%	679,297
Roofing	804,378	2.67	16.50%	132,722
Superstructure	3,217,513	2.00	6.75%	217,182
Substructure	**1,876,883**	**2.50**	**11.25%**	**211,149**
Foundations	1,876,883	2.50	11.25%	211,149
John F Kennedy Library				
Gross SF: 165,159 CRV $/SF: 447	**73,862,920**	**2.58**	**12.03%**	**8,887,259**
Equipment and Furnishings	**771,012**	**2.00**	**6.75%**	**52,043**
Equipment and Furnishings	771,012	2.00	6.75%	52,043
Interiors	**15,420,234**	**2.25**	**9.00%**	**1,387,821**
Interior Construction	6,939,105	2.33	8.63%	598,498
Interior Finishes	6,939,105	2.33	9.88%	685,237
Staircases	1,542,023	2.00	6.75%	104,087
Services	**33,770,312**	**2.83**	**15.57%**	**5,258,107**
Electrical	10,794,164	3.00	18.00%	1,942,950
Fire Protection	1,387,821	2.00	6.75%	93,678
HVAC	13,878,210	3.00	13.21%	1,833,659
Plumbing	6,939,105	3.00	18.00%	1,249,039
Vertical Transportation	771,012	3.00	18.00%	138,782
Shell	**18,504,280**	**2.63**	**9.86%**	**1,824,985**
Exterior Closure	6,939,105	2.00	6.75%	468,390
Roofing	2,313,035	3.67	31.65%	732,076
Superstructure	9,252,140	2.00	6.75%	624,519
Substructure	**5,397,082**	**2.00**	**6.75%**	**364,303**
Foundations	5,397,082	2.00	6.75%	364,303
Kingston Hall				
Gross SF: 49,427 CRV $/SF: 565	**27,949,376**	**2.78**	**15.36%**	**4,292,631**
Equipment and Furnishings	**298,286**	**3.00**	**18.00%**	**53,691**
Equipment and Furnishings	298,286	3.00	18.00%	53,691
Interiors	**5,965,715**	**2.38**	**10.18%**	**607,384**
Interior Construction	2,684,572	2.67	11.25%	302,014
Interior Finishes	2,684,572	2.33	9.88%	265,101
Staircases	596,572	2.00	6.75%	40,269
Services	**12,438,516**	**3.06**	**20.94%**	**2,604,706**
Electrical	4,176,001	2.33	14.18%	591,948

			CRV	**FCA Score**	**CI**	**Backlog**
Fire Protection			477,257	2.50	29.81%	142,282
HVAC			4,802,401	3.60	24.46%	1,174,500
Plumbing			2,684,572	3.40	25.18%	675,841
Vertical Transportation			298,286	2.00	6.75%	20,134
Shell			**7,158,858**	**2.75**	**12.38%**	**885,909**
Exterior Closure			2,684,572	3.00	18.00%	483,223
Roofing			894,857	3.00	18.00%	161,074
Superstructure			3,579,429	2.00	6.75%	241,611
Substructure			**2,088,000**	**2.00**	**6.75%**	**140,940**
Foundations			2,088,000	2.00	6.75%	140,940
Martin Hall						
Gross SF:	**57,792**	**CRV $/SF:** **537**	**31,056,915**	**3.30**	**24.78%**	**7,696,801**
Equipment and Furnishings			**332,160**	**2.50**	**10.13%**	**33,631**
Equipment and Furnishings			332,160	2.50	10.13%	33,631
Interiors			**6,643,190**	**3.13**	**19.18%**	**1,274,247**
Interior Construction			2,989,436	3.33	20.63%	616,571
Interior Finishes			2,989,436	3.00	18.00%	538,098
Staircases			664,319	3.00	18.00%	119,577
Services			**13,784,620**	**3.94**	**32.30%**	**4,451,768**
Electrical			4,982,393	3.75	26.83%	1,336,859
Fire Protection			597,887	4.00	57.86%	345,944
HVAC			5,679,928	4.00	33.75%	1,916,976
Plumbing			2,524,412	4.00	33.75%	851,989
Shell			**7,971,828**	**2.38**	**19.18%**	**1,529,096**
Exterior Closure			2,989,436	3.00	18.00%	538,098
Roofing			996,479	1.00	2.25%	22,421
Superstructure			3,985,914	3.50	24.30%	968,577
Substructure			**2,325,117**	**3.00**	**17.55%**	**408,058**
Foundations			2,325,117	3.00	17.55%	408,058
Monroe Hall						
Gross SF:	**49,194**	**CRV $/SF:** **530**	**26,097,134**	**2.17**	**10.39%**	**2,712,632**
Equipment and Furnishings			**282,743**	**2.50**	**14.63%**	**41,351**
Equipment and Furnishings			282,743	2.50	14.63%	41,351
Interiors			**5,654,850**	**1.50**	**4.84%**	**273,553**
Interior Construction			2,544,683	2.00	6.75%	171,766
Interior Finishes			2,544,683	1.33	3.50%	89,064
Staircases			565,485	1.00	2.25%	12,723
Services			**11,394,523**	**2.20**	**11.44%**	**1,303,514**
Electrical			3,958,395	2.33	9.48%	375,341
Fire Protection			452,388	2.00	6.75%	30,536
HVAC			4,552,154	2.40	16.11%	733,505
Plumbing			2,148,843	2.00	6.75%	145,047
Vertical Transportation			282,743	2.00	6.75%	19,085
Shell			**6,785,820**	**2.50**	**10.88%**	**737,958**
Exterior Closure			2,544,683	2.33	14.00%	356,256
Roofing			848,228	3.00	18.00%	152,681
Superstructure			3,392,910	2.00	6.75%	229,021
Substructure			**1,979,198**	**3.00**	**18.00%**	**356,256**
Foundations			1,979,198	3.00	18.00%	356,256
Music Building						
Gross SF:	**47,618**	**CRV $/SF:** **532**	**25,315,812**	**3.03**	**18.02%**	**4,561,499**
Equipment and Furnishings			**273,684**	**2.50**	**10.13%**	**27,711**
Equipment and Furnishings			273,684	2.50	10.13%	27,711
Interiors			**5,473,689**	**2.38**	**9.62%**	**526,500**
Interior Construction			2,463,160	2.33	9.63%	237,079
Interior Finishes			2,463,160	2.33	9.88%	243,237

	CRV	FCA Score	CI	Backlog
Staircases	547,369	2.50	8.44%	46,184
Services	**11,084,220**	**3.56**	**25.79%**	**2,858,224**
Electrical	3,831,582	3.00	18.00%	689,685
Fire Protection	492,632	4.33	37.44%	184,463
HVAC	4,406,320	3.80	32.77%	1,444,028
Plumbing	2,080,002	3.25	23.60%	490,785
Vertical Transportation	273,684	3.00	18.00%	49,263
Shell	**6,568,427**	**2.75**	**12.38%**	**812,843**
Exterior Closure	2,463,160	3.00	18.00%	443,369
Roofing	821,053	3.00	18.00%	147,790
Superstructure	3,284,213	2.00	6.75%	221,684
Substructure	**1,915,791**	**3.00**	**17.55%**	**336,221**
Foundations	1,915,791	3.00	17.55%	336,221
One Room School House				
Gross SF: 1,136 CRV $/SF: 446	**506,532**	**1.79**	**7.45%**	**37,715**
Equipment and Furnishings	**1,763**	**1.00**	**2.25%**	**40**
Equipment and Furnishings	1,763	1.00	2.25%	40
Interiors	**96,958**	**1.40**	**4.64%**	**4,495**
Interior Construction	44,072	1.00	2.25%	992
Interior Finishes	52,886	1.67	6.63%	3,504
Services	**225,648**	**2.15**	**6.67%**	**15,040**
Electrical	82,267	1.67	5.66%	4,654
Fire Protection	1,175	5.00	67.00%	787
HVAC	100,484	2.00	6.75%	6,783
Plumbing	41,721	2.00	6.75%	2,816
Shell	**141,030**	**1.63**	**11.68%**	**16,474**
Exterior Closure	52,886	1.67	12.40%	6,558
Roofing	17,629	1.00	2.25%	397
Superstructure	70,515	2.50	13.50%	9,520
Substructure	**41,134**	**1.50**	**4.05%**	**1,666**
Foundations	41,134	1.50	4.05%	1,666
P.E. Activities Building				
Gross SF: 93,859 CRV $/SF: 509	**47,734,376**	**2.80**	**15.83%**	**7,554,081**
Equipment and Furnishings	**154,480**	**3.00**	**18.00%**	**27,806**
Equipment and Furnishings	154,480	3.00	18.00%	27,806
Interiors	**10,298,679**	**2.38**	**10.29%**	**1,060,120**
Interior Construction	4,634,405	2.67	11.50%	532,957
Interior Finishes	4,634,405	2.33	9.88%	457,648
Staircases	1,029,868	2.00	6.75%	69,516
Services	**21,318,265**	**3.13**	**22.02%**	**4,693,494**
Electrical	7,209,075	3.33	21.83%	1,573,381
Fire Protection	926,881	3.00	18.00%	166,839
HVAC	9,268,811	2.83	20.41%	1,891,996
Plumbing	3,913,498	3.50	27.12%	1,061,279
Shell	**12,358,414**	**2.75**	**12.38%**	**1,529,354**
Exterior Closure	4,634,405	3.00	18.00%	834,193
Roofing	1,544,802	3.00	18.00%	278,064
Superstructure	6,179,207	2.00	6.75%	417,096
Substructure	**3,604,538**	**2.00**	**6.75%**	**243,306**
Foundations	3,604,538	2.00	6.75%	243,306
Patterson Hall				
Gross SF: 135,000 CRV $/SF: 591	**79,841,395**	**1.00**	**2.25%**	**1,796,431**
Equipment and Furnishings	**814,708**	**1.00**	**2.25%**	**18,331**
Equipment and Furnishings	814,708	1.00	2.25%	18,331
Interiors	**16,294,163**	**1.00**	**2.25%**	**366,619**
Interior Construction	7,332,373	1.00	2.25%	164,978

	CRV	FCA Score	CI	Backlog
Interior Finishes	7,332,373	1.00	2.25%	164,978
Staircases	1,629,416	1.00	2.25%	36,662
Services	**37,476,573**	**1.00**	**2.25%**	**843,223**
Electrical	12,220,622	1.00	2.25%	274,964
Fire Protection	1,629,416	1.00	2.25%	36,662
HVAC	15,479,454	1.00	2.25%	348,288
Plumbing	7,332,373	1.00	2.25%	164,978
Vertical Transportation	814,708	1.00	2.25%	18,331
Shell	**19,552,995**	**1.00**	**2.25%**	**439,942**
Exterior Closure	7,332,373	1.00	2.25%	164,978
Roofing	2,444,124	1.00	2.25%	54,993
Superstructure	9,776,497	1.00	2.25%	219,971
Substructure	**5,702,957**	**1.00**	**2.25%**	**128,317**
Foundations	5,702,957	1.00	2.25%	128,317
Pavilion				
Gross SF: 119,658 CRV $/SF: 403	**48,234,700**	**2.88**	**17.95%**	**8,657,714**
Equipment and Furnishings	**363,448**	**3.00**	**18.00%**	**65,421**
Equipment and Furnishings	363,448	3.00	18.00%	65,421
Interiors	**10,384,220**	**2.63**	**13.95%**	**1,448,599**
Interior Construction	4,672,899	2.67	11.50%	537,383
Interior Finishes	4,672,899	3.00	18.00%	841,122
Staircases	1,038,422	2.00	6.75%	70,093
Services	**21,391,492**	**3.33**	**25.86%**	**5,531,544**
Electrical	7,268,954	2.33	14.18%	1,030,374
Fire Protection	830,738	2.50	16.59%	137,851
HVAC	9,345,798	3.83	32.88%	3,072,431
Plumbing	3,946,004	3.75	32.71%	1,290,888
Shell	**12,461,063**	**2.50**	**10.97%**	**1,366,823**
Exterior Closure	4,672,899	2.67	14.75%	689,253
Roofing	1,557,633	2.67	16.50%	257,009
Superstructure	6,230,532	2.00	6.75%	420,561
Substructure	**3,634,477**	**2.00**	**6.75%**	**245,327**
Foundations	3,634,477	2.00	6.75%	245,327
PE Classroom Building				
Gross SF: 31,848 CRV $/SF: 551	**17,547,741**	**2.26**	**9.18%**	**1,610,865**
Equipment and Furnishings	**192,199**	**2.00**	**6.98%**	**13,406**
Equipment and Furnishings	192,199	2.00	6.98%	13,406
Interiors	**3,843,974**	**2.38**	**10.07%**	**387,040**
Interior Construction	1,729,788	3.00	14.13%	244,333
Interior Finishes	1,729,788	2.00	6.75%	116,761
Staircases	384,397	2.00	6.75%	25,947
Services	**7,553,409**	**2.14**	**9.21%**	**695,807**
Electrical	2,690,782	2.33	11.60%	312,227
Fire Protection	307,518	2.00	6.75%	20,757
HVAC	3,094,399	1.40	3.23%	99,895
Plumbing	1,460,710	3.00	18.00%	262,928
Shell	**4,612,769**	**2.50**	**9.19%**	**423,798**
Exterior Closure	1,729,788	2.67	10.75%	185,952
Roofing	576,596	2.67	14.25%	82,165
Superstructure	2,306,384	2.00	6.75%	155,681
Substructure	**1,345,391**	**2.00**	**6.75%**	**90,814**
Foundations	1,345,391	2.00	6.75%	90,814
Plant Utilities				
Gross SF: 7,724 CRV $/SF: 335	**2,584,923**	**4.11**	**42.03%**	**1,086,388**
Equipment and Furnishings	**8,475**	**4.00**	**33.75%**	**2,860**
Equipment and Furnishings	8,475	4.00	33.75%	2,860

	CRV	FCA Score	CI	Backlog
Interiors	**522,635**	**4.57**	**50.11%**	**261,868**
Interior Construction	211,879	4.50	43.95%	93,114
Interior Finishes	254,255	4.67	57.76%	146,867
Staircases	56,501	4.50	38.74%	21,887
Services	**1,178,047**	**4.33**	**46.60%**	**548,971**
Electrical	423,758	3.75	28.19%	119,436
Fire Protection	56,501	5.00	67.00%	37,856
HVAC	483,084	5.00	67.00%	323,666
Plumbing	214,704	3.25	31.68%	68,013
Shell	**678,013**	**3.25**	**30.38%**	**205,946**
Exterior Closure	254,255	4.00	33.75%	85,811
Roofing	84,752	2.00	6.75%	5,721
Superstructure	339,006	4.00	33.75%	114,415
Substructure	**197,754**	**4.00**	**33.75%**	**66,742**
Foundations	197,754	4.00	33.75%	66,742
Practice Field Toilets				
Gross SF: 773 CRV $/SF: 399	**308,396**	**1.07**	**2.84%**	**8,760**
Interiors	**68,702**	**1.00**	**2.25%**	**1,546**
Interior Construction	34,351	1.00	2.25%	773
Interior Finishes	34,351	1.00	2.25%	773
Services	**121,374**	**1.18**	**3.75%**	**4,552**
Electrical	40,458	2.00	6.75%	2,731
HVAC	53,817	1.00	2.25%	1,211
Plumbing	27,099	1.00	2.25%	610
Shell	**91,603**	**1.00**	**2.25%**	**2,061**
Exterior Closure	34,351	1.00	2.25%	773
Roofing	11,450	1.00	2.25%	258
Superstructure	45,801	1.00	2.25%	1,031
Substructure	**26,717**	**1.00**	**2.25%**	**601**
Foundations	26,717	1.00	2.25%	601
President's Garage				
Gross SF: 681 CRV $/SF: 186	**126,811**	**2.73**	**15.65%**	**19,847**
Interiors	**32,516**	**2.75**	**13.82%**	**4,494**
Interior Construction	17,419	2.50	10.20%	1,777
Interior Finishes	15,097	3.00	18.00%	2,717
Services	**24,619**	**3.00**	**18.00%**	**4,431**
Electrical	24,619	3.00	18.00%	4,431
Shell	**53,419**	**2.71**	**17.02%**	**9,093**
Exterior Closure	20,903	3.00	18.00%	3,763
Roofing	4,645	2.00	6.75%	314
Superstructure	27,871	3.00	18.00%	5,017
Substructure	**16,258**	**2.50**	**11.25%**	**1,829**
Foundations	16,258	2.50	11.25%	1,829
President's House				
Gross SF: 4,545 CRV $/SF: 303	**1,376,464**	**2.50**	**14.44%**	**198,797**
Interiors	**286,763**	**2.00**	**6.75%**	**19,357**
Interior Construction	116,255	2.00	6.75%	7,847
Interior Finishes	139,507	2.00	6.75%	9,417
Staircases	31,001	2.00	6.75%	2,093
Services	**624,679**	**2.57**	**15.52%**	**96,922**
Electrical	217,010	3.00	21.23%	46,072
Fire Protection	3,100	4.00	33.75%	1,046
HVAC	294,514	2.14	11.78%	34,702
Plumbing	110,055	2.67	13.72%	15,102
Shell	**356,517**	**2.57**	**15.75%**	**56,151**
Exterior Closure	139,506	2.67	14.75%	20,577

			CRV	FCA Score	CI	Backlog
Roofing			31,001	2.00	6.75%	2,093
Superstructure			186,009	3.00	18.00%	33,482
Substructure			**108,505**	**3.50**	**24.30%**	**26,367**
Foundations			108,505	3.50	24.30%	26,367
Radio-TV Building						
Gross SF:	**15,983**	**CRV $/SF:** **501**	**8,015,444**	**2.82**	**14.31%**	**1,147,168**
Equipment and Furnishings			**28,937**	**3.00**	**18.00%**	**5,209**
Equipment and Furnishings			28,937	3.00	18.00%	5,209
Interiors			**1,929,108**	**2.50**	**10.46%**	**201,833**
Interior Construction			868,099	2.67	11.50%	99,831
Interior Finishes			868,099	2.33	9.88%	85,725
Staircases			192,911	2.50	8.44%	16,277
Services			**3,067,282**	**3.00**	**17.45%**	**535,159**
Electrical			1,350,376	2.67	13.74%	185,556
Fire Protection			154,329	3.50	59.47%	91,777
HVAC			733,061	3.25	19.24%	141,066
Plumbing			733,061	2.50	11.49%	84,206
Vertical Transportation			96,455	4.00	33.75%	32,554
Shell			**2,314,930**	**2.75**	**12.38%**	**286,473**
Exterior Closure			868,099	3.00	18.00%	156,258
Roofing			289,366	3.00	18.00%	52,086
Superstructure			1,157,465	2.00	6.75%	78,129
Substructure			**675,188**	**3.00**	**17.55%**	**118,495**
Foundations			675,188	3.00	17.55%	118,495
Red Barn						
Gross SF:	**14,589**	**CRV $/SF:** **282**	**4,115,600**	**2.43**	**13.07%**	**537,981**
Equipment and Furnishings			**14,407**	**1.00**	**2.25%**	**324**
Equipment and Furnishings			14,407	1.00	2.25%	324
Interiors			**864,420**	**2.33**	**10.81%**	**93,465**
Interior Construction			432,210	2.00	6.75%	29,174
Interior Finishes			432,210	2.67	14.88%	64,291
Services			**1,748,050**	**2.54**	**12.00%**	**209,718**
Electrical			509,047	2.00	6.75%	34,361
Fire Protection			76,837	3.50	59.47%	45,694
HVAC			821,199	2.00	6.75%	55,431
Plumbing			340,966	3.33	21.77%	74,232
Shell			**1,152,560**	**2.38**	**15.09%**	**173,965**
Exterior Closure			432,210	2.33	14.00%	60,509
Roofing			144,070	2.00	6.75%	9,725
Superstructure			576,280	3.00	18.00%	103,730
Substructure			**336,163**	**3.00**	**18.00%**	**60,509**
Foundations			336,163	3.00	18.00%	60,509
Rozell Plant						
Gross SF:	**56,561**	**CRV $/SF:** **344**	**19,445,954**	**2.33**	**10.94%**	**2,128,091**
Equipment and Furnishings			**62,062**	**2.00**	**6.75%**	**4,189**
Equipment and Furnishings			62,062	2.00	6.75%	4,189
Interiors			**4,137,437**	**2.38**	**10.18%**	**421,243**
Interior Construction			1,861,847	2.67	11.25%	209,458
Interior Finishes			1,861,847	2.33	9.88%	183,857
Staircases			413,744	2.00	6.75%	27,928
Services			**8,419,685**	**2.60**	**14.75%**	**1,241,852**
Electrical			2,896,206	2.33	14.18%	410,537
Fire Protection			330,995	2.00	6.75%	22,342
HVAC			3,330,637	3.00	18.00%	599,515
Plumbing			1,861,847	2.60	11.25%	209,458
Shell			**4,964,924**	**2.00**	**6.75%**	**335,132**

	CRV	FCA Score	CI	Backlog
Exterior Closure	1,861,847	2.00	6.75%	125,675
Roofing	620,616	2.00	6.75%	41,892
Superstructure	2,482,462	2.00	6.75%	167,566
Special Construction	**413,744**	**2.00**	**6.75%**	**27,928**
Special Construction	413,744	2.00	6.75%	27,928
Substructure	**1,448,103**	**2.00**	**6.75%**	**97,747**
Foundations	1,448,103	2.00	6.75%	97,747
Science Building				
Gross SF: 148,149 CRV $/SF: 563	**83,445,664**	**3.27**	**20.61%**	**17,201,728**
Equipment and Furnishings	**851,486**	**3.00**	**18.00%**	**153,268**
Equipment and Furnishings	851,486	3.00	18.00%	153,268
Interiors	**17,029,728**	**2.88**	**18.61%**	**3,168,807**
Interior Construction	7,663,377	3.00	18.00%	1,379,408
Interior Finishes	7,663,377	3.33	21.85%	1,674,448
Staircases	1,702,973	2.00	6.75%	114,951
Services	**39,168,373**	**3.52**	**24.73%**	**9,687,786**
Electrical	12,772,296	3.25	19.05%	2,433,122
Fire Protection	1,702,973	3.25	19.58%	333,357
HVAC	16,178,241	3.86	29.91%	4,838,784
Plumbing	7,663,378	3.40	23.43%	1,795,146
Vertical Transportation	851,486	4.00	33.75%	287,377
Shell	**20,435,673**	**3.38**	**18.54%**	**3,789,540**
Exterior Closure	7,663,377	3.67	29.20%	2,237,706
Roofing	2,554,459	4.00	33.75%	862,130
Superstructure	10,217,836	2.00	6.75%	689,704
Substructure	**5,960,405**	**2.00**	**6.75%**	**402,327**
Foundations	5,960,405	2.00	6.75%	402,327
Senior Hall				
Gross SF: 52,619 CRV $/SF: 530	**27,914,077**	**2.00**	**7.96%**	**2,221,710**
Equipment and Furnishings	**302,428**	**1.50**	**5.40%**	**16,331**
Equipment and Furnishings	302,428	1.50	5.40%	16,331
Interiors	**6,048,554**	**2.00**	**6.75%**	**408,277**
Interior Construction	2,721,849	2.00	6.75%	183,725
Interior Finishes	2,721,849	2.00	6.75%	183,725
Staircases	604,855	2.00	6.75%	40,828
Services	**12,187,836**	**1.93**	**6.37%**	**776,408**
Electrical	4,233,988	1.67	5.66%	239,523
Fire Protection	483,884	2.00	6.75%	32,662
HVAC	4,869,086	2.00	6.75%	328,663
Plumbing	2,298,451	2.00	6.75%	155,145
Vertical Transportation	302,428	2.00	6.75%	20,414
Shell	**7,258,265**	**2.13**	**10.13%**	**734,899**
Exterior Closure	2,721,849	2.00	6.75%	183,725
Roofing	907,283	2.00	6.75%	61,242
Superstructure	3,629,132	2.50	13.50%	489,933
Substructure	**2,116,994**	**2.50**	**13.50%**	**285,794**
Foundations	2,116,994	2.50	13.50%	285,794
Showalter Hall				
Gross SF: 86,483 CRV $/SF: 401	**34,649,673**	**3.14**	**20.92%**	**7,249,692**
Equipment and Furnishings	**406,686**	**2.50**	**10.13%**	**41,177**
Equipment and Furnishings	406,686	2.50	10.13%	41,177
Interiors	**8,133,726**	**3.38**	**21.15%**	**1,720,283**
Interior Construction	3,660,177	3.33	20.63%	754,911
Interior Finishes	3,660,177	3.33	21.85%	799,749
Staircases	813,373	3.50	20.36%	165,623
Services	**13,501,985**	**3.59**	**28.33%**	**3,824,681**

			CRV	FCA Score	CI	Backlog
Electrical			6,100,295	3.00	22.41%	1,367,076
Fire Protection			813,373	3.00	12.15%	98,825
HVAC			3,090,816	4.00	33.75%	1,043,150
Plumbing			3,090,816	4.00	33.75%	1,043,150
Vertical Transportation			406,686	5.00	67.00%	272,480
Shell			**9,760,471**	**2.63**	**16.39%**	**1,599,497**
Exterior Closure			3,660,177	2.00	13.70%	501,444
Roofing			1,220,059	3.00	18.00%	219,611
Superstructure			4,880,236	3.00	18.00%	878,442
Substructure			**2,846,804**	**1.00**	**2.25%**	**64,053**
Foundations			2,846,804	1.00	2.25%	64,053
Solid Waste Transfer Station						
Gross SF:	**1,085**	**CRV $/SF:** **231**	**250,723**	**2.00**	**6.75%**	**16,924**
Interiors			**31,430**	**2.00**	**6.75%**	**2,122**
Interior Construction			8,215	2.00	6.75%	554
Interior Finishes			23,215	2.00	6.75%	1,567
Services			**110,004**	**2.00**	**6.75%**	**7,425**
Electrical			37,858	2.00	6.75%	2,555
HVAC			46,787	2.00	6.75%	3,158
Plumbing			25,358	2.00	6.75%	1,712
Shell			**84,289**	**2.00**	**6.75%**	**5,689**
Exterior Closure			32,144	2.00	6.75%	2,170
Roofing			9,286	2.00	6.75%	627
Superstructure			42,859	2.00	6.75%	2,893
Substructure			**25,001**	**2.00**	**6.75%**	**1,688**
Foundations			25,001	2.00	6.75%	1,688
Substation						
Gross SF:	**2,916**	**CRV $/SF:** **242**	**704,974**	**1.76**	**7.26%**	**51,161**
Interiors			**93,854**	**1.67**	**5.57%**	**5,231**
Interior Construction			24,530	1.00	2.25%	552
Interior Finishes			69,324	2.00	6.75%	4,679
Services			**280,497**	**2.75**	**13.72%**	**38,491**
Electrical			149,314	2.00	6.75%	10,079
Fire Protection			2,133	2.00	6.75%	144
HVAC			129,050	3.50	21.90%	28,268
Shell			**255,966**	**1.00**	**2.25%**	**5,759**
Exterior Closure			95,987	1.00	2.25%	2,160
Roofing			31,996	1.00	2.25%	720
Superstructure			127,983	1.00	2.25%	2,880
Substructure			**74,657**	**1.00**	**2.25%**	**1,680**
Foundations			74,657	1.00	2.25%	1,680
Surbeck Services						
Gross SF:	**41,792**	**CRV $/SF:** **359**	**15,006,464**	**2.89**	**14.47%**	**2,172,126**
Equipment and Furnishings			**48,149**	**3.00**	**18.00%**	**8,667**
Equipment and Furnishings			48,149	3.00	18.00%	8,667
Interiors			**2,888,945**	**2.67**	**12.88%**	**371,952**
Interior Construction			1,444,472	2.67	11.50%	166,114
Interior Finishes			1,444,472	2.67	14.25%	205,837
Services			**6,772,971**	**2.94**	**15.72%**	**1,064,937**
Electrical			2,246,957	2.33	14.18%	318,506
Fire Protection			256,795	3.00	10.13%	26,001
HVAC			3,049,442	3.14	16.43%	500,871
Plumbing			1,219,777	3.00	18.00%	219,560
Shell			**3,851,926**	**2.88**	**14.08%**	**542,399**
Exterior Closure			1,444,472	3.33	22.55%	325,729
Roofing			481,491	3.00	18.00%	86,668

	CRV	FCA Score	CI	Backlog
Superstructure	1,925,963	2.00	6.75%	130,003
Special Construction	**320,994**	**4.00**	**33.75%**	**108,335**
Special Construction	320,994	4.00	33.75%	108,335
Substructure	**1,123,479**	**2.00**	**6.75%**	**75,835**
Foundations	1,123,479	2.00	6.75%	75,835
Surplus Sales Building				
Gross SF: 10,880 CRV $/SF: 313	**3,410,311**	**3.17**	**24.11%**	**822,265**
Equipment and Furnishings	**11,938**	**3.00**	**18.00%**	**2,149**
Equipment and Furnishings	11,938	3.00	18.00%	2,149
Interiors	**656,594**	**3.00**	**18.82%**	**123,559**
Interior Construction	298,452	2.50	14.55%	43,425
Interior Finishes	358,142	3.33	22.38%	80,134
Services	**1,547,971**	**3.43**	**28.28%**	**437,799**
Electrical	557,110	3.33	27.19%	151,494
Fire Protection	7,959	2.00	6.75%	537
HVAC	680,471	4.00	34.00%	231,330
Plumbing	302,431	3.00	18.00%	54,438
Shell	**915,253**	**2.86**	**22.79%**	**208,618**
Exterior Closure	358,142	4.00	33.75%	120,873
Roofing	79,587	1.00	2.25%	1,791
Superstructure	477,523	3.00	18.00%	85,954
Substructure	**278,555**	**3.00**	**18.00%**	**50,140**
Foundations	278,555	3.00	18.00%	50,140
Sutton Hall				
Gross SF: 31,984 CRV $/SF: 435	**13,927,481**	**2.54**	**19.00%**	**2,645,958**
Equipment and Furnishings	**45,121**	**2.00**	**6.75%**	**3,046**
Equipment and Furnishings	45,121	2.00	6.75%	3,046
Interiors	**3,008,095**	**2.50**	**20.55%**	**618,088**
Interior Construction	1,353,643	2.33	8.63%	116,752
Interior Finishes	1,353,643	3.00	35.54%	481,032
Staircases	300,810	2.00	6.75%	20,305
Services	**6,211,717**	**2.50**	**12.02%**	**746,760**
Electrical	2,105,667	1.67	5.66%	119,121
Fire Protection	240,648	2.00	6.75%	16,244
HVAC	2,571,921	3.33	19.72%	507,165
Plumbing	1,143,076	2.00	6.75%	77,158
Vertical Transportation	150,405	3.00	18.00%	27,073
Shell	**3,609,714**	**2.50**	**22.89%**	**826,399**
Exterior Closure	1,353,643	2.33	14.00%	189,510
Roofing	451,214	1.67	6.15%	27,750
Superstructure	1,804,857	4.00	33.75%	609,139
Substructure	**1,052,833**	**3.50**	**42.90%**	**451,665**
Foundations	1,052,833	3.50	42.90%	451,665
Turnbull Research Lab				
Gross SF: 4,435 CRV $/SF: 594	**2,634,860**	**2.74**	**15.43%**	**406,679**
Equipment and Furnishings	**9,489**	**3.00**	**18.00%**	**1,708**
Equipment and Furnishings	9,489	3.00	18.00%	1,708
Interiors	**569,357**	**2.00**	**6.75%**	**38,432**
Interior Construction	284,679	2.00	6.75%	19,216
Interior Finishes	284,679	2.00	6.75%	19,216
Services	**1,043,822**	**3.54**	**26.68%**	**278,447**
Electrical	442,834	3.67	29.90%	132,407
HVAC	332,125	3.50	23.25%	77,219
Plumbing	268,863	3.50	25.60%	68,821
Shell	**727,512**	**1.71**	**6.36%**	**46,260**
Exterior Closure	284,679	2.00	6.75%	19,216

	CRV	FCA Score	CI	Backlog
Roofing	63,262	1.00	2.25%	1,423
Superstructure	379,572	2.00	6.75%	25,621
Special Construction	**63,262**	**4.00**	**42.50%**	**26,886**
Special Construction	63,262	4.00	42.50%	26,886
Substructure	**221,417**	**2.00**	**6.75%**	**14,946**
Foundations	221,417	2.00	6.75%	14,946
University Theater				
Gross SF: 36,130 CRV $/SF: 483	**17,456,320**	**2.94**	**15.68%**	**2,737,653**
Equipment and Furnishings	**208,309**	**3.00**	**18.00%**	**37,496**
Equipment and Furnishings	208,309	3.00	18.00%	37,496
Interiors	**4,166,186**	**2.38**	**9.06%**	**377,300**
Interior Construction	1,874,784	2.67	11.50%	215,600
Interior Finishes	1,874,784	2.00	6.75%	126,548
Staircases	416,619	2.50	8.44%	35,152
Services	**6,624,236**	**3.36**	**21.86%**	**1,448,270**
Electrical	2,916,330	3.00	18.00%	524,939
Fire Protection	333,295	3.50	19.97%	66,555
HVAC	1,583,151	3.75	31.68%	501,505
Plumbing	1,583,151	3.00	18.00%	284,967
Vertical Transportation	208,309	4.00	33.75%	70,304
Shell	**4,999,423**	**2.75**	**12.38%**	**618,679**
Exterior Closure	1,874,784	3.00	18.00%	337,461
Roofing	624,928	3.00	18.00%	112,487
Superstructure	2,499,712	2.00	6.75%	168,731
Substructure	**1,458,165**	**3.00**	**17.55%**	**255,908**
Foundations	1,458,165	3.00	17.55%	255,908
Visitor Center				
Gross SF: 2,844 CRV $/SF: 331	**941,375**	**1.15**	**3.89%**	**36,651**
Equipment and Furnishings	**10,402**	**1.50**	**5.40%**	**562**
Equipment and Furnishings	10,402	1.50	5.40%	562
Interiors	**208,039**	**1.00**	**2.25%**	**4,681**
Interior Construction	93,617	1.00	2.25%	2,106
Interior Finishes	93,617	1.00	2.25%	2,106
Staircases	20,804	1.00	2.25%	468
Services	**404,635**	**1.14**	**5.69%**	**23,030**
Electrical	145,627	1.00	2.25%	3,277
Fire Protection	2,080	1.00	2.25%	47
HVAC	177,873	1.33	10.08%	17,928
Plumbing	79,055	1.00	2.25%	1,779
Shell	**245,486**	**1.29**	**2.75%**	**6,740**
Exterior Closure	93,617	1.00	2.25%	2,106
Roofing	27,045	2.00	6.75%	1,826
Superstructure	124,823	1.00	2.25%	2,809
Substructure	**72,814**	**1.00**	**2.25%**	**1,638**
Foundations	72,814	1.00	2.25%	1,638
Williamson Hall				
Gross SF: 31,599 CRV $/SF: 533	**16,835,734**	**3.22**	**24.99%**	**4,207,571**
Equipment and Furnishings	**181,615**	**3.00**	**18.00%**	**32,691**
Equipment and Furnishings	181,615	3.00	18.00%	32,691
Interiors	**3,632,305**	**2.88**	**15.47%**	**561,872**
Interior Construction	1,634,537	3.00	17.75%	290,130
Interior Finishes	1,634,537	2.67	12.63%	206,360
Staircases	363,231	3.00	18.00%	65,381
Services	**7,391,741**	**3.88**	**35.63%**	**2,633,921**
Electrical	2,542,614	3.33	23.96%	609,274
Fire Protection	363,231	5.00	67.00%	243,364

	CRV	FCA Score	CI	Backlog
HVAC	2,924,006	4.00	50.33%	1,471,538
Plumbing	1,380,276	3.00	18.00%	248,450
Vertical Transportation	181,615	4.00	33.75%	61,295
Shell	**4,358,766**	**2.38**	**19.18%**	**836,066**
Exterior Closure	1,634,537	3.00	18.00%	294,217
Roofing	544,846	1.00	2.25%	12,259
Superstructure	2,179,383	3.50	24.30%	529,590
Substructure	**1,271,307**	**2.50**	**11.25%**	**143,022**
Foundations	1,271,307	2.50	11.25%	143,022
Woodward Field Concessions				
Gross SF: 2,342 CRV $/SF: 304	**712,736**	**2.71**	**17.36%**	**123,714**
Interiors	**145,008**	**2.80**	**15.95%**	**23,135**
Interior Construction	65,913	3.00	18.00%	11,864
Interior Finishes	79,095	2.67	14.25%	11,271
Services	**326,927**	**2.91**	**19.35%**	**63,245**
Electrical	123,037	3.67	29.90%	36,788
HVAC	141,493	1.80	3.82%	5,398
Plumbing	62,397	4.00	33.75%	21,059
Shell	**179,282**	**2.33**	**16.96%**	**30,412**
Exterior Closure	56,245	3.50	32.27%	18,152
Roofing	17,577	1.00	2.25%	395
Superstructure	105,460	2.50	11.25%	11,864
Substructure	**61,518**	**2.50**	**11.25%**	**6,921**
Foundations	61,518	2.50	11.25%	6,921
Woodward Field Press Box				
Gross SF: 8,772 CRV $/SF: 324	**2,840,731**	**1.94**	**8.67%**	**246,334**
Equipment and Furnishings	**9,875**	**1.00**	**2.25%**	**222**
Equipment and Furnishings	9,875	1.00	2.25%	222
Interiors	**658,339**	**1.63**	**4.50%**	**29,625**
Interior Construction	296,252	1.33	3.00%	8,888
Interior Finishes	296,252	1.67	5.50%	16,294
Staircases	65,834	2.00	6.75%	4,444
Services	**1,152,093**	**2.43**	**14.38%**	**165,679**
Electrical	286,377	1.50	4.99%	14,294
Fire Protection	52,667	2.50	8.16%	4,296
HVAC	562,879	3.00	23.13%	130,203
Plumbing	250,169	2.00	6.75%	16,886
Shell	**790,006**	**1.63**	**5.25%**	**41,475**
Exterior Closure	296,252	1.33	5.15%	15,257
Roofing	98,751	2.00	6.75%	6,666
Superstructure	395,003	1.50	4.95%	19,553
Substructure	**230,419**	**1.50**	**4.05%**	**9,332**
Foundations	230,419	1.50	4.05%	9,332
Woodward Field Toilets				
Gross SF: 3,540 CRV $/SF: 322	**1,140,950**	**1.92**	**6.03%**	**68,855**
Interiors	**230,143**	**1.80**	**6.07%**	**13,965**
Interior Construction	104,610	2.00	6.75%	7,061
Interior Finishes	125,532	1.67	5.50%	6,904
Services	**478,418**	**1.91**	**5.37%**	**25,703**
Electrical	147,849	2.00	6.75%	9,980
HVAC	224,563	1.80	3.82%	8,568
Plumbing	106,005	2.00	6.75%	7,155
Shell	**334,753**	**2.00**	**6.75%**	**22,596**
Exterior Closure	125,532	2.00	6.75%	8,473
Roofing	41,844	2.00	6.75%	2,824
Superstructure	167,376	2.00	6.75%	11,298

	CRV	FCA Score	CI	Backlog
Substructure	**97,636**	**2.00**	**6.75%**	**6,590**
Foundations	97,636	2.00	6.75%	6,590

Deferred Maintenance Backlog Reduction Plan 2023-2033
Preservation Project List Detail

Score	System Significance Rank	Facility Name	Uniformat Category Level 1	Uniformat System Level 2	Uniformat Component Level3	Estimated Project Cost	Project Cost Running Total	Fiscal Year Complete	Facility ID
5	1	Pearce Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$471,147.57	$471,147.57	2023	1170
5	1	Indian Education Center	Services	Fire Protection	Fire Protection Sprinkler Systems	$28,460.47	499,608.0377	2023	1193
5	1	Isle Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$289,980.58	789,588.6147	2023	1178
5	1	Plant Utilities	Services	Fire Protection	Fire Protection Specialties	$5,650.11	795,238.7209	2023	1106
5	1	Plant Utilities	Services	Fire Protection	Fire Protection Sprinkler Systems	$39,550.74	834,789.4636	2023	1106
5	1	Fifth Street Hall	Services	Fire Protection	Fire Protection Specialties	$5,375.83	840,165.2953	2023	1197
5	1	Cheney Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$249,586.34	1,089,751.6369	2023	1163
5	1	Radio-TV Building	Services	Fire Protection	Fire Protection Sprinkler Systems	$135,037.57	1,224,789.2093	2023	1148
5	1	Plant Utilities	Services	Fire Protection	Special Fire Protection Systems	$5,650.11	1,230,439.3155	2023	1106
5	1	Williamson Hall	Services	Fire Protection	Fire Protection Specialties	$36,323.05	1,266,762.3673	2023	1133
5	1	Music Building	Services	Fire Protection	Fire Protection Specialties	$54,736.89	1,321,499.2602	2023	1139
5	1	One Room School House	Services	Fire Protection	Fire Protection Specialties	$1,175.25	1,322,674.5090	2023	1127
5	1	Martin Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$465,023.34	1,787,697.8455	2023	1130
5	1	Tawanka Commons	Services	Fire Protection	Stand-Pipe and Hose Systems	$63,989.07	1,851,686.9198	2023	1121
5	1	Williamson Hall	Services	Fire Protection	Special Fire Protection Systems	$36,323.05	1,888,009.9716	2023	1133
5	1	Williamson Hall	Services	Fire Protection	Stand-Pipe and Hose Systems	$36,323.05	1,924,333.0234	2023	1133
5	1	Art Building	Services	Fire Protection	Fire Protection Sprinkler Systems	$299,874.15	2,224,207.1746	2023	1145
5	1	Dressler Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$389,533.86	2,613,741.0354	2023	1171
5	1	Plant Utilities	Services	Fire Protection	Stand-Pipe and Hose Systems	$5,650.11	2,619,391.1416	2024	1106
5	1	Red Barn	Services	Fire Protection	Fire Protection Sprinkler Systems	$67,232.68	2,686,623.8199	2024	1205
5	1	Cadet Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$86,068.18	2,772,692.0018	2024	1157
5	1	Williamson Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$254,261.36	3,026,953.3600	2024	1133
5	1	Tawanka Commons	Services	Fire Protection	Fire Protection Sprinkler Systems	$447,923.51	3,474,876.8729	2024	1121
5	2	Showalter Hall	Services	Vertical Transportation	Elevators and Lifts	$406,686.29	3,881,563.1662	2024	1103
5	2	Dressler Hall	Services	Vertical Transportation	Elevators and Lifts	$278,238.46	4,159,801.6234	2024	1171
5	2	Fifth Street Hall	Services	Vertical Transportation	Elevators and Lifts	$26,879.16	4,186,680.7800	2024	1197
5	3	Fifth Street Hall	Services	Electrical	Electrical Service and Distribution	$142,459.53	4,329,140.3113	2024	1197
5	3	Woodward Field Concessions	Services	Electrical	Communication and Security Systems	$29,880.41	4,359,020.7195	2024	1370
5	3	Anna Maria Apartments	Services	Electrical	Electrical Service and Distribution	$2,749.31	4,361,770.0258	2024	1215
5	3	Martin Hall	Services	Electrical	Special Electrical Systems	$332,159.51	4,693,929.5342	2024	1130
5	3	Morrison Hall	Services	Electrical	Communication and Security Systems	$1,306,563.46	6,000,492.9962	2025	1463
5	3	Streeter Hall	Services	Electrical	Communication and Security Systems	$989,720.82	6,990,213.8142	2025	1465
5	3	Fifth Street Hall	Services	Electrical	Lighting and Branch Wiring	$142,459.53	7,132,673.3455	2025	1197
5	3	Dryden Hall	Services	Electrical	Communication and Security Systems	$674,692.32	7,807,365.6667	2025	1480
5	3	Turnbull Research Lab	Services	Electrical	Communication and Security Systems	$107,545.31	7,914,910.9753	2026	1710
5	4	Dressler Hall	Services	HVAC	Terminal and Package Units	$306,062.31	8,220,973.2834	2026	1171
5	4	Fifth Street Hall	Services	HVAC	Cooling Generating Systems	$26,879.16	8,247,852.4400	2026	1197
5	4	Dressler Hall	Services	HVAC	Controls and Instrumentation	$166,943.08	8,414,795.5195	2026	1171
5	4	Dressler Hall	Services	HVAC	Distribution Systems	$1,363,368.44	9,778,163.9547	2026	1171
5	4	Dressler Hall	Services	HVAC	Special HVAC Systems and Equipment	$528,653.06	10,306,817.0182	2027	1171
5	4	Cadet Hall	Services	HVAC	Controls and Instrumentation	$36,886.36	10,343,703.3810	2027	1157
5	4	Louise Anderson Hall	Services	HVAC	Distribution Systems	$1,274,282.21	11,617,985.5908	2027	1475
5	4	Surplus Sales Building	Services	HVAC	Controls and Instrumentation	$23,876.16	11,641,861.7507	2027	1610
5	4	Science Building	Services	HVAC	Controls and Instrumentation	$510,891.82	12,152,753.5752	2027	1166
5	4	Dryden Hall	Services	HVAC	Special HVAC Systems and Equipment	$377,033.91	12,529,787.4868	2027	1480
5	4	Fifth Street Hall	Services	HVAC	Distribution Systems	$131,707.87	12,661,495.3535	2028	1197
5	4	Louise Anderson Hall	Services	HVAC	Controls and Instrumentation	$156,034.56	12,817,529.9152	2028	1475
5	4	Governor Martin House	Services	HVAC	Cooling Generating Systems	$17,442.98	12,834,972.8978	2028	1196
5	4	Williamson Hall	Services	HVAC	Heat Generating Systems	$1,543,729.64	14,378,702.5409	2028	1133
5	4	Louise Anderson Hall	Services	HVAC	Terminal and Package Units	$286,063.36	14,664,765.9000	2028	1475
5	4	Plant Utilities	Services	HVAC	Terminal and Package Units	$31,075.58	14,695,841.4824	2028	1106
5	4	Townhouse Apartments	Services	HVAC	Cooling Generating Systems	$222,931.08	14,918,772.5629	2028	1210
5	4	Plant Utilities	Services	HVAC	Cooling Generating Systems	$28,250.53	14,947,023.0919	2028	1106
5	4	Fifth Street Hall	Services	HVAC	Terminal and Package Units	$29,567.07	14,976,590.1646	2028	1197
5	4	Streeter Hall	Services	HVAC	Controls and Instrumentation	$174,656.61	15,151,246.7716	2029	1465
5	4	Plant Utilities	Services	HVAC	Controls and Instrumentation	$16,950.32	15,168,197.0895	2029	1106
5	4	Sutton Hall	Services	HVAC	Controls and Instrumentation	$90,242.86	15,258,439.9452	2029	1112
5	4	Fifth Street Hall	Services	HVAC	Special HVAC Systems and Equipment	$51,070.40	15,309,510.3422	2029	1197
5	4	Fifth Street Hall	Services	HVAC	Controls and Instrumentation	$16,127.49	15,325,637.8366	2029	1197
5	4	Pearce Hall	Services	HVAC	Terminal and Package Units	$370,187.36	15,695,825.1970	2029	1170
5	4	Pearce Hall	Services	HVAC	Distribution Systems	$1,649,016.39	17,344,841.5866	2029	1170
5	4	Fifth Street Hall	Services	HVAC	Energy Supply	$26,879.16	17,371,720.7432	2029	1197
5	4	Plant Utilities	Services	HVAC	Heat Generating Systems	$240,129.50	17,611,850.2477	2030	1106
5	4	Pearce Hall	Services	HVAC	Controls and Instrumentation	$201,920.38	17,813,770.6290	2030	1170
5	4	Plant Utilities	Services	HVAC	Distribution Systems	$138,427.59	17,952,198.2206	2030	1106
5	4	Fifth Street Hall	Services	HVAC	Heat Generating Systems	$228,472.84	18,180,671.0589	2030	1197
5	4	Plant Utilities	Services	HVAC	Energy Supply	$28,250.53	18,208,921.5879	2030	1106
5	5	Streeter Hall	Services	Plumbing	Domestic Water Distribution	$785,954.74	18,994,876.3328	2030	1465
5	5	Streeter Hall	Services	Plumbing	Sanitary Waste	$494,860.41	19,489,736.7418	2030	1465
5	5	Fifth Street Hall	Services	Plumbing	Domestic Water Distribution	$72,573.73	19,562,310.4680	2030	1197
5	5	Dressler Hall	Services	Plumbing	Domestic Water Distribution	$751,243.87	20,313,554.3388	2031	1171
5	5	Dressler Hall	Services	Plumbing	Plumbing Fixtures	$751,243.87	21,064,798.2096	2031	1171
5	5	Streeter Hall	Services	Plumbing	Rain Water Drainage	$145,547.17	21,210,345.3776	2031	1465
5	5	Dressler Hall	Services	Plumbing	Sanitary Waste	$473,005.41	21,683,350.7912	2031	1171
5	5	Fifth Street Hall	Services	Plumbing	Plumbing Fixtures	$72,573.73	21,755,924.5174	2031	1197
5	5	Fifth Street Hall	Services	Plumbing	Rain Water Drainage	$13,439.58	21,769,364.0957	2031	1197
5	5	Fifth Street Hall	Services	Plumbing	Sanitary Waste	$45,694.57	21,815,058.6654	2031	1197
5	5	Dressler Hall	Services	Plumbing	Rain Water Drainage	$139,119.23	21,954,177.8940	2031	1171
5	5	Pearce Hall	Services	Plumbing	Rain Water Drainage	$168,266.98	22,122,444.8732	2031	1170
5	5	Morrison Hall	Services	Plumbing	Rain Water Drainage	$192,141.67	22,314,586.5440	2031	1463
5	5	Morrison Hall	Services	Plumbing	Sanitary Waste	$653,281.73	22,967,868.2750	2032	1463
5	5	Art Building	Services	Plumbing	Plumbing Fixtures	$578,328.72	23,546,196.9924	2032	1145

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5	5	Dryden Hall	Services	Plumbing	Rain Water Drainage	$99,219.45	23,645,416.4438	2032	1480
5	5	Pearce Hall	Services	Plumbing	Plumbing Fixtures	$908,641.73	24,554,058.1752	2032	1170
5	5	Morrison Hall	Services	Plumbing	Plumbing Fixtures	$1,037,565.07	25,591,623.2479	2032	1463
5	5	Pearce Hall	Services	Plumbing	Domestic Water Distribution	$908,641.73	26,500,264.9793	2033	1170
5	5	Dryden Hall	Services	Plumbing	Domestic Water Distribution	$535,785.06	27,036,050.0427	2033	1480
5	5	Streeter Hall	Services	Plumbing	Plumbing Fixtures	$785,954.74	27,822,004.7876	2033	1465
5	5	Pearce Hall	Services	Plumbing	Sanitary Waste	$572,107.77	28,394,112.5606		1170
5	5	Morrison Hall	Services	Plumbing	Domestic Water Distribution	$1,037,565.07	29,431,677.6333		1463
5	6	Fifth Street Hall	Shell	Roofing	Roof Coverings	$43,006.65	29,474,684.2868		1197
5	7	Streeter Hall	Shell	Exterior Closure	Exterior Walls	$1,688,347.14	31,163,031.4242		1465
5	7	Morrison Hall	Shell	Exterior Closure	Exterior Walls	$2,228,843.37	33,391,874.7917		1463
5	7	Childcare Facillty	Shell	Exterior Closure	Exterior Doors	$32,621.24	33,424,496.0341		1154
5	7	Fifth Street Hall	Shell	Exterior Closure	Exterior Walls	$155,899.11	33,580,395.1412		1197
5	7	Fifth Street Hall	Shell	Exterior Closure	Exterior Doors	$16,127.49	33,596,522.6356		1197
5	7	Isle Hall	Shell	Exterior Closure	Exterior Windows	$538,535.35	34,135,057.9873		1178
5	9	Plant Utilities	Interiors	Staircases	Stair Finishes	$8,475.16	34,143,533.1463		1106
5	9	Louise Anderson Hall	Interiors	Staircases	Stair Finishes	$78,017.28	34,221,550.4272		1475
5	10	Dressler Hall	Interiors	Interior Construction	Specialties	$417,357.69	34,638,908.1130		1171
5	10	Pearce Hall	Interiors	Interior Construction	Specialties	$504,800.94	35,143,709.0505		1170
5	10	Plant Utilities	Interiors	Interior Construction	Interior Doors	$64,976.22	35,208,685.2688		1106
5	11	Louise Anderson Hall	Interiors	Interior Finishes	Wall Finishes	$650,144.01	35,858,829.2801		1475
5	11	Streeter Hall	Interiors	Interior Finishes	Wall Finishes	$727,735.87	36,586,565.1470		1465
5	11	Plant Utilities	Interiors	Interior Finishes	Ceiling Finishes	$62,151.16	36,648,716.3119		1106
5	11	Dryden Hall	Interiors	Interior Finishes	Wall Finishes	$496,097.28	37,144,813.5873		1480
5	11	Isle Hall	Interiors	Interior Finishes	Floor Finishes	$890,654.63	38,035,468.2193		1178
5	11	Sutton Hall	Interiors	Interior Finishes	Floor Finishes	$646,740.48	38,682,208.7011		1112
5	11	Plant Utilities	Interiors	Interior Finishes	Floor Finishes	$121,477.28	38,803,685.9827		1106
5	12	Greenhouse Boneyard	Special	Special Construction	Integrated Constr. & Special Constr.	$2,842.99	38,806,528.9772		1425
5	12	Fifth Street Hall	Equipment	Equipment and Furnishings	Fixed Furnishings and Equipment	$18,815.41	38,825,344.3878		1197
5	12	Turnbull Research Lab	Special	Special Construction	Special Controls and Instrumentation	$31,630.97	38,856,975.3585		1710
5	12	Greenhouse Boneyard	Special	Special Construction	Special Controls and Instrumentation	$2,842.99	38,859,818.3530		1425
5	12	Anna Maria Apartments	Equipment	Equipment and Furnishings	Moveable Furnishings (Capital Funded	$155.62	38,859,973.9741		1215
5	12	Anna Maria Apartments	Equipment	Equipment and Furnishings	Fixed Furnishings and Equipment	$363.12	38,860,337.0900		1215
5	13	Indian Education Center	Substructure	Foundations	Standard Foundations	$85,381.41	38,945,718.4993		1193
5	13	Fifth Street Hall	Substructure	Foundations	Standard Foundations	$112,892.46	39,058,610.9579		1197
5	13	Sutton Hall	Substructure	Foundations	Standard Foundations	$631,699.98	39,690,310.9335		1112
4	1	Showalter Hall	Services	Fire Protection	Stand Pipe and Hose Systems	$81,337.26	39,771,648.1978		1103
4	1	Music Building	Services	Fire Protection	Fire Protection Sprinkler Systems	$383,158.24	40,154,806.4418		1139
4	1	Music Building	Services	Fire Protection	Stand-Pipe and Hose Systems	$54,736.89	40,209,543.3347		1139
4	1	Townhouse Apartments	Services	Fire Protection	Fire Protection Specialties	$44,586.22	40,254,129.5539		1210
4	1	Governor Martin House	Services	Fire Protection	Fire Protection Specialties	$3,488.60	40,257,618.1507		1196
4	1	Dressler Hall	Services	Fire Protection	Fire Protection Specialties	$55,647.70	40,313,265.8460		1171
4	1	Louise Anderson Hall	Services	Fire Protection	Fire Protection Specialties	$52,011.52	40,365,277.3686		1475
4	1	Showalter Hall	Services	Fire Protection	Special Fire Protection Systems	$81,337.26	40,446,614.6329		1103
4	1	Martin Hall	Services	Fire Protection	Fire Protection Specialties	$66,431.91	40,513,046.5392		1130
4	1	Pearce Hall	Services	Fire Protection	Special Fire Protection Systems	$67,306.80	40,580,353.3356		1170
4	1	University Theater	Services	Fire Protection	Fire Protection Specialties	$41,661.86	40,622,015.1988		1151
4	1	Anna Maria Apartments	Services	Fire Protection	Fire Protection Sprinkler Systems	$726.23	40,622,741.4307		1215
4	1	Cadet Hall	Services	Fire Protection	Fire Protection Specialties	$12,295.45	40,635,036.8855		1157
4	1	Science Building	Services	Fire Protection	Fire Protection Specialties	$170,297.28	40,805,334.1670		1166
4	1	Streeter Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$407,532.09	41,212,866.2589		1465
4	1	Morrison Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$537,996.71	41,750,862.9659		1463
4	1	Surbeck Services	Services	Fire Protection	Fire Protection Specialties	$32,099.39	41,782,962.3550		1450
4	1	President's House	Services	Fire Protection	Fire Protection Specialties	$3,100.14	41,786,062.4996		1184
4	1	Louise Anderson Hall	Services	Fire Protection	Special Fire Protection Systems	$52,011.52	41,838,074.0222		1475
4	1	Dryden Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$277,814.48	42,115,888.5009		1480
4	1	Anna Maria Apartments	Services	Fire Protection	Fire Protection Specialties	$103.75	42,115,992.2483		1215
4	1	Kingston Hall	Services	Fire Protection	Fire Protection Sprinkler Systems	$417,600.08	42,533,592.3292		1190
4	2	Communications Center	Services	Vertical Transportation	Elevators and Lifts	$116,406.70	42,649,999.0290		1142
4	2	Science Building	Services	Vertical Transportation	Elevators and Lifts	$851,486.35	43,501,485.3768		1166
4	2	Radio-TV Building	Services	Vertical Transportation	Elevators and Lifts	$96,455.40	43,597,940.7806		1148
4	2	Streeter Hall	Services	Vertical Transportation	Elevators and Lifts	$291,094.34	43,889,035.1165		1465
4	2	University Theater	Services	Vertical Transportation	Elevators and Lifts	$208,309.30	44,097,344.4182		1151
4	2	Isle Hall	Services	Vertical Transportation	Elevators and Lifts	$207,128.97	44,304,473.3907		1178
4	2	Williamson Hall	Services	Vertical Transportation	Elevators and Lifts	$181,615.25	44,486,088.6369		1133
4	3	Cadet Hall	Services	Electrical	Lighting and Branch Wiring	$325,829.53	44,811,918.1686		1157
4	3	Cadet Hall	Services	Electrical	Electrical Service and Distribution	$325,829.53	45,137,747.7003		1157
4	3	Indian Education Center	Services	Electrical	Communication and Security Systems	$69,118.29	45,206,865.9887		1193
4	3	Streeter Hall	Services	Electrical	Electrical Service and Distribution	$1,542,800.00	46,749,665.9852		1465
4	3	Streeter Hall	Services	Electrical	Lighting and Branch Wiring	$1,542,800.00	48,292,465.9817		1465
4	3	Isle Hall	Services	Electrical	Communication and Security Systems	$704,238.56	48,996,704.5423		1178
4	3	Dressler Hall	Services	Electrical	Lighting and Branch Wiring	$1,474,663.84	50,471,368.3811		1171
4	3	Anna Maria Apartments	Services	Electrical	Lighting and Branch Wiring	$2,749.31	50,474,117.6874		1215
4	3	Dryden Hall	Services	Electrical	Lighting and Branch Wiring	$1,051,726.20	51,525,843.8833		1480
4	3	Louise Anderson Hall	Services	Electrical	Electrical Service and Distribution	$1,378,305.27	52,904,149.1504		1475
4	3	Dryden Hall	Services	Electrical	Electrical Service and Distribution	$1,051,726.20	53,955,875.3463		1480
4	3	Louise Anderson Hall	Services	Electrical	Lighting and Branch Wiring	$1,378,305.27	55,334,180.6134		1475
4	3	President's House	Services	Electrical	Lighting and Branch Wiring	$82,153.83	55,416,334.4406		1184
4	3	Pearce Hall	Services	Electrical	Lighting and Branch Wiring	$1,783,630.00	57,199,964.4386		1170
4	3	PE Classroom Building	Services	Electrical	Communication and Security Systems	$653,475.60	57,853,440.0425		1325
4	3	Communications Center	Services	Electrical	Electrical Service and Distribution	$616,955.52	58,470,395.5580		1142
4	3	Dressler Hall	Services	Electrical	Electrical Service and Distribution	$1,474,663.84	59,945,059.3968		1171
4	3	Isle Hall	Services	Electrical	Electrical Service and Distribution	$1,097,783.57	61,042,842.9627		1178
4	3	Pearce Hall	Services	Electrical	Electrical Service and Distribution	$1,783,630.00	62,826,472.9607		1170
4	3	Isle Hall	Services	Electrical	Lighting and Branch Wiring	$1,097,783.57	63,924,256.5266		1178
4	3	Williamson Hall	Services	Electrical	Electrical Service and Distribution	$962,560.81	64,886,817.3414		1133
4	3	Showalter Hall	Services	Electrical	Lighting and Branch Wiring	$2,155,437.38	67,042,254.7187		1103

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4	3	Showalter Hall	Services	Electrical	Communication and Security Systems	$1,382,733.50	68,424,988.2220	1103
4	3	Science Building	Services	Electrical	Special Electrical Systems	$851,486.35	69,276,474.5698	1166
4	3	Surplus Sales Building	Services	Electrical	Electrical Service and Distribution	$210,906.07	69,487,380.6447	1610
4	3	Martin Hall	Services	Electrical	Electrical Service and Distribution	$1,760,445.41	71,247,826.0578	1130
4	3	Plant Utilities	Services	Electrical	Communication and Security Systems	$96,051.81	71,343,877.8638	1106
4	3	P.E. Activities Building	Services	Electrical	Communication and Security Systems	$1,750,775.46	73,094,653.3287	1303
4	3	Cheney Hall	Services	Electrical	Communication and Security Systems	$606,138.27	73,700,791.6010	1163
4	3	Plant Utilities	Services	Electrical	Lighting and Branch Wiring	$149,727.81	73,850,519.4064	1106
4	3	Governor Martin House	Services	Electrical	Communication and Security Systems	$59,306.15	73,909,825.5519	1196
4	3	Plant Utilities	Services	Electrical	Special Electrical Systems	$28,250.53	73,938,076.0809	1106
4	3	Surplus Sales Building	Services	Electrical	Lighting and Branch Wiring	$210,906.07	74,148,982.1558	1610
4	3	Art Building	Services	Electrical	Electrical Service and Distribution	$1,135,237.81	75,284,219.9655	1145
4	4	Martin Hall	Services	HVAC	Energy Supply	$332,159.51	75,616,379.4739	1130
4	4	Jim Thorpe Fieldhouse	Services	HVAC	Controls and Instrumentation	$160,875.66	75,777,255.1333	1335
4	4	Martin Hall	Services	HVAC	Distribution Systems	$1,627,581.59	77,404,836.7183	1130
4	4	Anna Maria Apartments	Services	HVAC	Terminal and Package Units	$570.61	77,405,407.3291	1215
4	4	Huston Hall	Services	HVAC	Special HVAC Systems and Equipment	$299,487.84	77,704,895.1720	1124
4	4	Anna Maria Apartments	Services	HVAC	Cooling Generating Systems	$518.74	77,705,413.9090	1215
4	4	Huston Hall	Services	HVAC	Distribution Systems	$772,363.39	78,477,777.2979	1124
4	4	Music Building	Services	HVAC	Terminal and Package Units	$301,052.90	78,778,830.1930	1139
4	4	Chemical Storage	Services	HVAC	Controls and Instrumentation	$1,706.44	78,780,536.6362	1410
4	4	Jim Thorpe Fieldhouse	Services	HVAC	Distribution Systems	$1,313,817.84	80,094,354.4754	1335
4	4	Morrison Hall	Services	HVAC	Heat Generating Systems	$3,266,408.51	83,360,762.9872	1463
4	4	Surbeck Services	Services	HVAC	Controls and Instrumentation	$96,298.16	83,457,061.1508	1450
4	4	Art Building	Services	HVAC	Distribution Systems	$1,049,559.47	84,506,620.6202	1145
4	4	Jim Thorpe Fieldhouse	Services	HVAC	Terminal and Package Units	$294,938.70	84,801,559.3249	1335
4	4	Anna Maria Apartments	Services	HVAC	Heat Generating Systems	$4,409.27	84,805,968.5899	1215
4	4	P.E. Activities Building	Services	HVAC	Distribution Systems	$2,523,176.20	87,329,144.7921	1303
4	4	Cheney Hall	Services	HVAC	Controls and Instrumentation	$106,965.57	87,436,110.3647	1163
4	4	Surplus Sales Building	Services	HVAC	Distribution Systems	$194,988.63	87,631,098.9972	1610
4	4	Williamson Hall	Services	HVAC	Controls and Instrumentation	$108,969.15	87,740,068.1483	1133
4	4	Showalter Hall	Services	HVAC	Distribution Systems	$1,992,762.83	89,732,830.9779	1103
4	4	Kingston Hall	Services	HVAC	Controls and Instrumentation	$178,971.46	89,911,802.4372	1190
4	4	Pavilion	Services	HVAC	Heat Generating Systems	$4,413,293.36	94,325,095.7970	1345
4	4	Isle Hall	Services	HVAC	Controls and Instrumentation	$124,277.39	94,449,373.1844	1178
4	4	Communications Center	Services	HVAC	Controls and Instrumentation	$69,844.02	94,519,217.2065	1142
4	4	Dryden Hall	Services	HVAC	Terminal and Package Units	$218,282.80	94,737,500.0033	1480
4	4	Dryden Hall	Services	HVAC	Energy Supply	$198,438.90	94,935,938.9061	1480
4	4	Music Building	Services	HVAC	Heat Generating Systems	$2,326,317.86	97,262,256.7689	1139
4	4	Pavilion	Services	HVAC	Terminal and Package Units	$571,132.07	97,833,388.8417	1345
4	4	John F Kennedy Library	Services	HVAC	Controls and Instrumentation	$462,607.02	98,295,995.8613	1169
4	4	Surplus Sales Building	Services	HVAC	Cooling Generating Systems	$39,793.60	98,335,789.4599	1610
4	4	Pavilion	Services	HVAC	Special HVAC Systems and Equipment	$986,500.83	99,322,290.2865	1345
4	4	Dressler Hall	Services	HVAC	Heat Generating Systems	$2,365,026.96	101,687,317.2506	1171
4	4	Showalter Hall	Services	HVAC	Terminal and Package Units	$447,354.93	102,134,672.1808	1103
4	4	Showalter Hall	Services	HVAC	Energy Supply	$406,686.29	102,541,358.4741	1103
4	4	Turnbull Research Lab	Services	HVAC	Cooling Generating Systems	$31,630.97	102,572,989.4448	1710
4	4	Art Building	Services	HVAC	Terminal and Package Units	$235,615.40	102,808,604.8408	1145
4	4	Morrison Hall	Services	HVAC	Terminal and Package Units	$422,711.68	103,231,316.5238	1463
4	4	Morrison Hall	Services	HVAC	Distribution Systems	$1,882,988.37	105,114,304.8910	1463
4	4	Radio-TV Building	Services	HVAC	Controls and Instrumentation	$57,873.24	105,172,178.1351	1148
4	4	Dorothy Brewster Hall	Services	HVAC	Terminal and Package Units	$178,386.20	105,350,564.3344	1605
4	4	Dressler Hall	Services	HVAC	Energy Supply	$278,238.46	105,628,802.7916	1171
4	4	Dryden Hall	Services	HVAC	Distribution Systems	$972,350.62	106,601,153.4116	1480
4	4	Turnbull Research Lab	Services	HVAC	Special HVAC Systems and Equipment	$60,098.84	106,661,252.2553	1710
4	4	Isle Hall	Services	HVAC	Heat Generating Systems	$1,760,596.32	108,421,848.5796	1178
4	4	Communications Center	Services	HVAC	Distribution Systems	$570,392.83	108,992,241.4065	1142
4	4	Art Building	Services	HVAC	Special HVAC Systems and Equipment	$406,972.04	109,399,213.4432	1145
4	4	Communications Center	Services	HVAC	Terminal and Package Units	$128,047.37	109,527,260.8152	1142
4	4	Isle Hall	Services	HVAC	Terminal and Package Units	$227,841.87	109,755,102.6888	1178
4	4	Surbeck Services	Services	HVAC	Cooling Generating Systems	$160,496.93	109,915,599.6231	1450
4	4	Morrison Hall	Services	HVAC	Controls and Instrumentation	$230,570.01	110,146,169.6353	1463
4	4	Turnbull Research Lab	Services	HVAC	Controls and Instrumentation	$18,978.58	110,165,148.2183	1710
4	4	Townhouse Apartments	Services	HVAC	Terminal and Package Units	$245,224.19	110,410,372.4110	1210
4	4	Anna Maria Apartments	Services	HVAC	Controls and Instrumentation	$311.24	110,410,683.6532	1215
4	4	University Theater	Services	HVAC	Terminal and Package Units	$229,140.24	110,639,823.8889	1151
4	4	Martin Hall	Services	HVAC	Controls and Instrumentation	$199,295.71	110,839,119.6001	1130
4	4	Cheney Hall	Services	HVAC	Special HVAC Systems and Equipment	$338,724.30	111,177,843.8995	1163
4	4	Cheney Hall	Services	HVAC	Heat Generating Systems	$1,515,345.61	112,693,189.5139	1163
4	4	Cadet Hall	Services	HVAC	Terminal and Package Units	$67,625.00	112,760,814.5115	1157
4	4	Cadet Hall	Services	HVAC	Energy Supply	$61,477.27	112,822,291.7810	1157
4	4	Cadet Hall	Services	HVAC	Distribution Systems	$301,238.62	113,123,530.4003	1157
4	4	Tawanka Commons	Services	HVAC	Heat Generating Systems	$2,719,535.56	115,843,065.9590	1121
4	4	Martin Hall	Services	HVAC	Terminal and Package Units	$365,375.47	116,208,441.4244	1130
4	4	Streeter Hall	Services	HVAC	Distribution Systems	$1,426,362.24	117,634,803.6649	1465
4	4	Cheney Hall	Services	HVAC	Terminal and Package Units	$196,103.55	117,830,907.2119	1163
4	4	Williamson Hall	Services	HVAC	Terminal and Package Units	$199,776.77	118,030,683.9861	1133
4	4	Dryden Hall	Services	HVAC	Controls and Instrumentation	$119,063.35	118,149,747.3315	1480
4	4	Greenhouse Science	Services	HVAC	Terminal and Package Units	$3,860.15	118,153,607.4818	1420
4	4	Townhouse Apartments	Services	HVAC	Special HVAC Systems and Equipment	$423,569.05	118,577,176.5306	1210
4	4	Greenhouse Science	Services	HVAC	Special HVAC Systems and Equipment	$6,667.53	118,583,844.0628	1420
4	4	Townhouse Apartments	Services	HVAC	Distribution Systems	$1,092,362.29	119,676,206.3530	1210
4	4	Science Building	Services	HVAC	Heat Generating Systems	$7,237,634.19	126,913,840.5471	1166
4	4	Greenhouse Science	Services	HVAC	Distribution Systems	$17,195.21	126,931,035.7619	1420
4	4	Tawanka Commons	Services	HVAC	Distribution Systems	$1,567,732.21	128,498,767.9677	1121
4	4	Science Building	Services	HVAC	Terminal and Package Units	$936,635.00	129,435,402.9661	1166
4	4	Governor Martin House	Services	HVAC	Distribution Systems	$85,470.61	129,520,873.5807	1196

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4	4	Governor Martin House	Services	HVAC	Controls and Instrumentation	$10,465.79	129,531,339.3706	1196
4	4	Greenhouse Science	Services	HVAC	Cooling Generating Systems	$3,509.23	129,534,848.5981	1420
4	4	Williamson Hall	Services	HVAC	Distribution Systems	$889,914.70	130,424,763.3009	1133
4	4	Huston Hall	Services	HVAC	Controls and Instrumentation	$94,575.11	130,519,338.4130	1124
4	4	Pearce Hall	Services	HVAC	Energy Supply	$336,533.96	130,855,872.3713	1170
4	4	University Theater	Services	HVAC	Controls and Instrumentation	$124,985.58	130,980,857.9562	1151
4	4	Kingston Hall	Services	HVAC	Distribution Systems	$1,461,600.20	132,442,458.1561	1190
4	4	Martin Hall	Services	HVAC	Heat Generating Systems	$2,823,355.91	135,265,814.0704	1130
4	4	Central Services Building	Services	HVAC	Controls and Instrumentation	$25,855.38	135,291,669.4499	1405
4	4	University Theater	Services	HVAC	Distribution Systems	$1,020,715.57	136,312,385.0242	1151
4	4	Woodward Field Press Box	Services	HVAC	Heat Generating Systems	$279,793.90	136,592,178.9286	1385
4	4	Substation	Services	HVAC	Terminal and Package Units	$11,731.80	136,603,910.7254	1455
4	4	Substation	Services	HVAC	Special HVAC Systems and Equipment	$20,264.01	136,624,174.7375	1455
4	4	Kingston Hall	Services	HVAC	Terminal and Package Units	$328,114.34	136,952,289.0749	1190
4	4	Martin Hall	Services	HVAC	Cooling Generating Systems	$332,159.51	137,284,448.5833	1130
4	4	Pavilion	Services	HVAC	Controls and Instrumentation	$311,526.59	137,595,975.1728	1345
4	4	Surplus Sales Building	Services	HVAC	Terminal and Package Units	$43,772.96	137,639,748.1320	1610
4	4	Science Building	Services	HVAC	Cooling Generating Systems	$851,486.35	138,491,234.4798	1166
4	4	Art Building	Services	HVAC	Controls and Instrumentation	$128,517.49	138,619,751.9703	1145
4	4	Music Building	Services	HVAC	Controls and Instrumentation	$164,210.67	138,783,962.6427	1139
4	4	Surplus Sales Building	Services	HVAC	Heat Generating Systems	$338,245.60	139,122,208.2420	1610
4	4	Streeter Hall	Services	HVAC	Heat Generating Systems	$2,474,301.94	141,596,510.1785	1465
4	4	Streeter Hall	Services	HVAC	Terminal and Package Units	$320,203.77	141,916,713.9534	1465
4	4	Pavilion	Services	HVAC	Distribution Systems	$2,544,133.73	144,460,847.6793	1345
4	4	Showalter Hall	Services	HVAC	Controls and Instrumentation	$244,011.78	144,704,859.4629	1103
4	4	Science Building	Services	HVAC	Special HVAC Systems and Equipment	$1,617,824.04	146,322,683.5078	1166
4	4	Music Building	Services	HVAC	Distribution Systems	$1,341,053.78	147,663,737.2854	1139
4	4	Woodward Field Press Box	Services	HVAC	Cooling Generating Systems	$32,916.93	147,696,654.2143	1385
4	5	Pavilion	Services	Plumbing	Plumbing Fixtures	$1,401,869.68	149,098,523.8914	1345
4	5	Woodward Field Concessions	Services	Plumbing	Sanitary Waste	$14,940.20	149,113,464.0955	1370
4	5	Kingston Hall	Services	Plumbing	Plumbing Fixtures	$805,371.58	149,918,835.6762	1190
4	5	Cheney Hall	Services	Plumbing	Plumbing Fixtures	$481,345.08	150,400,180.7611	1163
4	5	Pavilion	Services	Plumbing	Sanitary Waste	$882,658.71	151,282,839.4717	1345
4	5	Greenhouse Boneyard	Services	Plumbing	Special Plumbing Systems	$3,980.19	151,286,819.6642	1425
4	5	Aquatics Building	Services	Plumbing	Sanitary Waste	$198,069.54	151,484,889.2076	1340
4	5	Aquatics Building	Services	Plumbing	Special Plumbing Systems	$163,116.09	151,648,005.2983	1340
4	5	Greenhouse Science	Services	Plumbing	Domestic Water Distribution	$9,474.91	151,657,480.2131	1420
4	5	Greenhouse Science	Services	Plumbing	Special Plumbing Systems	$4,912.92	151,662,393.1319	1420
4	5	Martin Hall	Services	Plumbing	Sanitary Waste	$564,671.21	152,227,064.3395	1130
4	5	Martin Hall	Services	Plumbing	Rain Water Drainage	$166,079.75	152,393,144.0937	1130
4	5	Greenhouse Science	Services	Plumbing	Plumbing Fixtures	$9,474.91	152,402,619.0085	1420
4	5	Martin Hall	Services	Plumbing	Domestic Water Distribution	$896,830.72	153,299,449.7245	1130
4	5	Louise Anderson Hall	Services	Plumbing	Domestic Water Distribution	$702,155.54	154,001,605.2644	1475
4	5	Louise Anderson Hall	Services	Plumbing	Plumbing Fixtures	$702,155.54	154,703,760.8043	1475
4	5	Louise Anderson Hall	Services	Plumbing	Sanitary Waste	$442,097.95	155,145,858.7494	1475
4	5	Woodward Field Concessions	Services	Plumbing	Domestic Water Distribution	$23,728.56	155,169,587.3082	1370
4	5	Anna Maria Apartments	Services	Plumbing	Domestic Water Distribution	$1,400.59	155,170,987.8983	1215
4	5	Woodward Field Concessions	Services	Plumbing	Plumbing Fixtures	$23,728.56	155,194,716.4571	1370
4	5	Science Building	Services	Plumbing	Special Plumbing Systems	$1,192,080.95	156,386,797.4074	1166
4	5	Anna Maria Apartments	Services	Plumbing	Plumbing Fixtures	$1,400.59	156,388,197.9975	1215
4	5	Science Building	Services	Plumbing	Sanitary Waste	$1,447,526.90	157,835,724.8998	1166
4	5	Anna Maria Apartments	Services	Plumbing	Sanitary Waste	$881.85	157,836,606.7528	1215
4	5	Anna Maria Apartments	Services	Plumbing	Rain Water Drainage	$259.37	157,836,866.1213	1215
4	5	Martin Hall	Services	Plumbing	Plumbing Fixtures	$896,830.72	158,733,696.8373	1130
4	5	Isle Hall	Services	Plumbing	Sanitary Waste	$352,119.28	159,085,816.1176	1178
4	5	Isle Hall	Services	Plumbing	Domestic Water Distribution	$559,248.25	159,645,064.3704	1178
4	5	Isle Hall	Services	Plumbing	Plumbing Fixtures	$559,248.25	160,204,312.6232	1178
4	5	Pavilion	Services	Plumbing	Domestic Water Distribution	$1,401,869.68	161,606,182.3003	1345
4	5	Aquatics Building	Services	Plumbing	Plumbing Fixtures	$314,581.03	161,920,763.3309	1340
4	5	Greenhouse Boneyard	Services	Plumbing	Plumbing Fixtures	$7,676.09	161,928,439.4164	1425
4	5	Louise Anderson Hall	Services	Plumbing	Rain Water Drainage	$130,028.80	162,058,468.2138	1475
4	5	Plant Utilities	Services	Plumbing	Plumbing Fixtures	$76,276.43	162,134,744.6458	1106
4	5	Tawanka Commons	Services	Plumbing	Special Plumbing Systems	$447,923.51	162,582,668.1587	1121
4	5	Showalter Hall	Services	Plumbing	Sanitary Waste	$691,366.75	163,274,034.9103	1103
4	5	Showalter Hall	Services	Plumbing	Rain Water Drainage	$203,343.15	163,477,378.0570	1103
4	5	Showalter Hall	Services	Plumbing	Domestic Water Distribution	$1,098,053.05	164,575,431.1020	1103
4	5	Turnbull Research Lab	Services	Plumbing	Plumbing Fixtures	$85,403.63	164,660,834.7270	1710
4	5	Dryden Hall	Services	Plumbing	Sanitary Waste	$337,346.16	164,998,180.8876	1480
4	5	Jim Thorpe Fieldhouse	Services	Plumbing	Plumbing Fixtures	$723,940.48	165,722,121.3673	1335
4	5	Showalter Hall	Services	Plumbing	Plumbing Fixtures	$1,098,053.05	166,820,174.4123	1103
4	5	Plant Utilities	Services	Plumbing	Domestic Water Distribution	$76,276.43	166,896,450.8443	1106
4	5	Turnbull Research Lab	Services	Plumbing	Special Plumbing Systems	$44,283.36	166,940,734.2056	1710
4	5	Communications Center	Services	Plumbing	Plumbing Fixtures	$314,298.10	167,255,032.3103	1142
4	5	Plant Utilities	Services	Plumbing	Sanitary Waste	$48,025.90	167,303,058.2133	1106
4	5	P.E. Activities Building	Services	Plumbing	Sanitary Waste	$875,387.73	168,178,445.9458	1303
4	5	P.E. Activities Building	Services	Plumbing	Plumbing Fixtures	$1,390,321.65	169,568,767.5990	1303
4	5	Cadet Hall	Services	Plumbing	Plumbing Fixtures	$165,988.64	169,734,756.2346	1157
4	5	Dryden Hall	Services	Plumbing	Plumbing Fixtures	$535,785.06	170,270,541.2980	1480
4	5	Chemical Storage	Services	Plumbing	Plumbing Fixtures	$7,678.99	170,278,220.2925	1410
4	5	Kingston Hall	Services	Plumbing	Special Plumbing Systems	$417,600.08	170,695,820.3734	1190
4	5	Red Barn	Services	Plumbing	Sanitary Waste	$81,639.68	170,777,460.0561	1205
4	5	Townhouse Apartments	Services	Plumbing	Plumbing Fixtures	$601,913.95	171,379,374.0025	1210
4	5	Townhouse Apartments	Services	Plumbing	Domestic Water Distribution	$601,913.95	171,981,287.9489	1210
4	5	Townhouse Apartments	Services	Plumbing	Sanitary Waste	$378,982.87	172,360,270.8148	1210
4	5	Music Building	Services	Plumbing	Plumbing Fixtures	$738,948.04	173,099,218.8532	1139
4	5	Chemical Storage	Services	Plumbing	Domestic Water Distribution	$7,678.99	173,106,897.8477	1410
4	6	Morrison Hall	Shell	Roofing	Roof Coverings	$614,853.39	173,721,751.2374	1463

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4	6	Isle Hall	Shell	Roofing	Roof Coverings	$331,406.38	174,053,157.6166	1178
4	6	Science Building	Shell	Roofing	Roof Coverings	$1,362,378.25	175,415,535.8682	1166
4	6	John F Kennedy Library	Shell	Roofing	Roof Opening	$771,011.68	176,186,547.5435	1169
4	6	Morrison Hall	Shell	Roofing	Projections	$153,713.35	176,340,260.8909	1463
4	6	Pearce Hall	Shell	Roofing	Projections	$134,613.59	176,474,874.4836	1170
4	6	Anna Maria Apartments	Shell	Roofing	Roof Opening	$518.74	176,475,393.2206	1215
4	6	Streeter Hall	Shell	Roofing	Roof Coverings	$465,750.97	176,941,144.1906	1465
4	6	Fifth Street Hall	Shell	Roofing	Projections	$10,751.66	176,951,895.8540	1197
4	6	Greenhouse Boneyard	Shell	Roofing	Roof Coverings	$4,548.79	176,956,444.6455	1425
4	6	Anna Maria Apartments	Shell	Roofing	Roof Coverings	$829.98	176,957,274.6248	1215
4	6	Isle Hall	Shell	Roofing	Roof Opening	$207,128.97	177,164,403.5973	1178
4	6	Streeter Hall	Shell	Roofing	Projections	$116,437.74	177,280,841.3398	1465
4	6	John F Kennedy Library	Shell	Roofing	Roof Coverings	$1,233,618.77	178,514,460.1065	1169
4	6	Townhouse Apartments	Shell	Roofing	Roof Coverings	$356,689.75	178,871,149.8602	1210
4	6	Science Building	Shell	Roofing	Roof Opening	$851,486.35	179,722,636.2080	1166
4	6	Anna Maria Apartments	Shell	Roofing	Projections	$207.49	179,722,843.7028	1215
4	6	Science Building	Shell	Roofing	Projections	$340,594.56	180,063,438.2657	1166
4	7	Greenhouse Boneyard	Shell	Exterior Closure	Exterior Walls	$16,489.37	180,079,927.6336	1425
4	7	Science Building	Shell	Exterior Closure	Exterior Doors	$510,891.82	180,590,819.4581	1166
4	7	Louise Anderson Hall	Shell	Exterior Closure	Exterior Walls	$1,508,334.04	182,099,153.4983	1475
4	7	Jim Thorpe Fieldhouse	Shell	Exterior Closure	Exterior Walls	$1,555,131.32	183,654,284.8140	1335
4	7	Greenhouse Boneyard	Shell	Exterior Closure	Exterior Windows	$7,391.79	183,661,676.6000	1425
4	7	Surbeck Services	Shell	Exterior Closure	Exterior Windows	$417,292.05	184,078,968.6471	1450
4	7	Surplus Sales Building	Shell	Exterior Closure	Exterior Walls	$230,802.87	184,309,771.5176	1610
4	7	Townhouse Apartments	Shell	Exterior Closure	Exterior Walls	$1,293,000.26	185,602,771.7761	1210
4	7	Woodward Field Concessions	Shell	Exterior Closure	Exterior Walls	$50,972.46	185,653,744.2330	1370
4	7	Science Building	Shell	Exterior Closure	Exterior Walls	$4,938,620.79	190,592,365.0184	1166
4	7	Cheney Hall	Shell	Exterior Closure	Exterior Windows	$463,517.49	191,055,882.5051	1163
4	7	Tawanka Commons	Shell	Exterior Closure	Exterior Windows	$831,857.94	191,887,740.4491	1121
4	7	Plant Utilities	Shell	Exterior Closure	Exterior Walls	$163,853.07	192,051,593.5163	1106
4	7	Dressler Hall	Shell	Exterior Closure	Exterior Walls	$1,613,783.04	193,665,376.5578	1171
4	7	Streeter Hall	Shell	Exterior Closure	Exterior Doors	$174,656.61	193,840,033.1648	1465
4	7	Dryden Hall	Shell	Exterior Closure	Exterior Windows	$515,941.17	194,355,974.3342	1480
4	7	Louise Anderson Hall	Shell	Exterior Closure	Exterior Windows	$676,149.78	195,032,124.1098	1475
4	7	Townhouse Apartments	Shell	Exterior Closure	Exterior Doors	$133,758.65	195,165,882.7622	1210
4	7	Pearce Hall	Shell	Exterior Closure	Exterior Walls	$1,951,896.95	197,117,779.7080	1170
4	7	Townhouse Apartments	Shell	Exterior Closure	Exterior Windows	$579,620.83	197,697,400.5422	1210
4	7	Fifth Street Hall	Shell	Exterior Closure	Exterior Windows	$69,885.81	197,767,286.3523	1197
4	7	Surplus Sales Building	Shell	Exterior Closure	Exterior Windows	$103,463.36	197,870,749.7131	1610
4	7	Surplus Sales Building	Shell	Exterior Closure	Exterior Doors	$23,876.16	197,894,625.8730	1610
4	7	Isle Hall	Shell	Exterior Closure	Exterior Walls	$1,201,348.03	199,095,973.9059	1178
4	7	Anna Maria Apartments	Shell	Exterior Closure	Exterior Walls	$3,008.67	199,098,982.5807	1215
4	7	Plant Utilities	Shell	Exterior Closure	Exterior Windows	$73,451.38	199,172,433.9593	1106
4	7	Plant Utilities	Shell	Exterior Closure	Exterior Doors	$16,950.32	199,189,384.2772	1106
4	7	Pearce Hall	Shell	Exterior Closure	Exterior Doors	$201,920.38	199,391,304.6585	1170
4	8	Plant Utilities	Shell	Superstructure	Roof Construction	$135,602.54	199,526,907.2020	1106
4	8	Plant Utilities	Shell	Superstructure	Floor Construction	$203,403.80	199,730,311.0067	1106
4	8	Fifth Street Hall	Shell	Superstructure	Roof Construction	$129,019.96	199,859,330.9622	1197
4	8	Louise Anderson Hall	Shell	Superstructure	Roof Construction	$1,248,276.49	201,107,607.4561	1475
4	8	Tawanka Commons	Shell	Superstructure	Roof Construction	$1,535,737.72	202,643,345.1806	1121
4	8	Townhouse Apartments	Shell	Superstructure	Floor Construction	$1,605,103.75	204,248,448.9268	1210
4	8	Sutton Hall	Shell	Superstructure	Floor Construction	$1,082,914.21	205,331,363.1386	1112
4	8	Martin Hall	Shell	Superstructure	Roof Construction	$1,594,365.69	206,925,728.8285	1130
4	8	Sutton Hall	Shell	Superstructure	Roof Construction	$721,942.85	207,647,671.6737	1112
4	8	Williamson Hall	Shell	Superstructure	Roof Construction	$871,753.21	208,519,424.8823	1133
4	8	Isle Hall	Shell	Superstructure	Floor Construction	$1,491,328.57	210,010,753.4536	1178
4	8	Anna Maria Apartments	Shell	Superstructure	Roof Construction	$2,489.94	210,013,243.3915	1215
4	8	Fifth Street Hall	Shell	Superstructure	Floor Construction	$193,529.92	210,206,773.3147	1197
4	9	Fifth Street Hall	Interiors	Staircases	Stair Finishes	$8,063.75	210,214,837.0619	1197
4	9	Fifth Street Hall	Interiors	Staircases	Stair Construction	$45,694.57	210,260,531.6316	1197
4	9	Plant Utilities	Interiors	Staircases	Stair Construction	$48,025.90	210,308,557.5346	1106
4	9	Showalter Hall	Interiors	Staircases	Stair Finishes	$122,005.89	210,430,563.4264	1103
4	10	Martin Hall	Interiors	Interior Construction	Specialties	$498,239.26	210,928,802.6890	1130
4	10	Dryden Hall	Interiors	Interior Construction	Specialties	$297,658.35	211,226,461.0432	1480
4	10	Williamson Hall	Interiors	Interior Construction	Specialties	$272,422.87	211,498,883.9124	1133
4	10	Fifth Street Hall	Interiors	Interior Construction	Interior Doors	$61,822.06	211,560,705.9740	1197
4	10	Louise Anderson Hall	Interiors	Interior Construction	Specialties	$390,086.39	211,950,792.3662	1475
4	10	Townhouse Apartments	Interiors	Interior Construction	Interior Doors	$512,741.50	212,463,533.8638	1210
4	10	Showalter Hall	Interiors	Interior Construction	Specialties	$610,029.44	213,073,563.3038	1103
4	10	Plant Utilities	Interiors	Interior Construction	Fixed and Moveable Partitions	$146,902.76	213,220,466.0610	1106
4	10	Pearce Hall	Interiors	Interior Construction	Fixed and Moveable Partitions	$1,749,976.66	214,970,442.7196	1170
4	10	Rozell Plant	Interiors	Interior Construction	Specialties	$310,307.78	215,280,750.4950	1460
4	10	Streeter Hall	Interiors	Interior Construction	Fixed and Moveable Partitions	$1,513,690.61	216,794,441.1067	1465
4	10	Morrison Hall	Interiors	Interior Construction	Fixed and Moveable Partitions	$1,998,273.46	218,792,714.5694	1463
4	10	Isle Hall	Interiors	Interior Construction	Specialties	$310,693.46	219,103,408.0282	1178
4	10	Kingston Hall	Interiors	Interior Construction	Specialties	$447,428.63	219,550,836.6625	1190
4	10	Fifth Street Hall	Interiors	Interior Construction	Fixed and Moveable Partitions	$139,771.62	219,690,608.2826	1197
4	10	PE Classroom Building	Interiors	Interior Construction	Specialties	$288,298.04	219,978,906.3210	1325
4	11	Showalter Hall	Interiors	Interior Finishes	Ceiling Finishes	$894,709.86	220,873,616.1814	1103
4	11	Cheney Hall	Interiors	Interior Finishes	Ceiling Finishes	$392,207.09	221,265,823.2754	1163
4	11	Woodward Field Concessions	Interiors	Interior Finishes	Wall Finishes	$21,970.89	221,287,794.1630	1370
4	11	Science Building	Interiors	Interior Finishes	Ceiling Finishes	$1,873,270.00	223,161,064.1598	1166
4	11	Surbeck Services	Interiors	Interior Finishes	Wall Finishes	$401,242.35	223,562,306.5105	1450
4	11	Fifth Street Hall	Interiors	Interior Finishes	Wall Finishes	$67,197.89	223,629,504.4044	1197
4	11	Dressler Hall	Interiors	Interior Finishes	Wall Finishes	$695,596.17	224,325,100.5734	1171
4	11	Chemical Storage	Interiors	Interior Finishes	Wall Finishes	$7,110.18	224,332,210.7534	1410
4	11	Surplus Sales Building	Interiors	Interior Finishes	Wall Finishes	$99,484.00	224,431,694.7536	1610

Deferred Maintenance Backlog Reduction Plan 2023-2033
Preservation Project List Detail

4	11	Streeter Hall	Interiors	Interior Finishes	Ceiling Finishes	$640,407.55	225,072,102.3034	1465
4	11	Morrison Hall	Interiors	Interior Finishes	Floor Finishes	$1,652,418.46	226,724,520.7657	1463
4	11	Streeter Hall	Interiors	Interior Finishes	Floor Finishes	$1,251,705.71	227,976,226.4806	1465
4	11	Plant Utilities	Interiors	Interior Finishes	Wall Finishes	$70,626.33	228,046,852.8058	1106
4	11	Morrison Hall	Interiors	Interior Finishes	Wall Finishes	$960,708.39	229,007,561.1958	1463
4	11	Morrison Hall	Interiors	Interior Finishes	Ceiling Finishes	$845,423.37	229,852,984.5618	1463
4	11	Fifth Street Hall	Interiors	Interior Finishes	Floor Finishes	$115,580.38	229,968,564.9415	1197
4	11	Fifth Street Hall	Interiors	Interior Finishes	Ceiling Finishes	$59,134.15	230,027,699.0869	1197
4	11	Louise Anderson Hall	Interiors	Interior Finishes	Floor Finishes	$1,118,247.72	231,145,946.8076	1475
4	11	Pearce Hall	Interiors	Interior Finishes	Wall Finishes	$841,334.93	231,987,281.7348	1170
4	12	Louise Anderson Hall	Equipment	Equipment and Furnishings	Moveable Furnishings (Capital Funded	$78,017.28	232,065,299.0157	1475
4	12	Greenhouse Science	Special	Special Construction	Special Controls and Instrumentation	$3,509.23	232,068,808.2432	1420
4	12	Greenhouse Boneyard	Equipment	Equipment and Furnishings	Moveable Furnishings (Capital Funded	$852.90	232,069,661.1416	1425
4	12	Isle Hall	Equipment	Equipment and Furnishings	Moveable Furnishings (Capital Funded	$62,138.69	232,131,799.8353	1178
4	12	Plant Utilities	Equipment	Equipment and Furnishings	Moveable Furnishings (Capital Funded	$8,475.16	232,140,274.9943	1106
4	12	Surbeck Services	Special	Special Construction	Integrated Constr. & Special Constr.	$160,496.93	232,300,771.9286	1450
4	12	Surbeck Services	Special	Special Construction	Special Controls and Instrumentation	$160,496.93	232,461,268.8629	1450
4	13	Fifth Street Hall	Substructure	Foundations	Slab on Grade	$75,261.64	232,536,530.5053	1197
4	13	Radio-TV Building	Substructure	Foundations	Slab on Grade	$270,075.14	232,806,605.6502	1148
4	13	Streeter Hall	Substructure	Foundations	Slab on Grade	$815,064.18	233,621,669.8341	1465
4	13	Computing and Engineering Sciences	Substructure	Foundations	Slab on Grade	$1,583,277.65	235,204,947.4821	1160
4	13	President's House	Substructure	Foundations	Slab on Grade	$43,402.02	235,248,349.5059	1184
4	13	Indian Education Center	Substructure	Foundations	Slab on Grade	$56,920.94	235,305,270.4479	1193
4	13	University Theater	Substructure	Foundations	Slab on Grade	$583,266.08	235,888,536.5236	1151
4	13	Music Building	Substructure	Foundations	Slab on Grade	$766,316.49	236,654,853.0116	1139
4	13	Communications Center	Substructure	Foundations	Slab on Grade	$325,938.78	236,980,791.7884	1142
4	13	Plant Utilities	Substructure	Foundations	Slab on Grade	$79,101.49	237,059,893.2738	1106
4	13	Plant Utilities	Substructure	Foundations	Standard Foundations	$118,652.22	237,178,545.4967	1106
4	13	Townhouse Apartments	Substructure	Foundations	Slab on Grade	$624,207.06	237,802,752.5553	1210
4	13	Townhouse Apartments	Substructure	Foundations	Standard Foundations	$936,310.55	238,739,063.1016	1210
4	13	Martin Hall	Substructure	Foundations	Slab on Grade	$930,046.67	239,669,109.7746	1130
4	13	Art Building	Substructure	Foundations	Slab on Grade	$599,748.30	240,268,858.0770	1145
3	1	Huston Hall	Services	Fire Protection	Fire Protection Specialties	$31,525.04	240,300,383.1156	1124
3	1	Science Building	Services	Fire Protection	Special Fire Protection Systems	$170,297.28	240,470,680.3971	1166
3	1	Dryden Hall	Services	Fire Protection	Fire Protection Specialties	$39,687.78	240,510,368.1804	1480
3	1	Dryden Hall	Services	Fire Protection	Special Fire Protection Systems	$39,687.78	240,550,055.9637	1480
3	1	Indian Education Center	Services	Fire Protection	Fire Protection Specialties	$4,065.78	240,554,121.7453	1193
3	1	Science Building	Services	Fire Protection	Stand-Pipe and Hose Systems	$170,297.28	240,724,419.0268	1166
3	1	Pavilion	Services	Fire Protection	Fire Protection Sprinkler Systems	$726,895.39	241,451,314.4185	1345
3	1	Hazardous Waste Transfer Facility	Services	Fire Protection	Fire Protection Specialties	$874.87	241,452,189.2925	1435
3	1	University Theater	Services	Fire Protection	Fire Protection Sprinkler Systems	$291,633.04	241,743,822.3303	1151
3	1	Science Building	Services	Fire Protection	Fire Protection Sprinkler Systems	$1,192,080.95	242,935,903.2806	1166
3	1	Pearce Hall	Services	Fire Protection	Fire Protection Specialties	$67,306.80	243,003,210.0770	1170
3	1	P.E. Activities Building	Services	Fire Protection	Fire Protection Specialties	$102,986.79	243,106,196.8683	1303
3	1	Cheney Hall	Services	Fire Protection	Fire Protection Specialties	$35,655.19	243,141,852.0605	1163
3	1	Tawanka Commons	Services	Fire Protection	Special Fire Protection Systems	$63,989.07	243,205,841.1348	1121
3	1	Pearce Hall	Services	Fire Protection	Stand-Pipe and Hose Systems	$67,306.80	243,273,147.9312	1170
3	1	Communications Center	Services	Fire Protection	Fire Protection Specialties	$23,281.34	243,296,429.2728	1142
3.	1	Communications Center	Services	Fire Protection	Fire Protection Sprinkler Systems	$162,969.39	243,459,398.6612	1142
3	1	P.E. Activities Building	Services	Fire Protection	Special Fire Protection Systems	$102,986.79	243,562,385.4525	1303
3	1	Dressler Hall	Services	Fire Protection	Stand-Pipe and Hose Systems	$55,647.70	243,618,033.1478	1171
3	1	P.E. Activities Building	Services	Fire Protection	Fire Protection Sprinkler Systems	$720,907.53	244,338,940.6753	1303
3	1	Woodward Field Press Box	Services	Fire Protection	Fire Protection Specialties	$6,583.39	244,345,524.0615	1385
3	1	Martin Hall	Services	Fire Protection	Stand-Pipe and Hose Systems	$66,431.91	244,411,955.9678	1130
3	2	John F Kennedy Library	Services	Vertical Transportation	Elevators and Lifts	$771,011.68	245,182,967.6431	1169
3	2	Music Building	Services	Vertical Transportation	Elevators and Lifts	$273,684.45	245,456,652.0885	1139
3	2	Art Building	Services	Vertical Transportation	Elevators and Lifts	$214,195.81	245,670,847.8994	1145
3	2	Sutton Hall	Services	Vertical Transportation	Elevators and Lifts	$150,404.75	245,821,252.6542	1112
3	2	Pearce Hall	Services	Vertical Transportation	Elevators and Lifts	$336,533.96	246,157,786.6125	1170
3	2	Huston Hall	Services	Vertical Transportation	Elevators and Lifts	$157,625.18	246,315,411.7945	1124
3	2	Cheney Hall	Services	Vertical Transportation	Elevators and Lifts	$178,275.95	246,493,687.7433	1163
3	3	Chemical Storage	Services	Electrical	Communication and Security Systems	$9,669.85	246,503,357.5885	1410
3	3	Kingston Hall	Services	Electrical	Lighting and Branch Wiring	$1,580,914.52	248,084,272.1131	1190
3	3	Kingston Hall	Services	Electrical	Electrical Service and Distribution	$1,580,914.52	249,665,186.6377	1190
3	3	Monroe Hall	Services	Electrical	Communication and Security Systems	$961,324.59	250,626,511.2289	1118
3	3	Cadet Hall	Services	Electrical	Communication and Security Systems	$209,022.73	250,835,533.9612	1157
3	3	Plant Utilities	Services	Electrical	Electrical Service and Distribution	$149,727.81	250,985,261.7666	1106
3	3	Tawanka Commons	Services	Electrical	Lighting and Branch Wiring	$1,695,710.37	252,680,972.1359	1121
3	3	University Theater	Services	Electrical	Communication and Security Systems	$708,251.68	253,389,223.8159	1151
3	3	Communications Center	Services	Electrical	Lighting and Branch Wiring	$616,955.52	254,006,179.3314	1142
3	3	Townhouse Apartments	Services	Electrical	Electrical Service and Distribution	$1,181,534.74	255,187,714.0704	1210
3	3	Tawanka Commons	Services	Electrical	Electrical Service and Distribution	$1,695,710.37	256,883,424.4397	1121
3	3	Turnbull Research Lab	Services	Electrical	Electrical Service and Distribution	$167,644.15	257,051,068.5862	1710
3	3	Greenhouse Science	Services	Electrical	Lighting and Branch Wiring	$18,598.91	257,069,667.4923	1420
3	3	Aquatics Building	Services	Electrical	Lighting and Branch Wiring	$617,510.89	257,687,178.3809	1340
3	3	Chemical Storage	Services	Electrical	Lighting and Branch Wiring	$15,073.58	257,702,251.9621	1410
3	3	Cheney Hall	Services	Electrical	Lighting and Branch Wiring	$944,862.54	258,647,114.5006	1163
3	3	Biology Boat Garage	Services	Electrical	Lighting and Branch Wiring	$63,925.64	258,711,040.1430	1485
3	3	Jim Thorpe Fieldhouse	Services	Electrical	Electrical Service and Distribution	$1,421,068.30	260,132,108.4384	1335
3	3	University Theater	Services	Electrical	Lighting and Branch Wiring	$1,104,039.31	261,236,147.7488	1151
3	3	Pearce Hall	Services	Electrical	Communication and Security Systems	$1,144,215.55	262,380,363.2949	1170
3	3	Surbeck Services	Services	Electrical	Electrical Service and Distribution	$850,633.76	263,230,997.0556	1450
3	3	Martin Hall	Services	Electrical	Lighting and Branch Wiring	$1,760,445.41	264,991,442.4687	1130
3	3	Communications Center	Services	Electrical	Communication and Security Systems	$395,782.81	265,387,225.2784	1142
3	3	Art Building	Services	Electrical	Lighting and Branch Wiring	$1,135,237.81	266,522,463.0881	1145
3	3	Townhouse Apartments	Services	Electrical	Lighting and Branch Wiring	$1,181,534.74	267,703,997.8271	1210
3	3	President's House	Services	Electrical	Electrical Service and Distribution	$82,153.83	267,786,151.6543	1184

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2025-23 Biennial Capital Budget Request

Tab B - Preservation Projects

Martin-Williamson Hall

Computer Engineering Building - Decarbonization

Art Complex - Decarbonization

John F Kennedy Library - Decarbonization

Sutton Hall - Decarbonization

Huston Hall – Decarbonization

Building Demo for Decarbonization – Morrison, Streeter, & Isle

Minor Works: Preservation 2025-27

Minor Works – Health, Code, and Safety 057 2025-27

Minor Works – Infrastructure Preservation 057 2025-27

Preventative Maintenance / Backlog Reduction 061

Kingston Hall Renovation

Showalter Hall Renovation

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:09PM

Project Number: **40000113**
Project Title: **Martin - Williamson Hall**

Description

Starting Fiscal Year: 2024
Project Class: Preservation
Agency Priority: 1

Project Summary

Martin/Williamson Hall houses the Psychology department, the Education department, Counseling and Wellness Services, and Student and Support Services. The building has an aggregate age of over fifty-years-old with major systems that are well past their expected lifecycle. The renovation of this building is the first priority for facilities preservation on the Eastern Cheney campus.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

Problem Statement: The sustainability of growth for Eastern Washington University's professional program's degree production is limited by the lack of quality and quantity of appropriate space for the programs in Martin/Williamson.

The Martin/Williamson facility houses two of five programs within the College of Professional Programs; the School of Education and the School Psychology. Also located within Martin Hall and closely tied to the departments and academic success is the Counseling and Wellness Services and Student Accommodations and Support Services.

Martin/Williamson condition and configuration continue to be an obstacle for all departments housed within the facility, inhibiting effective quality program instruction, administration, and student services. Many changing factors, internal and external to the university, have created the need for the Martin/Williamson facility to respond for EWU's future student population. The renovation of Martin/Williamson is currently the highest priority for Eastern.

Martin/Williamson (the building complex): The Martin/Williamson facility is one of Eastern's largest academic buildings, with over 89,000 gross square feet. With an important location on the main quad, Martin/Williamson also provides a strong backdrop for the pedestrian "mall" that connects the heart of campus. The 2014 Comprehensive Campus Master Plan (CCMP) notes Martin/Williamson's prominent location and approach to increase the density oft he existing campus to maximize the use of the current land holdings.

The renovation of Martin Hall in 1980 (originally constructed in 1935) created a number of highly specialized laboratory and clinical research spaces. These spaces were tailored to a teaching pedagogy that has since changed and therefore are now a hindrance to modern teaching practices. Williamson Hall, built in 1966, has never been fully renovated and needs significant upgrades to the systems to make the building meet today's performance standards. Overall, the combined buildings have undergone many additions and renovations over the years and lack programmatic cohesion.

Condition assessment: From Eastern's 2022 Facility Condition Assessment (follow-up to the 2005 Meng Analysis), Martin and Williams's overall facility condition score is 3.0 (Fair). Preventive maintenance and minor improvements have kept the facility in a stable state for academic use.

Operating Budget: The replacement of the many different outdated and aged building systems into a single integrated facility will reduce overall operating and maintenance costs to the campus. The existing Williamson Hall isa highly inefficient single glazed building and is a major energy user for the complex. Integrated daylighting and electric lighting controls will greatly improve the efficiency of the facility. Any increase in square footage to support the programs will be offset by new efficient systems and an improved building envelope.

Public Safety: Campus security is a continuously evolving aspect for existing and future campus development. The existing

Description

building has many dead end interior corridors and back halls presenting a significant security problem. Exterior back courtyards are hidden and lack overview from major circulation/public spaces. The predesign has developed guidelines and standards for the design phase to implement; both passive and active. The project will improve Martin/Williamson safety, but also adjacent facilities which inevitably effect campus-wide safety and security.

The School of Education: The mission of the School of Education is to prepare student-centered educators to be professionals, leaders, scholars, and practitioners. Teachers play extraordinary roles in the lives of their students. Teachers interact and connect with children in all stages of development and from all different backgrounds and ways of life. Over the course of their careers, teachers have the opportunity to affect the lives and futures of countless children, beginning with their student teaching experience. The students our candidates reach will go on to do amazing things; knowing the influence on their success is a deeply rewarding experience.

According to RCW 28B.10.033.1.b.i, field placement of student teachers should be targeted to high-need subject areas, including special education and English language learner, and high-need geographic areas, including Title I and rural schools. This includes devoted space for a Rural Education Lab as a center for rural education as well as the technology to reach remote districts. Eastern is in the planning stages to become a rural education hub and develop a Center for Rural Education Effectiveness. The renovated facility will help Eastern reach that goal for this Center. In order to attract teaching candidates in these high-need areas, the school must fulfill PESB's (Professional Educator Standards Board) Domain 7: where "Providers ensure that programs have adequate resources, facilities, and governance structures to enable effective administration and fiscal sustainability." Specifically, 7.c addresses three components of adequate facilities that are needed as the School of Education continues to grow and serve those in our community, region, state, and beyond. These include having necessary classrooms, lab and office spaces, up-to-date technology as well as the facilities needed to support faculty and candidate use of said technology, and current curricular resources. The space can also be used by the community for things such as the Lands Council as well as hosting a variety of conferences for which the space does not exist. Over the past several years the program has enjoyed substantial growth. Approximately 635declared undergraduate majors and 1205 graduate students. Without the necessary classroom space and equipment for labs, etc., it is difficult to adequately prepare Washington state educators.

School of Psychology: The Psychology programs are important and necessary for the region, serving to address shortages in mental health and school service provision, and provide important applied research. For example, even before the pandemic there was a shortage in mental health service providers in the state of Washington. Eastern's MS Counseling, MS Psychometry, and Behavioral Health Support Specialist programs directly address these needs. Furthermore, the three undergraduate majors provide a pipeline into graduate education in these areas. Related, the EdS School Psychology program addresses the nationwide shortage of School Psychologists, especially in rural areas. Additionally, our faculty support EWU service missions. For example, one faculty member hosts a drop-in center for students identified with autism spectrum disorder. Another faculty member is providing sports psychology services to the athletic programs.

Over the next several years there are several curricular initiatives that the School of Psychology is considering, including a post-master's certificate in school counseling that is already approved through the catalog and a Doctor of Psychology (PsyD). In addition to academic offerings, there are plans regarding: 1) a teaching clinic; 2) an assessment program to support the evaluation needs of students with suspected specific learning disability, neurocognitive disorder, and ADHD requiring identification and documentation of disorder for academic accommodations; and 3) a Center for Safety.

Counseling and Psychological Services: The issues facing students pursuing higher education are numerous. Student Affairs and student services functions at Eastern Washington University strive to create a community of care to address the overall wellbeing and needs of students through direct services and prevention activities. Services offered include individual and small group counseling, biofeedback, wellbeing coaching, peer health education, a campus food pantry network, basic needs support, faculty/staff outreach and training, accommodation support, alternative testing for accommodations, former

Description

foster youth support, partnerships with area agencies to meet student crisis needs, Title IX support and education, and general case management for students in crisis.

Washington State has invested in significant student success initiatives at Eastern Washington University to help ensure that students achieve degree completion. Over the last several years, and with the support of the legislature, Eastern has implemented a total intake model for academic advising and developed a coordinated care network that is designed to:

1. maximize collaboration of various student support services
2. create wraparound care that helps students navigate and overcome social, financial, and/or health obstacles that delay or prevent the successful completion of their degree
3. provide holistic care that helps meet the challenge of increasing mental health concerns on college campuses.

In the coming year, Eastern will launch several positions and initiatives supported by the state to help shift from engaging with students in distress after their social, financial or health challenges have impacted their academic progress to a preemptive and proactive model of support that identifies risks and provides support before student's grades and academic progress are impacted. Our staff to meet student needs and increase holistic support is, roughly, increasing in the next year by 30% in Student Affairs. One of the on-going challenges to meeting student needs effectively and efficiently is tied to space on-campus that supports the addition of positions, training/intervention work, and allows student services to be housed to reduce barriers for student access, increase visibility, and foster sustainable collaboration. The goal is to continue to work towards effectively meeting the needs of all students and, to do this, it is known that space and location of resources matter. Through co-locating student services functions (ex. counseling and wellness, student accommodations, student support services etc.), Eastern believes that we will be able to increase our ability to innovatively meet the needs of students and ensure responsiveness to the changing needs/demographics of our student population.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the projec start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
The primary goal of the renovation is to better integrate the school of Education, the School of Psychology, Counseling, and SASS into a collaborative teaching and learning facility that takes advantage of the interdependent and synergistic nature of the programs. This will allow for structured growth and the synthesis of pedagogy between the two schools and programs. Another goal is to address the state and federal building performance standards such as HB 1390, and Martin/Williamson is the ideal project to maximize the impact in two distinctive ways, 1) to greatly reduce the building energy consumption through envelope improvements and performance, and 2) by connecting to the proposed Geothermal Plant – Node 1. Martin/Williamson is a pivotal component in the campus decarbonization plan as well as the Geothermal Plant – Node 1. These two projects represent the largest possible impact to campus energy use and carbon emissions in the most expedient way.
The intent is to progress this project into the design phase for the 2025-27 biennium and eventually renovate the facility (construction) in the 2027-29 and 2029-31 biennia.

How would the request address the problem or opportunity identified in question1? What would be the result of not taking action? This request would provide programmatic cohesion for all housed within the Martin/Williamson facility and would address reductions in energy use and greenhouse gas emissions on a campus level. Lack of action at this point will result in the continued stagnation of program development and growth, lessen the ability to decarbonize the campus, and ultimately result in higher future costs to achieve the same result.

School of Education & Psychology: One of the limitations for the growth described in this request and the focus on the high-need areas is the shortage of space. The schools cannot expand on the EWU plan to transform the region (Strategic Plan) based on the current state of Martin/Williamson. It also hinders the ability to expand opportunities for underrepresented

Description

populations. The classrooms are outdated in layout, consistent accessibility access, furnishings, equipment, lighting, and climate control. The environment is not conducive to learning or teaching. Additionally, the lack of any type of lab classrooms limits the scope of programs offered. When preparing future educators, it is essential to model the environment and equipment teachers and others would have in their schools so they can generalize the skills into their careers.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Multiple alternatives were explored and are fully documented in the predesign, including cost information. These cover a range of options such as; 1) taking no action, 2) a less extensive renovation that would result in continued teaching challenges due to outdated floor plates and structural grids, and 3) a major renovation that demolishes significant portions of the building in order to create the most efficient and flexible teaching environment while also realizing the most energy efficient and sustainable building shell. The third and preferred option also maintains the historic building facades that play a prominent role in the campus identity and connections to the history of the University.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
School of Education: The School of Education houses a multitude of degree offerings, certification, and program options. Eight Undergraduate BAE degrees: Blended: Early Childhood and Special Education, Dual Endorsement: Special Education and Elementary Education, Early Childhood Education/PK-3, Educational Studies, Elementary Education, Literacy, Reading & Writing/Elementary, Secondary Education, and Transition to Teaching. Additionally there are cross-campus partnerships in 16 Secondary major certifications: Art (P-12), Biology (5-12), Bilingual (P-12), Business and Marketing (5-12), Chemistry (5-12), Earth and Space Science (5-12), English(5-12), Health and Fitness (P-12), Literacy, Reading, and Writing (P-12),Mathematics (5-12), Middle Level Math ((4-9), Middle Natural Science (4-9),Music-BME (P-12), Physics (5-12), Social Studies (5-12), and Spanish (P-12).The School of Education offers 4 add-on endorsements: Early Childhood Special Education, Elementary Education, Environmental & Sustainability Education, and Special Education. At the graduate level, there are 4 different paths: Education Leadership (EdD), Master in Teaching (MIT): Elementary, Master in Teaching (MIT): Secondary, and Master of Education (MEd). In the MEd program ,there are an additional 17 endorsements available through on-campus and/or online courses. There are 9 graduate certificate programs offered: College Teaching, Early Childhood Education, English Language Learners, Health &Physical Education, Library Media, Literacy, Principal, Special Education, and Teaching English to Speakers of Other Languages. Finally, there are eight undergraduate and graduate degrees in Business & Marketing Education (CTE).

In addition to academic offerings, the majority of faculty in the School of Psychology are actively engaged in research and include undergraduate and graduate students in those research endeavors. Current faculty research labs include the following areas of focus: Environmental education, Science Methods and Effective Practices, Social emotional Al learning, Trauma informed practices, Grow your own - educator prep, Literacy - specifically around school shooting and school violence, foundations, Special education - specifically early childhood, transition, behavior, inclusive practices (High leverage practices),Mastery-based learning, Cultural Competence Diversity and Inclusion.

School of Psychology: The School of Psychology support the following programs.
Three Graduate Programs. 1) EdS School Psychology: The Education Specialist in School Psychology has two tracks, hybrid and online. Candidates completing the program are prepared to receive a Residency Educational Staff Associate (ESA)Certificate in School Psychology from Washington's Office of Superintendent of Public Instruction (OSPI). Graduates are eligible to become Nationally Certified School Psychologists. This program addresses national shortages and is specifically designed to increase representation of School Psychologists in rural and underserved areas. 2) MS Clinical Mental Health Counseling: Clinical Mental Health Counseling for students preparing as counselors or therapists in settings such as: mental health centers, hospitals, residential treatment centers, employment services and vocational rehabilitation services. Clinical mental health counselors are also frequently found in the juvenile correction facilities, community colleges, pastoral

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services and business and industry. Counseling is one of the most sought-after graduate degrees. 3) MS Psychometry: The Master of Science in Psychometry is designed for individuals to achieve a position as a psychometrist; working in either a school or clinical setting. Under the direction of a licensed psychologist or certified school psychologist, a psychometrist is responsible for the administration and scoring of psychological, social/behavioral/personality, and neuropsychological measures and may aid in collection of background and social/developmental history information and test interpretation. This program is designed to provide the necessary coursework, training, and supervision to administer and score psychometric measures.

One graduate certificate (in collaboration with the School of Education):Social Emotional Learning for Equity Education: A multidisciplinary certificate for Social Emotional Learning (SEL) that helps to meet workforce needs for teachers to deliver SEL in accordance to Washington State's newly adopted SEL standards for K-12 students (k12.wa.us) . Courses and workshops provide for in-service needs for teachers through continuing education and/or a graduate certificate.

Three undergraduate Majors. 1) BA Psychology: The Bachelor of Arts program offers a solid background in research methods and statistics, a central set of core theory courses, and opportunities for focused, hands-on experiences in research and in the field. The program is shaped to meet unique interests through a broad set of electives. Key opportunities include active research lab groups for students and field. 2) BS Applied Developmental Psychology: The Bachelor of Science program prepares students for entry-level work and graduate study in a variety of developmental and human service careers. The program covers basic areas of human developmental psychology across the life span with a special focus on processes and principles of developmental change. Key opportunities include involvement in field study placements. 3) BS Health Psychology: The Health Psychology Bachelor of Science Program provides curriculum to support students in understanding ways that psychological, behavioral, and sociocultural factors relate to physical health. Students explore how patients interact with healthcare providers and the healthcare system in general. Key opportunities include field study at medical agencies and active preparation for work in the health care system.

Two undergraduate certificates: 1) Social Emotional Learning for Equity Education (in collaboration with the School of Education): A multidisciplinary certificate for Social Emotional Learning (SEL) that helps to meet workforce needs for teachers to deliver SEL in accordance to Washington State's newly adopted SEL standards for K-12 students. 2) Behavioral Health Support Specialist: The Behavioral Health Support Specialist Certificate offers students advanced training for work involving low-intensity psychological interventions with patients/clients who are managing low to moderate levels of psychological disorders such as depression and anxiety in healthcare settings. It is crafted to be an add-on credential for individuals majoring in the BS Health Psychology or the BA Psychology majors, and is open to other disciplines such as social work, nursing, or addiction studies. This is the first certificate of this model in the state and has been a focus of attention in the community.

Three undergraduate minors.: 1) Applied Developmental Psychology: Minors focus on courses in applied psychology, with particular emphasis on developmental considerations. 2) Industrial Organizational Psychology**:** Industrial and Organizational Psychology is an advancing area in psychology and offers great opportunity for collaboration with other majors (e.g., Business). 3)Psychology: Minors in psychology complete a course in introductory psychology along with 15 credits of coursework from concentration areas in psychology.

In addition to academic offerings, the majority of faculty in the School of Psychology are actively engaged in research and include undergraduate and graduate students in those research endeavors. Current faculty research labs include the following areas of focus: Autism and families, Training of school psychologists, Social emotional learning, MTSS for mental health in schools, Psychometrics, Cognitive psychology, Work-life balance, Distraction, Homeschool socialization, Practice effects, Perceptions of safety, Adjustment to Incarceration, Domestic abuse trauma and recovery, Psychology of stress, Psychosocial adjustment to physical and mental chronic health conditions, Internalized stigma, Facilitating student learning with physical and mental chronic health conditions, Perceived loneliness and social isolation with chronic health conditions,

Project Number: **40000113**
Project Title: **Martin - Williamson Hall**

Description

Successful aging, Life extension, Older adult well-being, DNA and maladaptive personality characteristics, COVID-19 and resilience, International difference in COVID response, Social cognition, Stereotypes, Health resource utilization, First impression biases, Self-perception biases, Compassion processes and impacts, Compassion Focused Therapy, Anger, Memory, Aging, Psychopathy, Correcting misconceptions and errors in knowledge, Sexual assault survivorship, Relational cultural theory, Trauma in counselor education contexts, Simultaneous supervision, Suicide prevention, Sports psychology, Gratitude and happiness, Cognitive assessment, Field supervision, and Developmental psychology.

Counseling and Wellness Services: Counseling activity in the 2021-22academic year:
1. our Counseling and Wellness staff averaged 507 counseling appointments per term (Quarters)
2. our Counseling and Wellness staff served 863 faculty/staff/students through outreach and training programs
3. our Accommodations staff averaged serving 731 students' pert term (Quarters)
4. our Student Support Services team engaged in outreach to 92 eligible Passport (former foster-youth) students
5. our Student Support Services team managed 882 student care cases requiring wrap-around support services

Non-state funds are not currently being considered for this project.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Facilities Master Plan - Objectives
1. Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2. Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3. Align facilities with academic purpose and need
4. Promote a campus environment that "feels like home" for EWU student
5. Coordinate with funding— "the plan must make sense"

The University has just embarked on an updated Comprehensive Campus Master Plan which will further inform the design as the plan is finalized in 2025. EWU is also in the midst of several other planning efforts and initiatives, including: Decarbonization Plan, Strategic Planning, Strategic Resource Allocation, Gender Inclusive Study, and multiple plans and initiatives to address sustainability on the campus.

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1. Carefully evaluate each project regarding renovation vs. replacement opportunities.
2. Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3. All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4. Improve the overall character of the campus with the implementation of each project.
5. Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6. Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
IT related cost development will be detailed and quantified in the design phase. The project will involve costs associated to updated data distribution, classroom and lab instruction technology, life safety and environmental controls.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including

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expenditure and FTE detail. See Chapter 12Puget Sound Recovery) in the 2021-23 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW19.27A.210, or other statewide goals to reduce carbon pollution and/or improve energy efficiency? Please elaborate.
All requirements of established RCW's, statewide goals and codes relating to renovation of Washington State Higher Education facilities will be met or exceeded. Sustainability and conservation are of the highest priority for the University. The programming and design of the renovated Martin/Williamson will reflect the highest standards and dedication to these university strategic goals. As outlined in the predesign for Martin Williamson and the Request for the Geothermal Plant– Node 1, this facility will be a key contributor to the larger plan of decarbonizing and reducing the EUI of the campus.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
School of Education: The new Professional Educator Standards Board(PESB)'s CCDEI (Cultural competency, diversity, equity, and inclusion)standards initiative include three that pertain directly to how this capital request for the School of Education supports a host of needs. An enhanced and updated School of Education would support the programs abilities to "include students, families, and communities as valued members of and contributors to the education community . . . create conditions that support partnerships and shared responsibility for learning [and] remove barriers to ensue each and every student experiences the full benefit of public education."

School of Psychology: The schools undergraduate and graduate programs are specifically crafted to support the needs of learners coming from diverse backgrounds. There are offerings for those considered traditional college students and individuals with other life factors that make the traditional full-time, day-time residential academic programs logistically difficult. This has been accomplished by having condensed meeting visits to campus for students while supplementing content through both synchronous and asynchronous virtual delivery modalities. For this reason, we require adequate and appropriate space to support that face-to-face teaching while also having classrooms and meeting spaces that support the most up-to-date technology and pedagogical practices.

Counseling and Wellness Services: Presently, student service offices are spread throughout campus and several of them have low visibility. With examination of student service space needs on campus, in an effort to reduce access barriers and meet student needs, it has become clear that a number of our facilities pose accessibility concerns, lack of confidentiality/privacy in the spaces that they occupy is significant, and the International Association of Counseling has highlighted that our desk space and group space are insufficient for our counseling efforts.
Seek to address the above and help ensure that our facilities/space:
1. address student frustration of having to navigate multiple buildings to complete one process
2. are student centered
3. allow us to effectively and efficiently cross-train capable staff
4. identifying and addressing outdated processes and approaches through collaboration of like function
5. are accessible for all

Is there additional information you would like decision makers to know when evaluating this request?
Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high

OFM

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Capital Project Request

2025-27 Biennium

*

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quality, student-centered education to a diverse population students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and promoting student success by supporting student engagement and timely degree completion.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).

This project may be eligible for Direct Pay and has been included on the attached Direct Pay Form

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.

NA

Location

City: Cheney **County:** Spokane **Legislative District:** 009

Project Type

Remodel/Renovate/Modernize (Major Projects)

Growth Management impacts

Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	153,490,000		366,000		12,566,000
	Total	**153,490,000**	**0**	**366,000**	**0**	**12,566,000**

		Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State	80,555,000	60,003,000		
	Total	**80,555,000**	**60,003,000**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

This project is a upgrade to an existing facility that already has operating resources assigned.

Capital Project Request

2025-27 Biennium

*

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000113	40000113
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Martin Williamson - Phase 1 (Alternate C)
OFM Project Number	40000113

Contact Information	
Name	Kris Jeske - EWU Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	71,478	MACC per Gross Square Foot	$749
Usable Square Feet	50,034	Escalated MACC per Gross Square Foot	$844
Alt Gross Unit of Measure			
Space Efficiency	70.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	9.51%
Remodel	Yes	Projected Life of Asset (Years)	50
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney
Contingency Rate	10%		
Base Month (Estimate Date)	September-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	September-23	Predesign End	May-24
Design Start	October-25	Design End	June-27
Construction Start	August-27	Construction End	April-29
Construction Duration	20 Months		

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Project Cost Summary

Total Project	$78,576,479	Total Project Escalated	$88,200,271
		Rounded Escalated Total	$88,200,000

Amount funded in Prior Biennia	**$281,000**
Amount in current Biennium	**$8,071,000**
Next Biennium	**$79,971,000**
Out Years	**-$123,000**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$281,446		
Design Phase Services	$3,864,336		
Extra Services	$1,362,000		
Other Services	$1,816,151		
Design Services Contingency	$732,393		
Consultant Services Subtotal	**$8,056,326**	**Consultant Services Subtotal Escalated**	**$8,731,833**

Construction			
Maximum Allowable Construction Cost (MACC)	$53,536,820	Maximum Allowable Construction Cost (MACC) Escalated	$60,348,658
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$5,353,682		$6,049,126
Non-Taxable Items	$267,684		$302,457
Sales Tax	$5,265,145	Sales Tax Escalated	$5,936,397
Construction Subtotal	**$64,423,332**	**Construction Subtotal Escalated**	**$72,636,638**

Equipment			
Equipment	$3,037,815		
Sales Tax	$270,366		
Non-Taxable Items	$0		
Equipment Subtotal	**$3,308,181**	**Equipment Subtotal Escalated**	**$3,737,915**

Artwork			
Artwork Subtotal	**$438,807**	**Artwork Subtotal Escalated**	**$438,807**

Agency Project Administration			
Agency Project Administration Subtotal	$2,349,834		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$2,349,834**	**Project Administration Subtotal Escalated**	**$2,655,078**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$78,576,479**	Total Project Escalated	**$88,200,271**
		Rounded Escalated Total	**$88,200,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$8,731,833	$281,446	$6,442,235	$2,052,069	**-$43,917**
Construction					
Construction Subtotal	$72,636,638			$73,112,861	**-$476,223**
Equipment					
Equipment Subtotal	$3,737,915			$3,762,394	**-$24,479**
Artwork					
Artwork Subtotal	$438,807				**$438,807**
Agency Project Administration					
Project Administration Subtotal	$2,655,078		$1,628,320	$1,044,146	**-$17,388**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$88,200,271**	**$281,446**	**$8,070,555**	**$79,971,470**	**-$123,200**
	$88,200,000	**$281,000**	**$8,071,000**	**$79,971,000**	**-$123,000**
		Percentage requested as a new appropriation	**9%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)

Full Building Design Services (Phase 1 and Phase 2 Consultant Services)

(Note: Phase 2 design services is included in Phase 2 -C100)

What has been completed or is underway with a previous appropriation?

Predesign Services were retained in 2023-2025 Biennium

What is planned with a future appropriation?

2027-2029 Phase 1 Construction/Closeout Services

2029-2031 Phase 2 Construction - (See Phase 2 - C100)

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$0				
Appraisal and Closing	$0				
Right of Way	$0				
Demolition	$0				
Pre-Site Development	$0				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$281,446			
Other				
Insert Row Here				
Sub TOTAL	**$281,446**	**1.0354**	**$291,410**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$3,864,336			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$3,864,336**	**1.0640**	**$4,111,654**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$150,000			
Geotechnical Investigation	$50,000			
Commissioning	$150,000			
Site Survey	$30,000			
Testing	$150,000			
LEED Services	$90,000			
Voice/Data Consultant	$75,000			
Value Engineering	$90,000			
Constructability Review	$80,000			
Environmental Mitigation (EIS)	$35,000			
Landscape Consultant	$50,000			
NREC (Third Party Certification)	$12,000			3rd Party Req by local AHJ
Experiential Graphics	$150,000			
Acoustical Engineering	$25,000			
ELCCA	$35,000			
LCCA	$40,000			
Historical Consultant	$50,000			Assumed Significance
Haz Mat Assesment	$60,000			Under Owner
Record/Phase 1 Update	$40,000			
Sub TOTAL	**$1,362,000**	**1.0640**	**$1,449,168**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,736,151			31% of A/E Basic Services
HVAC Balancing	$80,000			
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$1,816,151**	**1.1299**	**$2,052,069**	Escalated to Mid-Const.

5) Design Services Contingency				
Design Services Contingency	$732,393			
Other				
Insert Row Here				
Sub TOTAL	**$732,393**	**1.1299**	**$827,532**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$8,056,326**		**$8,731,833**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$295,497			
G20 - Site Improvements	$295,245			
G30 - Site Mechanical Utilities	$153,090			
G40 - Site Electrical Utilities	$420,000			
G60 - Other Site Construction	$137,500			
Design Contingency	$260,266			
Contractor Mark-Up	$93,696			
Sub TOTAL	**$1,655,294**	**1.0994**	**$1,819,831**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Full Building Demolition	$2,280,000			
Shoring Existing Historic Façade	$740,000			
Sub TOTAL	**$3,020,000**	**1.0994**	**$3,320,188**	
3) Facility Construction				
A10 - Foundations	$1,508,137			
A20 - Basement Construction	$0			
B10 - Superstructure	$4,494,742			
B20 - Exterior Closure	$4,616,977			
B30 - Roofing	$767,624			
C10 - Interior Construction	$4,921,975			
C20 - Stairs	$140,000			
C30 - Interior Finishes	$3,181,807			
D10 - Conveying	$225,000			
D20 - Plumbing Systems	$2,246,631			
D30 - HVAC Systems	$7,212,100			
D40 - Fire Protection Systems	$456,500			
D50 - Electrical Systems	$5,752,498			
F10 - Special Construction	$828,750			
F20 - Selective Demolition	$0			
General Conditions	$1,500,000			
CFCI E10 Equipment	$45,000			
CFCI E20 Casework & Furnishings	$836,163			
Design Contingency	$7,446,781			
Contractor Mark-Up	$2,680,841			
Sub TOTAL	**$48,861,526**	**1.1299**	**$55,208,639**	
4) Maximum Allowable Construction Cost				

MACC Sub TOTAL	**$53,536,820**		**$60,348,658**	
	$749		*$844 per GSF*	
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7) Owner Construction Contingency				
Allowance for Change Orders	$5,353,682			
Other				
Insert Row Here				
Sub TOTAL	**$5,353,682**	**1.1299**	**$6,049,126**	
8) Non-Taxable Items				
Building Permit 0.5%	$267,684			
Insert Row Here				
Sub TOTAL	**$267,684**	**1.1299**	**$302,457**	
9) Sales Tax				
Sub TOTAL	**$5,265,145**		**$5,936,397**	
CONSTRUCTION CONTRACTS TOTAL	**$64,423,332**		**$72,636,638**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment	$696,910				
E20 - Furnishings	$1,624,695				
F10 - Special Construction					
Telecom/ Networking	$436,016				
Custodial Equip/ Supplies	$280,194				
Insert Row Here					
Sub TOTAL	**$3,037,815**		**1.1299**	**$3,432,428**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.1299**	**$0**	
3) Sales Tax					
Sub TOTAL	**$270,366**			**$305,487**	
EQUIPMENT TOTAL	**$3,308,181**			**$3,737,915**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$438,807				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$438,807**		**NA**	**$438,807**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$2,349,834				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$2,349,834**		**1.1299**	**$2,655,078**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0994**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Building is largely replacementl; however, goal is to maintain historic façade in front of new construciton. Little building
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Martin Williamson - Phase 2 (Alternate C)
OFM Project Number	40000113

Contact Information	
Name	Kris Jeske - EWU Director Of Construction & Planning
Phone Number	509-359-6565
Email	Kjeske1@ewu.edu

Statistics			
Gross Square Feet	52,897	MACC per Gross Square Foot	$701
Usable Square Feet	37,028	Escalated MACC per Gross Square Foot	$845
Alt Gross Unit of Measure			
Space Efficiency	70.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	9.94%
Remodel	Yes	Projected Life of Asset (Years)	50
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney
Contingency Rate	10%		
Base Month (Estimate Date)	September-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	September-23	Predesign End	May-24
Design Start	October-25	Design End	June-27
Construction Start	August-29	Construction End	April-31
Construction Duration	20 Months		

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Project Cost Summary

Total Project	$54,463,513	Total Project Escalated	$65,082,273
		Rounded Escalated Total	$65,082,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$4,495,000**
Next Biennium	**$584,000**
Out Years	**$60,003,000**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$2,796,512		
Extra Services	$837,000		
Other Services	$1,336,404		
Design Services Contingency	$496,992		
Consultant Services Subtotal	**$5,466,907**	**Consultant Services Subtotal Escalated**	**$6,078,050**

Construction			
Maximum Allowable Construction Cost (MACC)	$37,067,087	Maximum Allowable Construction Cost (MACC) Escalated	$44,681,658
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$3,706,709		$4,472,145
Non-Taxable Items	$0		$0
Sales Tax	$3,628,930	Sales Tax Escalated	$4,374,764
Construction Subtotal	**$44,402,726**	**Construction Subtotal Escalated**	**$53,528,567**

Equipment			
Equipment	$2,248,122		
Sales Tax	$200,083		
Non-Taxable Items	$0		
Equipment Subtotal	**$2,448,205**	**Equipment Subtotal Escalated**	**$2,953,761**

Artwork			
Artwork Subtotal	**$323,792**	**Artwork Subtotal Escalated**	**$323,792**

Agency Project Administration			
Agency Project Administration Subtotal	$1,821,884		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$1,821,884**	**Project Administration Subtotal Escalated**	**$2,198,103**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$54,463,513**	Total Project Escalated	**$65,082,273**
		Rounded Escalated Total	**$65,082,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$6,078,050		$4,495,038		**$1,583,012**
Construction					
Construction Subtotal	$53,528,567				**$53,528,567**
Equipment					
Equipment Subtotal	$2,953,761				**$2,953,761**
Artwork					
Artwork Subtotal	$323,792				**$323,792**
Agency Project Administration					
Project Administration Subtotal	$2,198,103			$584,176	**$1,613,927**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$65,082,273**	**$0**	**$4,495,038**	**$584,176**	**$60,003,059**
	$65,082,000	**$0**	**$4,495,000**	**$584,000**	**$60,003,000**
		Percentage requested as a new appropriation	**7%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)

Full Building Design Services (Phase 1 and Phase 2 Consultant Services)
(Note: Phase 1 design services is included in Phase 1 -C100)

What has been completed or is underway with a previous appropriation?

Predesign Services are reflected in Phase 1 Documentation

What is planned with a future appropriation?

2027-2029 Phase 1
Construction/Closeout Services (See
Phase 1 - C100)
2029-2031 Phase 2 Construction/Closeout Services

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$0				
Appraisal and Closing	$0				
Right of Way	$0				
Demolition	$0				
Pre-Site Development	$0				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0354**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$2,796,512			69% of A/E Basic Services
Insert Row Here				
Sub TOTAL	**$2,796,512**	**1.0640**	**$2,975,489**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$150,000			
Geotechnical Investigation				
Commissioning	$150,000			
Site Survey				
Testing	$150,000			
LEED Services	$90,000			
Voice/Data Consultant	$75,000			
Value Engineering	$90,000			
Constructability Review				
Environmental Mitigation (EIS)	$35,000			
Landscape Consultant	$50,000			
NREC (Third Party Certification)	$12,000			
Historial Consultant				
Record Drawings	$35,000			
Sub TOTAL	**$837,000**	**1.0640**	**$890,568**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,256,404			31% of A/E Basic Services
HVAC Balancing	$80,000			
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$1,336,404**	**1.2065**	**$1,612,372**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$496,992			
Other				

Insert Row Here				
Sub TOTAL	**$496,992**	**1.2065**	**$599,621**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$5,466,907**		**$6,078,050**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$313,043			
G20 - Site Improvements	$316,595			
G30 - Site Mechanical Utilities	$192,710			
G40 - Site Electrical Utilities	$140,000			
G60 - Other Site Construction	$0			
Design Contingency	$192,470			
Contractor Mark-Up	$69,289			
Sub TOTAL	**$1,224,107**	**1.1740**	**$1,437,102**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1740**	**$0**	
3) Facility Construction				
A10 - Foundations	$1,153,504			
A20 - Basement Construction	$0			
B10 - Superstructure	$3,320,779			
B20 - Exterior Closure	$3,923,050			
B30 - Roofing	$568,314			
C10 - Interior Construction	$3,718,501			
C20 - Stairs	$215,000			
C30 - Interior Finishes	$2,396,006			
D10 - Conveying	$225,000			
D20 - Plumbing Systems	$1,435,890			
D30 - HVAC Systems	$4,409,062			
D40 - Fire Protection Systems	$291,763			
D50 - Electrical Systems	$4,070,256			
F10 - Special Construction	$610,650			
F20 - Selective Demolition	$0			
General Conditions	$1,500,000			
CFCI E10 Equipment	$35,000			
CFCI E20 Casework & Furnishings	$626,425			
Design Contingency	$5,399,840			
Contractor Mark-Up	$1,943,942			
Sub TOTAL	**$35,842,980**	**1.2065**	**$43,244,556**	
4) Maximum Allowable Construction Cost				

MACC Sub TOTAL	**$37,067,087**		**$44,681,658**	
	$701		*$845 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$3,706,709			
Other				
Insert Row Here				
Sub TOTAL	**$3,706,709**	**1.2065**	**$4,472,145**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.2065**	**$0**	
9) Sales Tax				
Sub TOTAL	**$3,628,930**		**$4,374,764**	
CONSTRUCTION CONTRACTS TOTAL	**$44,402,726**		**$53,528,567**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment	$515,746				
E20 - Furnishings	$1,202,348				
F10 - Special Construction					
Telecom/ Networking	$322,672				
Custodial Equip/ Supplies	$207,356				
Insert Row Here					
Sub TOTAL	**$2,248,122**		**1.2065**	**$2,712,360**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.2065**	**$0**	
3) Sales Tax					
Sub TOTAL	**$200,083**			**$241,401**	
EQUIPMENT TOTAL	**$2,448,205**			**$2,953,761**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$323,792				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$323,792**		**NA**	**$323,792**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$1,821,884				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$1,821,884**		**1.2065**	**$2,198,103**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1740**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

Availability of Space/Campus Utilization Template

Project name:	Martin-Williamson Hall	CBS/OFM Project #:	40000113
Institution:	Eastern Washington University	Category:	Renovation Major
Campus/Location:	Cheney, WA		

Enrollment

2023 fall on-campus student FTE:	8,680	Expected 2024 fall on-campus student FTE:	8,246
		% increase budgeted:	-5.00%

Enter the average number of hours per week each for (a) classroom seat and (b) classroom lab is expected to be utilized in Fall 2024 for the campus where the project is located.

(a) General University Classroom Utilization		(b) General University Lab Utilization	
Fall 2023 Weekly Contact Hours	60,425	Fall 2023 Weekly Contact Hours	11,565
Multiply by % FTE Increase Budgeted	-5.00%	Multiply by % FTE Increase Budgeted	-5.00%
Expected Fall 2024 Contact Hours	57,404	Expected Fall 2024 Contact Hours	10,987
Expected Fall 2024 Classroom Seats	6,415	Expected Fall 2024 Class Lab Seats	996
Expected Hours per Week Utilization	**8.9**	**Expected Hours per Week Utilization**	**11.0**
HECB utilization standard (hours/GUC seat)	22.0	HECB utilization standard (hour/GUL seat)	16.0
Difference in utilization standard	-59.3%	Difference in utilization standard	-31.1%

If the campus does not meet the 22 hours per classroom seat and/or the 16 hours per class lab HECB utilization standards, describe any institutional plans for achieving the utilization standard.

Eastern Washinton University finds itself in a similar situation as so many other Universities around the nation in a post-pandemic environment. During this time while the focus needs to remain on increasing enrollment, it is vitally important to invest in current facilities so that they continue to serve students, do not fall into disrepair, and are designed to meet future demands, technologies, and teaching pedagogies. In order to achieve this, EWU has embarked on a number of studies to best determine future actions which may range from strategic investment in facilities and/or contracting in others. Some of that work is summarized below.

SRA - In 2022, the University began a Strategic Resource Allocation (SRA) process which entailed a systematic, collaborative, and transparent process to examine the ways resources are being invested. As a regional comprehensive university, it is EWU's goal to ensure that academic programs are best aligned to meet regional workforce needs, and university services aligned in such a manner as to ensure the student experience is meaningful and campus resources are efficient, effective, and sustainable. The process culminated in 2024 and measures are being put into place to make the University as efficient as possible, including physical improvements, consolidation, and/or reductions where facilities are no longer effectively serving the University.

Strategic Planning – Eastern Washington University is in the process of a Strategic Planning effort to guide the direction and growth of Eastern Washington University. By systematically assessing strengths, weaknesses, opportunities, and threats, EWU will articulate a clear vision for the future and establish well-defined goals. This process enables the University to align its resources, expertise, research endeavors, and educational programs effectively.

CCMP – EWU has just started the process to develop a Comprehensive Campus Master Plan (CCMP) to replace the previous plan that was completed in 2014. Recognizing the unique character, current physical and financial conditions, program and space needs, and growth during the past 10 years and projected into the future, the CCMP will be a guiding document to inform decisions for the next 10 years regarding development, growth, consolidation, etc. This document will include and be informed by numerous other studies that are recently completed or underway: SRA, Strategic Plan, Decarbonization Plan, Climate Resiliency and Sustainability, CCMP, Geothermal Studies, Housing Plan, Currently Planned Construction and Renovation Projects, and Predesign Studies.

Reasonableness of Cost Template

Project name:	Martin Williamson Hall Predesign	CBS/OFM Project #:	40000113
Institution:	Eastern WA University	Category:	Renovation - Major
Campus/Location:	Cheney, WA		

	Construction Begin	Construction End	Construction mid-point	Escalation Multiplier
Construction mid-point:	August-27	June-31	July-29	1.5902

MACC from C-100: $90,603,907 unescalated

	Expected MACC/GSF in 2019	Expected MACC/GSF	GSF by type	Expected MACC
Classrooms	$405	$644	41,068	$26,449,065
Instructional labs	$397	$631	6,429	$4,058,688
Research labs	$545	$867	11,456	$9,928,446
Administration	$406	$646	48,427	$31,265,498
Libraries	$340	n/a	-	
Athletic	$385	n/a	-	
Assembly, exhibit and meeting rooms	$428	$681	16,995	$11,566,892
			124,375	$83,268,589

C-100 to expected MACC variance: 109%

NOTE: The above information reflects total project build out and schedule of the proposed Phase 1 and Phase 2 of this predesign report.

Efficiency of space allocation. For each major function in the proposed facility (classroom, instructional labs, offices), identify whether space allocations will be consistent with the Facility Evaluation and Planning Guide (FEPG) assignable square feet standards. If any proposed allocations exceed FEPG standards, explain the alternative standard that has been used and why.

Example: efficiency of space allocation – FEPG standard

FEPG room classification number	FEPG room classification type	Project ASF per station	FEPG standard	Meets standard (Y/N)	Comments
110	Classroom	34	16-26	N	Exceeds standards due to programmatic need for demonstration space & flexibility
110	Classroom	44	16-26	N	Exceeds standards due to programmatic need for flexibility of room configuration
110	Classroom	30	16-26	N	Exceeds standards due to programmatic need for flexibility of room configuration
210	Class Lab – Natural Sciences	50	25-70	Y	
210	Class Lab – Library Science	48	30-40	N	Exceeds standards due to programmatic need for demonstration space
215	Class Lab – Services	-		N/A	Sized appropriately to serve two labs.
250	Research Lab	57		N/A	Sized for research program needs.
250	Research Lab	60		N/A	Sized for research program needs.
255	Research Lab – Service	-		N/A	Sized appropriately to serve research labs.
311	Academic Office	120	140	N	Sligthly less than standard, response to existing façade constraints - target meeting standard where possible should design progress
312	Administrative Office	200	175	N	Exceeds standards to accommodate departmental meeting needs
313	Student Assistants	200 per 6	140 per 2 min.	N	Less than standard, space is not used concurrently by all student assistants
314	Secretarial/ Clerical Office	140	140	Y	
315	Office Service	100	100	Y	2 FTEs
316 & 317	Staff & other office	120	120	Y	
540	Clinic	60		N/A	Sized appropriately to serve group sessions and individual sessions
545	Clinic Service	-		N/A	Sized appropriately to support clinic functions
550	Demonstration	30		N/A	Sized appropriately for program needs
550	Demonstration Service	-		N/A	Sized appropriately for program needs
610	Auditorium/ Lecture Hall	21	15-16	N	Additional SF needed to meet ADA requirements due to site conditions
610	Auditorium/ Lecture Hall	18	15-16	N	Additional SF needed to meet ADA requirements due to site conditions
680	Meeting Room	39		N/A	Sized to appropriately to serve programmatic need and flexibility.
800	Health Care Facilities			N/A	Sized appropriately for program needs

Identify the (a) assignable square feet in the proposed facility; (b) the gross square feet; and (c) the net building efficiency ("a" divided by "b").

72,805 ASF / 124,375 GSF = 58.5% Net Efficiency

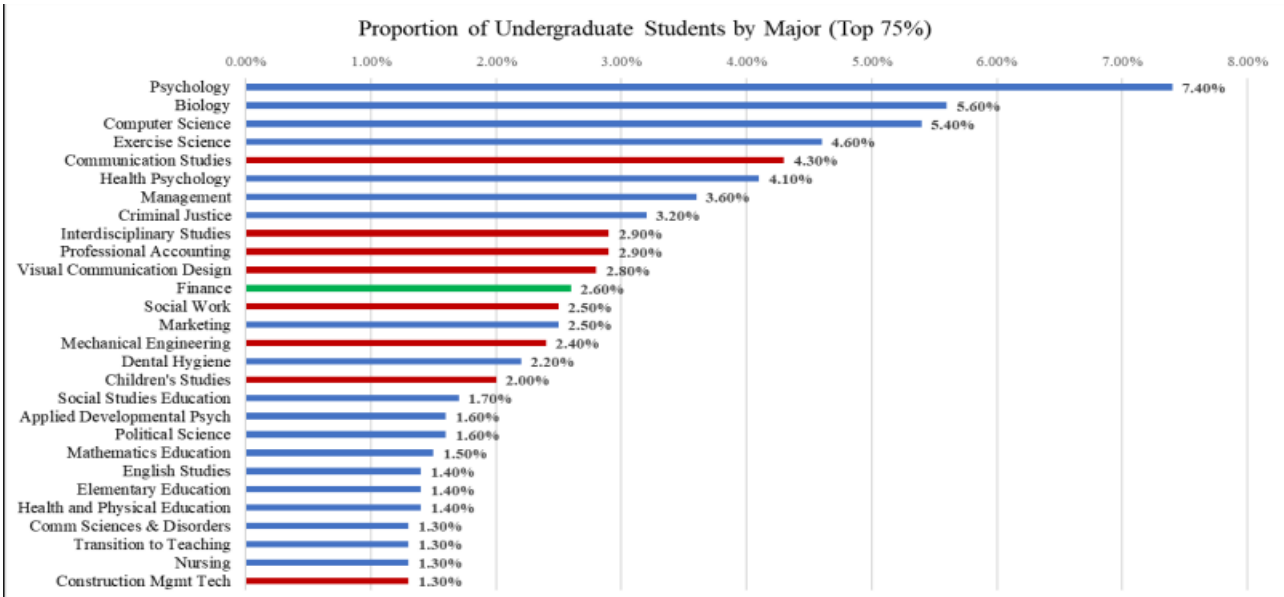
Instructions:
Provide the facility's condition score (1 superior – 5 marginal functionality) from the 2016 Comparable Framework study, and summarize the major structural and systems conditions that resulted in that score. Provide selected supporting documentation in appendix, and reference them in the body of the proposal.

Narrative Response:
The existing facility condition score is 3.0. The current deficiencies include: Poor energy performance and building envelope, failing mechanical systems that are at the end of their useful life, inadequate lighting to meet educational standards, IT and AV infrastructure no longer supports current teaching or learning styles, the existing concrete structure no longer meets basic seismic requirements and requires significant upgrades, the structural layout/grid is not conducive to current classroom sizes or teaching environments, toilet facilities do not meet current accessibility standards, stair handrails do not meet code requirements, and most of the building finishes are in need of replacement.

Instructions:
Identify the estimated number of additional FTE students the project is expected to enable the institution to serve when the space is fully occupied. Describe the method by which additional FTEs are calculated, including an analysis of probable student enrollment demand from project completion to full occupancy. Also provide an estimate of the number of additional FTE enrollments in high-demand fields and the fields in which such growth is expected to occur.

Per RCW 43.88D.010(1)(a), growth projects must also demonstrate that they can more cost- effectively provide enrollment access than alternatives such as university centers and distance learning.

Narrative Response:
EWU's psychology and education departments have historically been two of the most robust programs on campus. As noted in the chart below, the demand for psychology majors in Spokane County is the highest of the majors listed, and both phychology and teaching are in the top 15 majors for demand. The newly renovated facility will accommodate more FTE students, primarily due to efficiency and the effective layout of space. In addition to FTE students in academic fields, the facilty will also accommodate Counseling and Wellness as well as the Student Accommodatinos and Support Services (who are not currently located in the building). The demand for mental health services and access to mental health providers has increased exponentially post-covid. Creating new, efficient, and welcoming spaces to meet students where their needs are is more important than ever and one of the goals of this facility. While it is difficult to project the number of students who will be served in the building, it is certain that the programs will grow as the local demand continues to increase.



Blue Bar – Corelates to a top 15 in-demand major, or Healthcare field, in Spokane County
Green Bar – 50% mark

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Capital Project Request

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:20PM

Project Number: **40000159**
Project Title: **Computer Engineering Building - Decarbonization**

Description

Project Phase Title: Design & Construction
Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 6

Project Summary

The Computer Engineering Building is a preservation project that is one component of EWU's overall strategy to decarbonize the campus and comply with House Bill 1390. HB 1390 dictates that the campus must achieve a combined EUI of 112 kBtu/sf/yr. This individual project would replace an inefficient mechanical system, connect to a future Geothermal Plant, and repair or replace building controls and lighting components to improve energy efficiency.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

In 2019 the Clean Buildings Performance Standard (CBPS) was established, requiring the Department of Commerce to establish rules for energy performance standards for commercial buildings. Through the reduction of building energy usage, the performance standard seeks to maximize reductions in greenhouse gas emissions from the built environment. The performance standard includes energy use intensity targets by building type, as well as requirements for an energy management plan, operations and maintenance program, energy efficiency audits, and investments in energy efficiency measures. The adoption of HB1390 for campuses utilizing district heating and cooling systems, such as Eastern Washington University, created a pathway for even greater reductions in greenhouse gas emissions by focusing on phasing out the use of fossil fuels to generate steam for campus wide heating.

Opportunity - To reduce greenhouse gas emissions, reduce building Energy Use Intensity (EUI), comply with HB 1390and(CBPS), support the EWU decarbonization plan (currently being drafted), and to reduce the overall campus energy and operating costs.

Priority – This is a high priority project that is integrally linked and dependent on the Geothermal Node Plant that is being submitted as a separate capital budget request. Supported and justified by multiple studies noted below, this project along with the Geothermal Plant was found to be the most effective approach in addressing decarbonization and energy use for the University while also extending the life of existing, aging facilities. Other supporting studies, attached to this request or submitted separately in EWU's 25/27 budget request, include: Ground Source Heat Pump Feasibility Study, EWU Hydrogeologic Evaluation, Martin-Williamson Predesign, Civil Engineering Building – Applied Engineering Predesign, Lucy Covington Center Predesign, Geothermal Plant – Node 1 report, EWU Decarbonization Plan, and Energy Audits for existing buildings proposed to be connected to the Geothermal Plant (study underway).

Underserved people / communities –Eastern Washington University continues to provide opportunities for underserved and diverse populations. More than 1 in 3 students are from diverse backgrounds, 44% are the first in their family to attend college, and Eastern offers one of the most affordable and accessible educations from a 4-year university. In addition, it is well documented that climate change impacts underserved and low-income communities the hardest of all. This project will support underserved populations locally and on a long-term basis globally by lessening the impacts of human caused climate change.

Operating budget savings – This individual project will help to reduce operating costs by lowering energy consumption and by replacing aging equipment with newer systems. See attached studies for more in-depth analysis and how this project is related to other proposed projects on campus.

Public safety improvements – It will serve to improve the safety and longevity of the existing building, and more importantly help to reduce the long-term impacts of climate change. This region is experiencing records setting temperatures and more intense wildfires year after year, including an evacuation notice due to local fires in 2023. If meaningful steps aren't taken to curb the impacts of climate change, conditions will continue to worsen for future generations.

Clarifying details – In summary, this project is part of a larger initiative to reduce energy use and carbon emissions on the campus by transitioning from burning fossil fuels (natural gas) to ground source heat pump technology (electric). As the new

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Project Title: Computer Engineering Building - Decarbonization

Description

Geothermal Plant – Node 1 comes on-line, this existing building would then be connected to that system along with other energy efficient measures.
Current condition of the facility/ system – The current building was constructed in 2005 and has been well maintained. Simply due to age, the mechanical systems are nearing the end of their useful life and will require ever increasing maintenance and eventual replacement.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the projec start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
This project will entail design and construction to replace aging and obsolete mechanical equipment within the existing Computer Engineering Building that was constructed in 2005, changing the primary heating source from steam (natural gas fired boilers) to ground source heat pumps (electric), and will tie to the proposed Geothermal Plant –Node 1.
Design is anticipated to begin in Sept. 2025, construction would begin in Nov. 2026, and substantial completion would be anticipated for the Summer of 2027.
While design and construction of this individual building cannot be phased, this project is one component of a larger campus decarbonization plan related to the completion of the Geothermal Plant – Node 1. Once Geothermal Plant –Node 1 is operational, individual buildings could be added in a staggered approach.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Not taking action would result in the continued use of a less efficient heating & cooling system that is nearing it's useful end of life, higher operating and maintenance costs of an aging system, not complying with state legislation that requires public institutions to reduce energy use and carbon emissions, potential fines for not complying with the state and federal energy performance standards (anticipated by 2027), requiring increased future costs due to construction escalation, and contributing to continuing and increasing impacts of climate change – both locally and globally.
If approved, this request would directly contribute to the requirement of meeting increasing energy efficiency performance standards and reducing greenhouse gas emissions to levels established by the State of WA, Dept. of Commerce, and Dept. of Ecology. It would also move EWU closer to meeting the University's long-term planning and sustainability goals.
What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
In the attached and related reports, systems other than geothermal ground source heat pumps were explored. Alternate systems evaluated include1) existing system - gas fired boilers to produce steam, 2) using renewable natural gas to fuel existing boilers, and 3) VRF – Variable Refrigerant Flow systems that use air to air heat pump technology. More detail can be found in the reports, but to summarize the findings for each system:
1) Existing gas fired boilers –This system would result in no changes, no added upfront costs, and it would not address any of the problems or meet state energy use requirements.
2) Using renewable natural gas instead of more commonly available utility provided natural gas – While possible in theory, this resource is not feasible or affordable in the quantity required to heat the campus. If the renewable gas were available, current pricing would be approximately (10) times the current utility rate costs.
3) Switching individual buildings to VRF systems – This system could be used to heat and cool buildings, however it increases maintenance and operations costs substantially, components would be completely decentralized and less energy efficient, it would require area increases in each of the buildings to house additional equipment, air to air heat pumps can be problematic during the colder months in the eastern Washington climate, and mechanical equipment has a much shorter lifespan.
The recommendation of geothermal ground source heat pumps was chosen because it was the most effective system to address the problems on a long-term basis, it would allow the most reuse of existing campus infrastructure, it is the most energy efficient and would result in the largest decrease of carbon emissions, it would require the least amount of ongoing maintenance, and it would provide the most opportunity to incorporate into academic programs (Mechanical Engineering,

Project Number: **40000159**
Project Title: **Computer Engineering Building - Decarbonization**

Description

Electrical Engineering, Sustainability, etc.) to leverage student learning opportunities and increase public awareness and acceptance of sustainability.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The largest impact would be on the University maintenance staff. Replacing aging equipment would lessen initial maintenance costs at each of the individual buildings, however these savings would be traded for related effort to operate the Geothermal Plant – Node 1. Overall, there would be a need to add some maintenance and operation staff for the new central plant (outside of this individual project).
Students and faculty would be served by this project through the incorporation of the facility and technology into academic programs.
The community would be served on an individual level by the awareness raised from the project and on a larger scale by the reduction in energy use and climate related impacts.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share of project cost allowable and the supporting citation or documentation.
There may be opportunities to apply available federal energy incentives to this project, however that will not be fully known until the system has been designed and communicated to those potential sources of funding.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project will support the University's strategic plan, comprehensive campus master plan (in progress), climate action plan, decarbonization plan (in progress), and the various studies, reports, and predesigns that have been mentioned above or are attached for reference. Ultimately, this will reduce the University's energy use, carbon emissions, and operating costs, while supporting the mission, values, and long-term plans for EWU.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
This project does not include IT specific costs, however there are tangential costs associated with energy management systems and building controls that will be coordinated with the IT department and are incorporated into the current estimate. See attached EWU decarbonization report for more detail. Final, updated costs will be refined further in design.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
As mentioned, this project is a result of and directly contributes to the statewide goals mentioned above with the sole purpose of reducing greenhouse gas emissions, energy use, and to improve building energy performance. See attached studies and reports for specific details and anticipated results. Final results will be determined when the project is fully designed and incrementally introduced to the campus system.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Being a state-owned facility, this project would help my modernizing the building inventory and by reducing costs related to

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Description

energy use, building operation, and maintenance. It would also help the state meet mandated energy goals and serve as an example of responsible use of state funds. Positive impacts and savings will be compounded as the cost of energy and more importantly the impacts of climate change continue to escalate locally, regionally, and globally.
The project directly serves the EWU campus and students and will be leveraged to support current academic programs and learning opportunities.
Local and state economic impacts will be realized by the engineering and construction industries that will be positively impacted through the creation of jobs and the growth of technologies related to sustainability and energy efficiency.

Is there additional information you would like decision makers to know when evaluating this request?
This project is the result and one component of a comprehensive effort to research, plan, and implement options for the most effective, economically viable, and technologically feasible way to achieve the energy performance goals of the state while meeting the mission and values of Eastern Washington University. It is directly linked to the Geothermal Plant – Node 1, which would need to be constructed prior to the recommended improvements requested within this project.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
This project may be eligible for Direct Pay and has been included on the attached Direct Pay Form

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Spokane **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
There are no growth management impacts, the project is located on the existing Eastern Washington University Campus.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
26C-1	Climate Commit Accou-State	4,751,000				4,751,000
	Total	**4,751,000**	**0**	**0**	**0**	**4,751,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
26C-1	Climate Commit Accou-State				
	Total	**0**	**0**	**0**	**0**

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Project Title: Computer Engineering Building - Decarbonization

Operating Impacts

No Operating Impact

Capital Project Request

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000159	40000159
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Computer and Engineering Bldg - Decarbonization
OFM Project Number	40000159

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	54,902	MACC per Gross Square Foot	$49
Usable Square Feet	54,902	Escalated MACC per Gross Square Foot	$50
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	12.59%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

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Project Cost Summary

Total Project	$4,671,292	Total Project Escalated	$4,751,135
		Rounded Escalated Total	$4,751,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$4,751,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$276,515		
Extra Services	$101,000		
Other Services	$106,000		
Design Services Contingency	$48,351		
Consultant Services Subtotal	**$531,866**	**Consultant Services Subtotal Escalated**	**$534,383**

Construction			
Maximum Allowable Construction Cost (MACC)	$2,677,243	Maximum Allowable Construction Cost (MACC) Escalated	$2,720,883
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$777,382		$790,054
Non-Taxable Items	$108,854		$110,629
Sales Tax	$307,462	Sales Tax Escalated	$322,324
Construction Subtotal	**$3,870,941**	**Construction Subtotal Escalated**	**$3,943,890**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$268,486		
Project Administration Subtotal	**$268,486**	**Project Administration Subtotal Escalated**	**$272,863**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$4,671,292**	Total Project Escalated	**$4,751,135**
		Rounded Escalated Total	**$4,751,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$534,383		$534,383		**$0**
Construction					
Construction Subtotal	$3,943,890		$3,943,890		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$272,863		$272,863		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$4,751,135**	**$0**	**$4,751,136**	**$0**	**-$1**
	$4,751,000	**$0**	**$4,751,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$300,107			69% of A/E Basic Services
Other - ESCO Design Fee	$276,515			
A/E Basic Design Services Auto-Populate Correction	-$300,107			Does not fit ESCO model
Sub TOTAL	**$276,515**	**1.0000**	**$276,515**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$85,000			
Site Survey				
Testing	$16,000			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$101,000**	**1.0000**	**$101,000**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$134,831			31% of A/E Basic Services
HVAC Balancing	$26,000			
Staffing				
Other - Site Supervision	$80,000			
Bid/Construction/Closeout Auto-Populate Correction	-$134,831			Does not fit ESCO model
Sub TOTAL	**$106,000**	**1.0163**	**$107,728**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$48,351			
Other				

Insert Row Here				
Sub TOTAL	**$48,351**	**1.0163**	**$49,140**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$531,866**		**$534,383**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems	$81,400			
D30 - HVAC Systems	$1,566,275			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$283,295			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$365,921			
Other Direct Cost - Lighting & Lighting Controls	$289,279			
ODCs & Bond	$91,073			
Insert Row Here				
Sub TOTAL	**$2,677,243**	**1.0163**	**$2,720,883**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$2,677,243**		**$2,720,883**	
	$49		*$50 per GSF*	
	This Section is Intentionally Left Blank			
7) Owner Construction Contingency				
Allowance for Change Orders	$267,724			
Other - ESCO OH&P	$509,658			
Insert Row Here				
Sub TOTAL	**$777,382**	**1.0163**	**$790,054**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$41,154			
DES Fee	$67,700			
Insert Row Here				
Sub TOTAL	**$108,854**	**1.0163**	**$110,629**	
9) Sales Tax				
Sub TOTAL	**$307,462**		**$322,324**	
CONSTRUCTION CONTRACTS TOTAL	**$3,870,941**		**$3,943,890**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$23,756				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$23,756				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$169,886				
Agency Project Management (2.5%)	$98,600				
Subtotal of Other	*$268,486*				
PROJECT MANAGEMENT TOTAL	**$268,486**		**1.0163**	**$272,863**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

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Report Number: CBS002
Date Run: 9/10/2024 12:21PM

Project Number: **40000161**
Project Title: **Art Complex - Decarbonization**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 7

Project Summary

The Art Complex is a preservation project that is one component of EWU's overall strategy to decarbonize the campus and comply with House Bill 1390. HB 1390 dictates that the campus must achieve a combined EUI of 112 kBtu/sf/yr. This individual project would replace an inefficient mechanical system, connect to a future Geothermal Plant, and repair or replace building controls and lighting components to improve energy efficiency.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

In 2019 the Clean Buildings Performance Standard (CBPS) was established, requiring the Department of Commerce to establish rules for energy performance standards for commercial buildings. Through the reduction of building energy usage, the performance standard seeks to maximize reductions in greenhouse gas emissions from the built environment. The performance standard includes energy use intensity targets by building type, as well as requirements for an energy management plan, operations and maintenance program, energy efficiency audits, and investments in energy efficiency measures. The adoption of HB1390 for campuses utilizing district heating and cooling systems, such as Eastern Washington University, created a pathway for even greater reductions in greenhouse gas emissions by focusing on phasing out the use of fossil fuels to generate steam for campuswide heating.

Opportunity - To reduce greenhouse gas emissions, reduce building Energy Use Intensity (EUI), comply with HB 1390and (CBPS), support the EWU decarbonization plan (currently being drafted), and to reduce the overall campus energy and operating costs.

Priority – This is a high priority project that is integrally linked and dependent on the Geothermal Node Plant that is being submitted as a separate capital budget request. Supported and justified by multiple studies noted below, this project along with the Geothermal Plant was found to be the most effective approach in addressing decarbonization and energy use for the University while also extending the life of existing, aging facilities. Other supporting studies, attached to this request or submitted separately in EWU's 25/27 budget request, include: Ground Source Heat Pump Feasibility Study, EWU Hydrogeologic Evaluation, Martin-Williamson Predesign, Civil Engineering Building – Applied Engineering Predesign, Lucy Covington Center Predesign, Geothermal Plant – Node 1 report, EWU Decarbonization Plan, and Energy Audits for existing buildings proposed to be connected to the Geothermal Plant (study underway).

Underserved people / communities –Eastern Washington University continues to provide opportunities for underserved and diverse populations. More than 1 in 3 students are from diverse backgrounds, 44% are the first in their family to attend college, and Eastern offers one of the most affordable and accessible educations from a 4-year university. In addition, it is well documented that climate change impacts underserved and low-income communities the hardest of all. This project will support underserved populations locally and on a long-term basis globally by lessening the impacts of human caused climate change.

Operating budget savings – This individual project will help to reduce operating costs by lowering energy consumption and by replacing aging equipment with newer systems. See attached studies for more in-depth analysis and how this project is related to other proposed projects on campus.

Public safety improvements – It will serve to improve the safety and longevity of the existing building, and more importantly help to reduce the long-term impacts of climate change. This region is experiencing records setting temperatures and more intense wildfires year after year, including an evacuation notice due to local fires in 2023. If meaningful steps aren't taken to curb the impacts of climate change, conditions will continue to worsen for future generations.

Clarifying details – In summary, this project is part of a larger initiative to reduce energy use and carbon emissions on the campus by transitioning from burning fossil fuels (natural gas) to ground source heat pump technology (electric). As the new Geothermal Plant – Node 1 comes on-line, this existing building would then be connected to that system along with other

Project Number: 40000161
Project Title: Art Complex - Decarbonization

Description

energy efficient measures.
Current condition of the facility/ system – The current building was constructed in the 1960s and has been well maintained. Simply due to age, the mechanical systems are nearing the end of their useful life and will require ever increasing maintenance and eventual replacement.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the projec start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
This project will entail design and construction to replace aging and obsolete mechanical equipment within the existing Art Complex, changing the primary heating source from steam (natural gas fired boilers) to ground source heat pumps (electric), and will tie to the proposed Geothermal Plant – Node 1.
Design is anticipated to begin in Sept. 2025, construction would begin in Nov. 2026, and substantial completion would be anticipated for the Summer of 2027.
While design and construction of this individual building cannot be phased, this project is one component of a larger campus decarbonization plan related to the completion of the Geothermal Plant – Node 1. Once Geothermal Plant –Node 1 is operational, individual buildings could be added in a staggered approach.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Not taking action would result in the continued use of a less efficient heating & cooling system that is nearing it's useful end of life, higher operating and maintenance costs of an aging system, not complying with state legislation that requires public institutions to reduce energy use and carbon emissions, potential fines for not complying with the state and federal energy performance standards (anticipated by 2027), requiring increased future costs due to construction escalation, and contributing to continuing and increasing impacts of climate change – both locally and globally.
If approved, this request would directly contribute to the requirement of meeting increasing energy efficiency performance standards and reducing greenhouse gas emissions to levels established by the State of WA, Dept. of Commerce, and Dept. of Ecology. It would also move EWU closer to meeting the University's long-term planning and sustainability goals.
What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
In the attached and related reports, systems other than geothermal ground source heat pumps were explored. Alternate systems evaluated include1) existing system - gas fired boilers to produce steam, 2) using renewable natural gas to fuel existing boilers, and 3) VRF – Variable Refrigerant Flow systems that use air to air heat pump technology. More detail can be found in the reports, but to summarize the findings for each system:
1) Existing gas fired boilers –This system would result in no changes, no added upfront costs, and it would not address any of the problems or meet state energy use requirements.
2) Using renewable natural gas instead of more commonly available utility provided natural gas – While possible in theory, this resource is not feasible or affordable in the quantity required to heat the campus. If the renewable gas were available, current pricing would be approximately (10) times the current utility rate costs.
3) Switching individual buildings to VRF systems – This system could be used to heat and cool buildings, however it increases maintenance and operations costs substantially, components would be completely decentralized and less energy efficient, it would require area increases in each of the buildings to house additional equipment, air to air heat pumps can be problematic during the colder months in the eastern Washington climate, and mechanical equipment has a much shorter lifespan.
The recommendation of geothermal ground source heat pumps was chosen because it was the most effective system to address the problems on a long-term basis, it would allow the most reuse of existing campus infrastructure, it is the most energy efficient and would result in the largest decrease of carbon emissions, it would require the least amount of ongoing maintenance, and it would provide the most opportunity to incorporate into academic programs (Mechanical Engineering, Electrical Engineering, Sustainability, etc.) to leverage student learning opportunities and increase public awareness and

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Report Number: CBS002
Date Run: 9/10/2024 12:21PM

Project Number: 40000161
Project Title: Art Complex - Decarbonization

Description

acceptance of sustainability.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The largest impact would be on the University maintenance staff. Replacing aging equipment would lessen initial maintenance costs at each of the individual buildings, however these savings would be traded for related effort to operate the Geothermal Plant – Node 1. Overall, there would be a need to add some maintenance and operation staff for the new central plant (outside of this individual project).
Students and faculty would be served by this project through the incorporation of the facility and technology into academic programs.
The community would be served on an individual level by the awareness raised from the project and on a larger scale by the reduction in energy use and climate related impacts.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share of project cost allowable and the supporting citation or documentation.
There may be opportunities to apply available federal energy incentives to this project, however that will not be fully known until the system has been designed and communicated to those potential sources of funding.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project will support the University's strategic plan, comprehensive campus master plan (in progress), climate action plan, decarbonization plan (in progress), and the various studies, reports, and predesigns that have been mentioned above or are attached for reference. Ultimately, this will reduce the University's energy use, carbon emissions, and operating costs, while supporting the mission, values, and long-term plans for EWU.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
This project does not include IT specific costs, however there are tangential costs associated with energy management systems and building controls that will be coordinated with the IT department and are incorporated into the current estimate. See attached EWU decarbonization report for more detail. Final, updated costs will be refined further in design.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27Operating Budget Instructions.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
There are no growth management impacts, the project is located on the existing Eastern Washington University Campus.

Funding

	Expenditures	2025-27 Fiscal Period

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:21PM

Project Number: **40000161**
Project Title: **Art Complex - Decarbonization**

Funding

Acct Code	Account Title	Estimated Total	Prior Biennium	Current Biennium	Reapprops	New Approps
26C-1	Climate Commit Accou-State	10,403,000				10,403,000
	Total	**10,403,000**	**0**	**0**	**0**	**10,403,000**

		Future Fiscal Periods			
		2027-29	2029-31	2031-33	2033-35
26C-1	Climate Commit Accou-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

No additional area will be added to the building.

Capital Project Request

2025-27 Biennium

*

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000161	40000161
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Art Building - Decarbonization
OFM Project Number	40000161

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	20,493	MACC per Gross Square Foot	$89
Usable Square Feet	20,493	Escalated MACC per Gross Square Foot	$91
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	12.94%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

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Project Cost Summary

Total Project	$3,251,835	Total Project Escalated	$3,308,924
		Rounded Escalated Total	$3,309,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$3,309,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$205,959		
Extra Services	$79,100		
Other Services	$88,500		
Design Services Contingency	$37,356		
Consultant Services Subtotal	**$410,915**	**Consultant Services Subtotal Escalated**	**$412,967**

Construction			
Maximum Allowable Construction Cost (MACC)	$1,831,460	Maximum Allowable Construction Cost (MACC) Escalated	$1,861,313
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$522,805		$531,327
Non-Taxable Items	$96,406		$97,978
Sales Tax	$209,530	Sales Tax Escalated	$221,673
Construction Subtotal	**$2,660,201**	**Construction Subtotal Escalated**	**$2,712,291**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$180,720		
Project Administration Subtotal	**$180,720**	**Project Administration Subtotal Escalated**	**$183,666**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$3,251,835**	Total Project Escalated	**$3,308,924**
		Rounded Escalated Total	**$3,309,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$412,967		$412,967		**$0**
Construction					
Construction Subtotal	$2,712,291		$2,712,291		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$183,666		$183,666		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$3,308,924**	**$0**	**$3,308,924**	**$0**	**$0**
	$3,309,000	**$0**	**$3,309,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)

Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.

Insert Row Here

What has been completed or is underway with a previous appropriation?

NA

Insert Row Here

What is planned with a future appropriation?

NA

Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$210,203			69% of A/E Basic Services
Other - ESCO Design Fee	$205,959			
A/E Basic Design Services Auto-Populate Correction	-$210,203			Does not fit ESCO model
Sub TOTAL	**$205,959**	**1.0000**	**$205,959**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$64,500			
Site Survey				
Testing	$14,600			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$79,100**	**1.0000**	**$79,100**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$94,439			31% of A/E Basic Services
HVAC Balancing	$16,500			
Staffing				
Other - Site Supervision	$72,000			
Bid/Construction/Closeout Auto-Populate Correction	-$94,439			Does not fit ESCO model
Sub TOTAL	**$88,500**	**1.0163**	**$89,943**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$37,356			
Other				

Insert Row Here				
Sub TOTAL	**$37,356**	**1.0163**	**$37,965**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$410,915**		**$412,967**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure	$219,658			
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems	$48,400			
D30 - HVAC Systems	$1,043,524			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$83,882			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$268,338			
Other Direct Cost - Lighting & Lighting Controls	$103,069			
ODCs & Bond	$64,589			
Insert Row Here				
Sub TOTAL	**$1,831,460**	**1.0163**	**$1,861,313**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$1,831,460**		**$1,861,313**	
	$89		*$91 per GSF*	
	This Section is Intentionally Left Blank			
7) Owner Construction Contingency				
Allowance for Change Orders	$183,146			
Other - ESCO OH&P	$339,659			
Insert Row Here				
Sub TOTAL	**$522,805**	**1.0163**	**$531,327**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$29,706			
DES Fee	$66,700			
Insert Row Here				
Sub TOTAL	**$96,406**	**1.0163**	**$97,978**	
9) Sales Tax				
Sub TOTAL	**$209,530**		**$221,673**	
CONSTRUCTION CONTRACTS TOTAL	**$2,660,201**		**$2,712,291**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$16,545				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$16,545				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$113,220				
Agency Project Management (2.5%)	$67,500				
Subtotal of Other	*$180,720*				
PROJECT MANAGEMENT TOTAL	**$180,720**		**1.0163**	**$183,666**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Communications Building - Decarbonization
OFM Project Number	40000161

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	9,755	MACC per Gross Square Foot	$66
Usable Square Feet	9,755	Escalated MACC per Gross Square Foot	$67
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	13.80%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

Green cells must be filled in by user

Project Cost Summary

Total Project	$1,182,106	Total Project Escalated	$1,205,388
		Rounded Escalated Total	$1,205,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$1,205,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$75,424		
Extra Services	$24,500		
Other Services	$38,500		
Design Services Contingency	$13,842		
Consultant Services Subtotal	**$152,266**	**Consultant Services Subtotal Escalated**	**$153,122**

Construction			
Maximum Allowable Construction Cost (MACC)	$644,064	Maximum Allowable Construction Cost (MACC) Escalated	$654,563
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$183,485		$186,477
Non-Taxable Items	$62,246		$63,261
Sales Tax	$73,652	Sales Tax Escalated	$80,489
Construction Subtotal	**$963,447**	**Construction Subtotal Escalated**	**$984,790**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$66,393		
Project Administration Subtotal	**$66,393**	**Project Administration Subtotal Escalated**	**$67,476**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$1,182,106**	Total Project Escalated	**$1,205,388**
		Rounded Escalated Total	**$1,205,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$153,122		$153,122		**$0**
Construction					
Construction Subtotal	$984,790		$984,790		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$67,476		$67,476		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$1,205,388**	**$0**	**$1,205,388**	**$0**	**$0**
	$1,205,000	**$0**	**$1,205,000**	**$0**	**$0**
		Percentage requested as a new appropriation	**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$78,799			69% of A/E Basic Services
Other - ESCO Design Fee	$75,424			
A/E Basic Design Services Auto-Populate Correction	-$78,799			Does not fit ESCO model
Sub TOTAL	**$75,424**	**1.0000**	**$75,425**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$20,000			
Site Survey				
Testing	$4,500			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$24,500**	**1.0000**	**$24,500**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$35,403			31% of A/E Basic Services
HVAC Balancing	$6,500			
Staffing				
Other - Site Supervision	$32,000			
Bid/Construction/Closeout Auto-Populate Correction	-$35,403			Does not fit ESCO model
Sub TOTAL	**$38,500**	**1.0163**	**$39,128**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$13,842			
Other				

Insert Row Here				
Sub TOTAL	**$13,842**	**1.0163**	**$14,069**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$152,266**		**$153,122**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems				
D30 - HVAC Systems	$396,212			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$63,632			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$107,305			
Other Direct Cost - Lighting & Lighting Controls	$51,399			
ODCs & Bond	$25,516			
Insert Row Here				
Sub TOTAL	**$644,064**	**1.0163**	**$654,563**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$644,064**		**$654,563**	
	$66		*$67 per GSF*	
	This Section is Intentionally Left Blank			
7) Owner Construction Contingency				
Allowance for Change Orders	$64,406			
Other - ESCO OH&P	$119,079			
Insert Row Here				
Sub TOTAL	**$183,485**	**1.0163**	**$186,477**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$10,646			
DES Fee	$51,600			
Insert Row Here				
Sub TOTAL	**$62,246**	**1.0163**	**$63,261**	
9) Sales Tax				
Sub TOTAL	**$73,652**		**$80,489**	
CONSTRUCTION CONTRACTS TOTAL	**$963,447**		**$984,790**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$6,027				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$6,027				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$39,693				
Agency Project Management (2.5%)	$26,700				
Subtotal of Other	*$66,393*				
PROJECT MANAGEMENT TOTAL	**$66,393**		**1.0163**	**$67,476**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
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Tab B. Consultant Services
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Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
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Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Music Building - Decarbonization
OFM Project Number	40000161

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	24,468	MACC per Gross Square Foot	$58
Usable Square Feet	24,468	Escalated MACC per Gross Square Foot	$59
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	13.16%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

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Project Cost Summary

Total Project	$2,534,637	Total Project Escalated	$2,580,220
		Rounded Escalated Total	$2,580,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$2,580,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$155,970		
Extra Services	$57,500		
Other Services	$70,500		
Design Services Contingency	$28,397		
Consultant Services Subtotal	**$312,367**	**Consultant Services Subtotal Escalated**	**$313,979**

Construction			
Maximum Allowable Construction Cost (MACC)	$1,416,284	Maximum Allowable Construction Cost (MACC) Escalated	$1,439,370
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$413,811		$420,557
Non-Taxable Items	$85,569		$86,964
Sales Tax	$162,878	Sales Tax Escalated	$173,279
Construction Subtotal	**$2,078,543**	**Construction Subtotal Escalated**	**$2,120,170**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$143,728		
Project Administration Subtotal	**$143,728**	**Project Administration Subtotal Escalated**	**$146,071**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$2,534,637**	Total Project Escalated	**$2,580,220**
		Rounded Escalated Total	**$2,580,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$313,979		$313,979		**$0**
Construction					
Construction Subtotal	$2,120,170		$2,120,170		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$146,071		$146,071		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$2,580,220**	**$0**	**$2,580,220**	**$0**	**$0**
	$2,580,000	**$0**	**$2,580,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$166,180			69% of A/E Basic Services
Other - ESCO Design Fee	$155,970			
A/E Basic Design Services Auto-Populate Correction	-$166,180			Does not fit ESCO model
Sub TOTAL	**$155,970**	**1.0000**	**$155,970**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$45,000			
Site Survey				
Testing	$12,500			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$57,500**	**1.0000**	**$57,500**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$74,661			31% of A/E Basic Services
HVAC Balancing	$14,500			
Staffing				
Other - Site Supervision	$56,000			
Bid/Construction/Closeout Auto-Populate Correction	-$74,661			Does not fit ESCO model
Sub TOTAL	**$70,500**	**1.0163**	**$71,649**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$28,397			
Other				

Insert Row Here				
Sub TOTAL	**$28,397**	**1.0163**	**$28,860**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$312,367**		**$313,979**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure	$125,519			
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems	$0			
D30 - HVAC Systems	$717,934			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$121,699			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$269,148			
Other Direct Cost - Lighting & Lighting Controls	$128,922			
ODCs & Bond	$53,062			
Insert Row Here				
Sub TOTAL	**$1,416,284**	**1.0163**	**$1,439,370**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$1,416,284**		**$1,439,370**	
	$58		*$59*	*per GSF*
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$141,628			
Other - ESCO OH&P	$272,183			
Insert Row Here				
Sub TOTAL	**$413,811**	**1.0163**	**$420,557**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$23,069			
DES Fee	$62,500			
Insert Row Here				
Sub TOTAL	**$85,569**	**1.0163**	**$86,964**	
9) Sales Tax				
Sub TOTAL	**$162,878**		**$173,279**	
CONSTRUCTION CONTRACTS TOTAL	**$2,078,543**		**$2,120,170**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$12,901				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$12,901				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$90,728				
Agency Project Management (2.5%)	$53,000				
Subtotal of Other	*$143,728*				
PROJECT MANAGEMENT TOTAL	**$143,728**		**1.0163**	**$146,071**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
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Tab B. Consultant Services
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Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
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STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Radio & TV Building - Decarbonization
OFM Project Number	40000161

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	8,721	MACC per Gross Square Foot	$71
Usable Square Feet	8,721	Escalated MACC per Gross Square Foot	$72
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	13.82%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

Green cells must be filled in by user

Project Cost Summary

Total Project	$1,145,522	Total Project Escalated	$1,168,211
		Rounded Escalated Total	$1,168,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$1,168,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$73,646		
Extra Services	$24,500		
Other Services	$38,500		
Design Services Contingency	$13,665		
Consultant Services Subtotal	**$150,310**	**Consultant Services Subtotal Escalated**	**$151,163**

Construction			
Maximum Allowable Construction Cost (MACC)	$621,556	Maximum Allowable Construction Cost (MACC) Escalated	$631,688
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$177,235		$180,124
Non-Taxable Items	$61,969		$62,980
Sales Tax	$71,092	Sales Tax Escalated	$77,863
Construction Subtotal	**$931,852**	**Construction Subtotal Escalated**	**$952,655**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$63,360		
Project Administration Subtotal	**$63,360**	**Project Administration Subtotal Escalated**	**$64,393**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$1,145,522**	Total Project Escalated	**$1,168,211**
		Rounded Escalated Total	**$1,168,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$151,163		$151,163		**$0**
Construction					
Construction Subtotal	$952,655		$952,655		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$64,393		$64,393		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$1,168,211**	**$0**	**$1,168,211**	**$0**	**$0**
	$1,168,000	**$0**	**$1,168,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$76,171			69% of A/E Basic Services
Other - ESCO Design Fee	$73,646			
A/E Basic Design Services Auto-Populate Correction	-$76,171			Does not fit ESCO model
Sub TOTAL	**$73,646**	**1.0000**	**$73,647**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$20,000			
Site Survey				
Testing	$4,500			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$24,500**	**1.0000**	**$24,500**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$34,222			31% of A/E Basic Services
HVAC Balancing	$6,500			
Staffing				
Other - Site Supervision	$32,000			
Bid/Construction/Closeout Auto-Populate Correction	-$34,222			Does not fit ESCO model
Sub TOTAL	**$38,500**	**1.0163**	**$39,128**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$13,665			
Other				

Insert Row Here				
Sub TOTAL	**$13,665**	**1.0163**	**$13,888**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$150,310**		**$151,163**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems				
D30 - HVAC Systems	$397,559			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$56,888			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$95,931			
Other Direct Cost - Lighting & Lighting Controls	$45,951			
ODCs & Bond	$25,227			
Insert Row Here				
Sub TOTAL	**$621,556**	**1.0163**	**$631,688**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$621,556**		**$631,688**	
	$71		*$72*	*per GSF*
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$62,156			
Other - ESCO OH&P	$115,079			
Insert Row Here				
Sub TOTAL	**$177,235**	**1.0163**	**$180,124**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$10,369			
DES Fee	$51,600			
Insert Row Here				
Sub TOTAL	**$61,969**	**1.0163**	**$62,980**	
9) Sales Tax				
Sub TOTAL	**$71,092**		**$77,863**	
CONSTRUCTION CONTRACTS TOTAL	**$931,852**		**$952,655**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$5,841				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$5,841				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$38,360				
Agency Project Management (2.5%)	$25,000				
Subtotal of Other	*$63,360*				
PROJECT MANAGEMENT TOTAL	**$63,360**		**1.0163**	**$64,393**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Theater Building - Decarbonization
OFM Project Number	40000161

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	20,164	MACC per Gross Square Foot	$56
Usable Square Feet	20,164	Escalated MACC per Gross Square Foot	$57
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	13.35%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

Green cells must be filled in by user

Project Cost Summary

Total Project	$2,102,483	Total Project Escalated	$2,140,593
		Rounded Escalated Total	$2,141,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$2,141,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$144,070		
Extra Services	$58,900		
Other Services	$76,500		
Design Services Contingency	$27,947		
Consultant Services Subtotal	**$307,417**	**Consultant Services Subtotal Escalated**	**$309,121**

Construction			
Maximum Allowable Construction Cost (MACC)	$1,132,474	Maximum Allowable Construction Cost (MACC) Escalated	$1,150,934
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$336,154		$341,634
Non-Taxable Items	$78,928		$80,215
Sales Tax	$130,708	Sales Tax Escalated	$139,983
Construction Subtotal	**$1,678,264**	**Construction Subtotal Escalated**	**$1,712,766**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$116,802		
Project Administration Subtotal	**$116,802**	**Project Administration Subtotal Escalated**	**$118,706**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$2,102,483**	Total Project Escalated	**$2,140,593**
		Rounded Escalated Total	**$2,141,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$309,121		$309,121		**$0**
Construction					
Construction Subtotal	$1,712,766		$1,712,766		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$118,706		$118,706		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$2,140,593**	**$0**	**$2,140,593**	**$0**	**$0**
	$2,141,000	**$0**	**$2,141,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$135,283			69% of A/E Basic Services
Other - ESCO Design Fee	$144,070			
A/E Basic Design Services Auto-Populate Correction	-$135,283			Does not fit ESCO model
Sub TOTAL	**$144,070**	**1.0000**	**$144,070**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$45,500			
Site Survey				
Testing	$13,400			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$58,900**	**1.0000**	**$58,900**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$60,779			31% of A/E Basic Services
HVAC Balancing	$16,500			
Staffing				
Other - Site Supervision	$60,000			
Bid/Construction/Closeout Auto-Populate Correction	-$60,779			Does not fit ESCO model
Sub TOTAL	**$76,500**	**1.0163**	**$77,748**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$27,947			
Other				

Insert Row Here				
Sub TOTAL	**$27,947**	**1.0163**	**$28,403**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$307,417**		**$309,121**	

Green cells must be filled in by user

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems				
D30 - HVAC Systems	$656,516			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$102,758			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$221,804			
Other Direct Cost - Lighting & Lighting Controls	$101,415			
ODCs & Bond	$49,981			
Insert Row Here				
Sub TOTAL	**$1,132,474**	**1.0163**	**$1,150,934**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$1,132,474**		**$1,150,934**	
	$56		*$57*	*per GSF*
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$113,247			
Other - ESCO OH&P	$222,907			
Insert Row Here				
Sub TOTAL	**$336,154**	**1.0163**	**$341,634**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$20,628			
DES Fee	$58,300			
Insert Row Here				
Sub TOTAL	**$78,928**	**1.0163**	**$80,215**	
9) Sales Tax				
Sub TOTAL	**$130,708**		**$139,983**	
CONSTRUCTION CONTRACTS TOTAL	**$1,678,264**		**$1,712,766**	

Green cells must be filled in by user

Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

Green cells must be filled in by user

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$10,703				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$10,703				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$74,302				
Agency Project Management (2.5%)	$42,500				
Subtotal of Other	*$116,802*				
PROJECT MANAGEMENT TOTAL	**$116,802**		**1.0163**	**$118,706**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

Green cells must be filled in by user

C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:23PM

Project Number: **40000163**
Project Title: **John F Kennedy Library - Decarbonization**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 8

Project Summary

The John F Kennedy Library is a preservation project that is one component of EWU's overall strategy to decarbonize the campus and comply with House Bill 1390. HB 1390 dictates that the campus must achieve a combined EUI of 112 kBtu/sf/yr. This individual project would replace an inefficient mechanical system, connect to a future Geothermal Plant, and repair or replace building controls and lighting components to improve energy efficiency.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

In 2019 the Clean Buildings Performance Standard (CBPS) was established, requiring the Department of Commerce to establish rules for energy performance standards for commercial buildings. Through the reduction of building energy usage, the performance standard seeks to maximize reductions in greenhouse gas emissions from the built environment. The performance standard includes energy use intensity targets by building type, as well as requirements for an energy management plan, operations and maintenance program, energy efficiency audits, and investments in energy efficiency measures. The adoption of HB1390 for campuses utilizing district heating and cooling systems, such as Eastern Washington University, created a pathway for even greater reductions in greenhouse gas emissions by focusing on phasing out the use of fossil fuels to generate steam for campuswide heating.

Opportunity - To reduce greenhouse gas emissions, reduce building Energy Use Intensity (EUI), comply with HB 1390and (CBPS), support the EWU decarbonization plan (currently being drafted), and to reduce the overall campus energy and operating costs.

Priority – This is a high priority project that is integrally linked and dependent on the Geothermal Node Plant that is being submitted as a separate capital budget request. Supported and justified by multiple studies noted below, this project along with the Geothermal Plant was found to be the most effective approach in addressing decarbonization and energy use for the University while also extending the life of existing, aging facilities. Other supporting studies, attached to this request or submitted separately in EWU's 25/27 budget request, include: Ground Source Heat Pump Feasibility Study, EWU Hydrogeologic Evaluation, Martin-Williamson Predesign, Civil Engineering Building – Applied Engineering Predesign, Lucy Covington Center Predesign, Geothermal Plant – Node 1 report, EWU Decarbonization Plan, and Energy Audits for existing buildings proposed to be connected to the Geothermal Plant (study underway).

Underserved people / communities –Eastern Washington University continues to provide opportunities for underserved and diverse populations. More than 1 in 3 students are from diverse backgrounds, 44% are the first in their family to attend college, and Eastern offers one of the most affordable and accessible educations from a 4-year university. In addition, it is well documented that climate change impacts underserved and low-income communities the hardest of all. This project will support underserved populations locally and on a long-term basis globally by lessening the impacts of human caused climate change.

Operating budget savings – This individual project will help to reduce operating costs by lowering energy consumption and by replacing aging equipment with newer systems. See attached studies for more in-depth analysis and how this project is related to other proposed projects on campus.

Public safety improvements – It will serve to improve the safety and longevity of the existing building, and more importantly help to reduce the long-term impacts of climate change. This region is experiencing records setting temperatures and more intense wildfires year after year, including an evacuation notice due to local fires in 2023. If meaningful steps aren't taken to curb the impacts of climate change, conditions will continue to worsen for future generations.

Clarifying details – In summary, this project is part of a larger initiative to reduce energy use and carbon emissions on the campus by transitioning from burning fossil fuels (natural gas) to ground source heat pump technology (electric). As the new Geothermal Plant – Node 1 comes on-line, this existing building would then be connected to that system along with other

Project Number: **40000163**
Project Title: **John F Kennedy Library - Decarbonization**

Description

energy efficient measures.
Current condition of the facility/ system – The current building was originally constructed in 1968 and the last remodel was in finished in1995. Although it has been well maintained, due to age, the mechanical systems are nearing the end of their useful life and will require ever increasing maintenance and eventual replacement.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the projec start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
This project will entail design and construction to replace aging and obsolete mechanical equipment within the John F Kennedy Library, changing the primary heating source from steam (natural gas fired boilers) to ground source heat pumps (electric), and will tie to the proposed Geothermal Plant – Node 1.
Design is anticipated to begin in Sept. 2025, construction would begin in Nov. 2026, and substantial completion would be anticipated for the Summer of 2027.
While design and construction of this individual building cannot be phased, this project is one component of a larger campus decarbonization plan related to the completion of the Geothermal Plant – Node 1. Once Geothermal Plant –Node 1 is operational, individual buildings could be added in a staggered approach.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Not taking action would result in the continued use of a less efficient heating & cooling system that is nearing it's useful end of life, higher operating and maintenance costs of an aging system, not complying with state legislation that requires public institutions to reduce energy use and carbon emissions, potential fines for not complying with the state and federal energy performance standards (anticipated by 2027), requiring increased future costs due to construction escalation, and contributing to continuing and increasing impacts of climate change – both locally and globally.
If approved, this request would directly contribute to the requirement of meeting increasing energy efficiency performance standards and reducing greenhouse gas emissions to levels established by the State of WA, Dept. of Commerce, and Dept. of Ecology. It would also move EWU closer to meeting the University's long-term planning and sustainability goals.
What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
In the attached and related reports, systems other than geothermal ground source heat pumps were explored. Alternate systems evaluated include1) existing system - gas fired boilers to produce steam, 2) using renewable natural gas to fuel existing boilers, and 3) VRF – Variable Refrigerant Flow systems that use air to air heat pump technology. More detail can be found in the reports, but to summarize the findings for each system:
1) Existing gas fired boilers –This system would result in no changes, no added upfront costs, and it would not address any of the problems or meet state energy use requirements.
2) Using renewable natural gas instead of more commonly available utility provided natural gas – While possible in theory, this resource is not feasible or affordable in the quantity required to heat the campus. If the renewable gas were available, current pricing would be approximately (10) times the current utility rate costs.
3) Switching individual buildings to VRF systems – This system could be used to heat and cool buildings, how ever it increases maintenance and operations costs substantially, components would be completely decentralized and less energy efficient, it would require area increases in each of the buildings to house additional equipment, air to air heat pumps can be problematic during the colder months in the eastern Washington climate, and mechanical equipment has a much shorter lifespan.
The recommendation of geothermal ground source heat pumps was chosen because it was the most effective system to address the problems on a long-term basis, it would allow the most reuse of existing campus infrastructure, it is the most energy efficient and would result in the largest decrease of carbon emissions, it would require the least amount of ongoing maintenance, and it would provide the most opportunity to incorporate into academic programs (Mechanical Engineering, Electrical Engineering, Sustainability, etc.) to leverage student learning opportunities and increase public awareness and

Description

acceptance of sustainability.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The largest impact would be on the University maintenance staff. Replacing aging equipment would lessen initial maintenance costs at each of the individual buildings, however these savings would be traded for related effort to operate the Geothermal Plant – Node 1. Overall, there would be a need to add some maintenance and operation staff for the new central plant (outside of this individual project).
Students and faculty would be served by this project through the incorporation of the facility and technology into academic programs.
The community would be served on an individual level by the awareness raised from the project and on a larger scale by the reduction in energy use and climate related impacts.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share of project cost allowable and the supporting citation or documentation.
There may be opportunities to apply available federal energy incentives to this project, however that will not be fully known until the system has been designed and communicated to those potential sources of funding.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project will support the University's strategic plan, comprehensive campus master plan (in progress), climate action plan, decarbonization plan (in progress), and the various studies, reports, and predesigns that have been mentioned above or are attached for reference. Ultimately, this will reduce the University's energy use, carbon emissions, and operating costs, while supporting the mission, values, and long-term plans for EWU.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
This project does not include IT specific costs, however there are tangential costs associated with energy management systems and building controls that will be coordinated with the IT department and are incorporated into the current estimate. See attached EWU decarbonization report for more detail. Final, updated costs will be refined further in design.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
As mentioned, this project is a result of and directly contributes to the statewide goals mentioned above with the sole purpose of reducing greenhouse gas emissions, energy use, and to improve building energy performance. See attached studies and reports for specific details and anticipated results. Final results will be determined when the project is fully designed and incrementally introduced to the campus system.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Being a state-owned facility, this project would help my modernizing the building inventory and by reducing costs related to energy use, building operation, and maintenance. It would also help the state meet mandated energy goals and serve as an

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:23PM

Project Number: 40000163
Project Title: John F Kennedy Library - Decarbonization

Description

example of responsible use of state funds. Positive impacts and savings will be compounded as the cost of energy and more importantly the impacts of climate change continue to escalate locally, regionally, and globally.
The project directly serves the EWU campus and students and will be leveraged to support current academic programs and learning opportunities.
Local and state economic impacts will be realized by the engineering and construction industries that will be positively impacted through the creation of jobs and the growth of technologies related to sustainability and energy efficiency.

Is there additional information you would like decision makers to know when evaluating this request?
This project is the result and one component of a comprehensive effort to research, plan, and implement options for the most effective, economically viable, and technologically feasible way to achieve the energy performance goals of the state while meeting the mission and values of Eastern Washington University. It is directly linked to the Geothermal Plant – Node 1, which would need to be constructed prior to the recommended improvements requested within this project.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
This project may be eligible for Direct Pay and has been included on the attached Direct Pay Form

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
There are no growth management impacts, the project is located on the existing Eastern Washington University Campus.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
26C-1	Climate Commit Accou-State	3,084,000				3,084,000
	Total	**3,084,000**	**0**	**0**	**0**	**3,084,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
26C-1	Climate Commit Accou-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:23PM

Project Number: **40000163**
Project Title: **John F Kennedy Library - Decarbonization**

Operating Impacts

Narrative

No additional area will be constructed.

Capital Project Request

2025-27 Biennium

*

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000163	40000163
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	John F Kennedy Library - Decarbonization
OFM Project Number	40000163

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	124,496	MACC per Gross Square Foot	$14
Usable Square Feet	124,496	Escalated MACC per Gross Square Foot	$14
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	Libraries	A/E Fee Percentage	13.00%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

Green cells must be filled in by user

Project Cost Summary

Total Project	$3,031,020	Total Project Escalated	$3,084,241
		Rounded Escalated Total	$3,084,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$3,084,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$194,732		
Extra Services	$76,000		
Other Services	$70,000		
Design Services Contingency	$34,073		
Consultant Services Subtotal	**$374,805**	**Consultant Services Subtotal Escalated**	**$376,503**

Construction			
Maximum Allowable Construction Cost (MACC)	$1,702,664	Maximum Allowable Construction Cost (MACC) Escalated	$1,730,418
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$495,912		$503,996
Non-Taxable Items	$90,916		$92,398
Sales Tax	$195,673	Sales Tax Escalated	$207,088
Construction Subtotal	**$2,485,166**	**Construction Subtotal Escalated**	**$2,533,900**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$171,049		
Project Administration Subtotal	**$171,049**	**Project Administration Subtotal Escalated**	**$173,838**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$3,031,020**	Total Project Escalated	**$3,084,241**
		Rounded Escalated Total	**$3,084,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$376,503		$376,503		**$0**
Construction					
Construction Subtotal	$2,533,900		$2,533,900		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$173,838		$173,838		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$3,084,241**	**$0**	**$3,084,241**	**$0**	**$0**
	$3,084,000	**$0**	**$3,084,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$197,212			69% of A/E Basic Services
Other - ESCO Design Fee	$194,732			
A/E Basic Design Services Auto-Populate Correction	-$197,212			Does not fit ESCO model
Sub TOTAL	**$194,732**	**1.0000**	**$194,733**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$60,000			
Site Survey				
Testing	$16,000			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$76,000**	**1.0000**	**$76,000**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$88,603			31% of A/E Basic Services
HVAC Balancing	$6,000			
Staffing				
Other - Site Supervision	$64,000			
Bid/Construction/Closeout Auto-Populate Correction	-$88,603			Does not fit ESCO model
Sub TOTAL	**$70,000**	**1.0163**	**$71,141**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$34,073			
Other				

Insert Row Here				
Sub TOTAL	**$34,073**	**1.0163**	**$34,629**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$374,805**		**$376,503**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems	$37,400			
D30 - HVAC Systems	$605,275			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$212,850			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$140,800			
Other Direct Cost - Lighting & Lighting Controls	$655,970			
ODCs & Bond	$50,369			
Insert Row Here				
Sub TOTAL	**$1,702,664**	**1.0163**	**$1,730,418**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$1,702,664**		**$1,730,418**	
	$14		*$14 per GSF*	
	This Section is Intentionally Left Blank			
7) Owner Construction Contingency				
Allowance for Change Orders	$170,266			
Other - ESCO OH&P	$325,646			
Insert Row Here				
Sub TOTAL	**$495,912**	**1.0163**	**$503,996**	
8) Non-Taxable Items				
Other - WSST on Professional Services	$28,416			
DES Fee	$62,500			
Insert Row Here				
Sub TOTAL	**$90,916**	**1.0163**	**$92,398**	
9) Sales Tax				
Sub TOTAL	**$195,673**		**$207,088**	
CONSTRUCTION CONTRACTS TOTAL	**$2,485,166**		**$2,533,900**	

Green cells must be filled in by user

Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$15,421				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$15,421				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$108,549				
Agency Project Management (2.5%)	$62,500				EWU Project Management
Subtotal of Other	*$171,049*				
PROJECT MANAGEMENT TOTAL	**$171,049**		**1.0163**	**$173,838**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:29PM

Project Number: **40000165**
Project Title: **Sutton Hall - Decarbonization**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 9

Project Summary

Sutton Hall is a preservation project that is one component of EWU's overall strategy to decarbonize the campus and comply with House Bill 1390. HB 1390 dictates that the campus must achieve a combined EUI of 112 kBtu/sf/yr. This individual project would replace an inefficient mechanical system, connect to a future Geothermal Plant, and repair or replace building controls and lighting components to improve energy efficiency.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

In 2019 the Clean Buildings Performance Standard (CBPS) was established, requiring the Department of Commerce to establish rules for energy performance standards for commercial buildings. Through the reduction of building energy usage, the performance standard seeks to maximize reductions in greenhouse gas emissions from the built environment. The performance standard includes energy use intensity targets by building type, as well as requirements for an energy management plan, operations and maintenance program, energy efficiency audits, and investments in energy efficiency measures. The adoption of HB1390 for campuses utilizing district heating and cooling systems, such as Eastern Washington University, created a pathway for even greater reductions in greenhouse gas emissions by focusing on phasing out the use of fossil fuels to generate steam for campuswide heating.

Opportunity - To reduce greenhouse gas emissions, reduce building Energy Use Intensity (EUI), comply with HB 1390and (CBPS), support the EWU decarbonization plan (currently being drafted), and to reduce the overall campus energy and operating costs.

Priority – This is a high priority project that is integrally linked and dependent on the Geothermal Node Plant that is being submitted as a separate capital budget request. Supported and justified by multiple studies noted below, this project along with the Geothermal Plant was found to be the most effective approach in addressing decarbonization and energy use for the University while also extending the life of existing, aging facilities. Other supporting studies, attached to this request or submitted separately in EWU's 25/27 budget request, include: Ground Source Heat Pump Feasibility Study, EWU Hydrogeologic Evaluation, Martin-Williamson Predesign, Civil Engineering Building – Applied Engineering Predesign, Lucy Covington Center Predesign, Geothermal Plant – Node 1 report, EWU Decarbonization Plan, and Energy Audits for existing buildings proposed to be connected to the Geothermal Plant (study underway).

Underserved people / communities –Eastern Washington University continues to provide opportunities for underserved and diverse populations. More than 1 in 3 students are from diverse backgrounds, 44% are the first in their family to attend college, and Eastern offers one of the most affordable and accessible educations from a 4-year university. In addition, it is well documented that climate change impacts underserved and low-income communities the hardest of all. This project will support underserved populations locally and on a long-term basis globally by lessening the impacts of human caused climate change.

Operating budget savings – This individual project will help to reduce operating costs by lowering energy consumption and by replacing aging equipment with newer systems. See attached studies for more in-depth analysis and how this project is related to other proposed projects on campus.

Public safety improvements – It will serve to improve the safety and longevity of the existing building, and more importantly help to reduce the long-term impacts of climate change. This region is experiencing records setting temperatures and more intense wildfires year after year, including an evacuation notice due to local fires in 2023. If meaningful steps aren't taken to curb the impacts of climate change, conditions will continue to worsen for future generations.

Clarifying details – In summary ,this project is part of a larger initiative to reduce energy use and carbon emissions on the campus by transitioning from burning fossil fuels (natural gas) to ground source heat pump technology (electric). As the new Geothermal Plant – Node 1 comes on-line, this existing building would then be connected to that system along with other

Description

energy efficient measures.
Current condition of the facility/ system – The current building was originally constructed in 1923 and the last remodel was finished in1996. Although it has been well maintained, due to age, the mechanical systems are nearing the end of their useful life and will require ever increasing maintenance and eventual replacement.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the projec start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
This project will entail design and construction to replace aging and obsolete mechanical equipment within Sutton Hall, changing the primary heating source from steam (natural gas fired boilers)to ground source heat pumps (electric), and will tie to the proposed Geothermal Plant – Node 1.
Design is anticipated to begin in Sept. 2025, construction would begin in Nov. 2026, and substantial completion would be anticipated for the Summer of 2027.
While design and construction oft his individual building cannot be phased, this project is one component of a larger campus decarbonization plan related to the completion of the Geothermal Plant – Node 1. Once Geothermal Plant –Node 1 is operational, individual buildings could be added in a staggered approach.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Not taking action would result in the continued use of a less efficient heating & cooling system that is nearing it's useful end of life, higher operating and maintenance costs of an aging system, not complying with state legislation that requires public institutions to reduce energy use and carbon emissions, potential fines for not complying with the state and federal energy performance standards (anticipated by 2027), requiring increased future costs due to construction escalation, and contributing to continuing and increasing impacts of climate change – both locally and globally.
If approved, this request would directly contribute to the requirement of meeting increasing energy efficiency performance standards and reducing greenhouse gas emissions to levels established by the State of WA, Dept. of Commerce, and Dept. of Ecology. It would also move EWU closer to meeting the University's long-term planning and sustainability goals.
What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
In the attached and related reports, systems other than geothermal ground source heat pumps were explored. Alternate systems evaluated include1) existing system - gas fired boilers to produce steam, 2) using renewable natural gas to fuel existing boilers, and 3) VRF – Variable Refrigerant Flow systems that use air to air heat pump technology. More detail can be found in the reports, but to summarize the findings for each system:
1) Existing gas fired boilers –This system would result in no changes, no added upfront costs, and it would not address any of the problems or meet state energy use requirements.
2) Using renewable natural gas instead of more commonly available utility provided natural gas – While possible in theory, this resource is not feasible or affordable in the quantity required to heat the campus. If the renewable gas were available, current pricing would be approximately (10) times the current utility rate costs.
3) Switching individual buildings to VRF systems – This system could be used to heat and cool buildings, however it increases maintenance and operations costs substantially, components would be completely decentralized and less energy efficient, it would require area increases in each of the buildings to house additional equipment, air to air heat pumps can be problematic during the colder months in the eastern Washington climate, and mechanical equipment has a much shorter lifespan.
The recommendation of geothermal ground source heat pumps was chosen because it was the most effective system to address the problems on a long-term basis, it would allow the most reuse of existing campus infrastructure, it is the most energy efficient and would result in the largest decrease of carbon emissions, it would require the least amount of ongoing maintenance, and it would provide the most opportunity to incorporate into academic programs (Mechanical Engineering, Electrical Engineering, Sustainability, etc.) to leverage student learning opportunities and increase public awareness and

Description

acceptance of sustainability.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The largest impact would be on the University maintenance staff. Replacing aging equipment would lessen initial maintenance costs at each of the individual buildings, however these savings would be traded for related effort to operate the Geothermal Plant – Node 1. Overall, there would be a need to add some maintenance and operation staff for the new central plant (outside of this individual project).
Students and faculty would be served by this project through the incorporation of the facility and technology into academic programs.
The community would be served on an individual level by the awareness raised from the project and on a larger scale by the reduction in energy use and climate related impacts.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share of project cost allowable and the supporting citation or documentation.
There may be opportunities to apply available federal energy incentives to this project, however that will not be fully known until the system has been designed and communicated to those potential sources of funding.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project will support the University's strategic plan, comprehensive campus master plan (in progress), climate action plan, decarbonization plan (in progress), and the various studies, reports, and predesigns that have been mentioned above or are attached for reference. Ultimately, this will reduce the University's energy use, carbon emissions, and operating costs, while supporting the mission, values, and long-term plans for EWU.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
This project does not include IT specific costs, however there are tangential costs associated with energy management systems and building controls that will be coordinated with the IT department and are incorporated into the current estimate. See attached EWU decarbonization report for more detail. Final, updated costs will be refined further in design.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
As mentioned, this project is a result of and directly contributes to the statewide goals mentioned above with the sole purpose of reducing greenhouse gas emissions, energy use, and to improve building energy performance. See attached studies and reports for specific details and anticipated results. Final results will be determined when the project is fully designed and incrementally introduced to the campus system.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Being a state-owned facility, this project would help my modernizing the building inventory and by reducing costs related to energy use, building operation, and maintenance. It would also help the state meet mandated energy goals and serve as an

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:29PM

Project Number: **40000165**
Project Title: **Sutton Hall - Decarbonization**

Description

example of responsible use of state funds. Positive impacts and savings will be compounded as the cost of energy and more importantly the impacts of climate change continue to escalate locally, regionally, and globally.
The project directly serves the EWU campus and students and will be leveraged to support current academic programs and learning opportunities.
Local and state economic impacts will be realized by the engineering and construction industries that will be positively impacted through the creation of jobs and the growth of technologies related to sustainability and energy efficiency.

Is there additional information you would like decision makers to know when evaluating this request?
This project is the result and one component of a comprehensive effort to research, plan, and implement options for the most effective, economically viable, and technologically feasible way to achieve the energy performance goals of the state while meeting the mission and values of Eastern Washington University. It is directly linked to the Geothermal Plant – Node 1, which would need to be constructed prior to the recommended improvements requested within this project.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
This project may be eligible for Direct Pay and has been included on the attached Direct Pay Form

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
There are no growth management impacts, the project is located on the existing Eastern Washington University Campus.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
26C-1	Climate Commit Accou-State	1,017,000				1,017,000
	Total	**1,017,000**	**0**	**0**	**0**	**1,017,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
26C-1	Climate Commit Accou-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:29PM

Project Number: **40000165**
Project Title: **Sutton Hall - Decarbonization**

Operating Impacts

Narrative

No additional space will be added to building.

OFM

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000165	40000165
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Sutton Hall - Decarbonization
OFM Project Number	40000165

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	12,599	MACC per Gross Square Foot	$42
Usable Square Feet	12,599	Escalated MACC per Gross Square Foot	$42
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	13.95%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

Green cells must be filled in by user

Project Cost Summary

Total Project	$997,505	Total Project Escalated	$1,016,986
		Rounded Escalated Total	$1,017,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$1,017,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$69,330		
Extra Services	$31,400		
Other Services	$40,500		
Design Services Contingency	$14,123		
Consultant Services Subtotal	**$155,353**	**Consultant Services Subtotal Escalated**	**$156,245**

Construction			
Maximum Allowable Construction Cost (MACC)	$524,415	Maximum Allowable Construction Cost (MACC) Escalated	$532,963
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$151,060		$153,522
Non-Taxable Items	$53,688		$54,564
Sales Tax	$60,117	Sales Tax Escalated	$65,957
Construction Subtotal	**$789,280**	**Construction Subtotal Escalated**	**$807,006**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$52,873		
Project Administration Subtotal	**$52,873**	**Project Administration Subtotal Escalated**	**$53,735**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$997,505**	Total Project Escalated	**$1,016,986**
		Rounded Escalated Total	**$1,017,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$156,245		$156,245		**$0**
Construction					
Construction Subtotal	$807,006		$807,006		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$53,735		$53,873		**-$138**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$1,016,986**	**$0**	**$1,017,124**	**$0**	**-$138**
	$1,017,000	**$0**	**$1,017,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$65,018			69% of A/E Basic Services
Other - ESCO Design Fee	$69,330			
A/E Basic Design Services Auto-Populate Correction	-$65,018			Does not fit ESCO model
Sub TOTAL	**$69,330**	**1.0000**	**$69,330**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$22,500			
Site Survey				
Testing	$8,900			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$31,400**	**1.0000**	**$31,400**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$29,211			31% of A/E Basic Services
HVAC Balancing	$8,500			
Staffing				
Other - Site Supervision	$32,000			
Bid/Construction/Closeout Auto-Populate Correction	-$29,211			Does not fit ESCO model
Sub TOTAL	**$40,500**	**1.0163**	**$41,161**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$14,123			
Other				

Insert Row Here				
Sub TOTAL	**$14,123**	**1.0163**	**$14,354**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$155,353**		**$156,245**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems				
D30 - HVAC Systems	$220,000			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$71,500			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$136,233			
Other Direct Cost - Lighting & Lighting Controls	$66,384			
ODCs & Bond	$30,298			
Insert Row Here				
Sub TOTAL	**$524,415**	**1.0163**	**$532,963**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$524,415**		**$532,963**	
	$42		*$42 per GSF*	
	This Section is Intentionally Left Blank			
7) Owner Construction Contingency				
Allowance for Change Orders	$52,442			
Other - ESCO OH&P	$98,618			
Insert Row Here				
Sub TOTAL	**$151,060**	**1.0163**	**$153,522**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$9,888			
DES Fee	$43,800			
Insert Row Here				
Sub TOTAL	**$53,688**	**1.0163**	**$54,564**	
9) Sales Tax				
Sub TOTAL	**$60,117**		**$65,957**	
CONSTRUCTION CONTRACTS TOTAL	**$789,280**		**$807,006**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$5,085				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$5,085				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$32,873				
Agency Project Management (2.5%)	$20,000				
Subtotal of Other	*$52,873*				
PROJECT MANAGEMENT TOTAL	**$52,873**		**1.0163**	**$53,735**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

Green cells must be filled in by user

C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:30PM

Project Number: **40000167**
Project Title: **Huston Hall - Decarbonization**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 10

Project Summary

Huston Hall is a preservation project that is one component of EWU's overall strategy to decarbonize the campus and comply with House Bill 1390. HB 1390 dictates that the campus must achieve a combined EUI of 112 kBtu/sf/yr. This individual project would replace an inefficient mechanical system, connect to a future Geothermal Plant, and repair or replace building controls and lighting components to improve energy efficiency.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

In 2019 the Clean Buildings Performance Standard (CBPS) was established, requiring the Department of Commerce to establish rules for energy performance standards for commercial buildings. Through the reduction of building energy usage, the performance standard seeks to maximize reductions in greenhouse gas emissions from the built environment. The performance standard includes energy use intensity targets by building type, as well as requirements for an energy management plan, operations and maintenance program, energy efficiency audits, and investments in energy efficiency measures. The adoption of HB1390 for campuses utilizing district heating and cooling systems, such as Eastern Washington University, created a pathway for even greater reductions in greenhouse gas emissions by focusing on phasing out the use of fossil fuels to generate steam for campuswide heating.

Opportunity - To reduce greenhouse gas emissions, reduce building Energy Use Intensity (EUI), comply with HB 1390and (CBPS), support the EWU decarbonization plan (currently being drafted), and to reduce the overall campus energy and operating costs.

Priority – This is a high priority project that is integrally linked and dependent on the Geothermal Node Plant that is being submitted as a separate capital budget request. Supported and justified by multiple studies noted below, this project along with the Geothermal Plant was found to be the most effective approach in addressing decarbonization and energy use for the University while also extending the life of existing, aging facilities. Other supporting studies, attached to this request or submitted separately in EWU's 25/27 budget request, include: Ground Source Heat Pump Feasibility Study, EWU Hydrogeologic Evaluation, Martin-Williamson Predesign, Civil Engineering Building – Applied Engineering Predesign, Lucy Covington Center Predesign, Geothermal Plant – Node 1 report, EWU Decarbonization Plan, and Energy Audits for existing buildings proposed to be connected to the Geothermal Plant (study underway).

Underserved people / communities –Eastern Washington University continues to provide opportunities for underserved and diverse populations. More than 1 in 3 students are from diverse backgrounds, 44% are the first in their family to attend college, and Eastern offers one of the most affordable and accessible educations from a 4-year university. In addition, it is well documented that climate change impacts underserved and low-income communities the hardest of all. This project will support underserved populations locally and on a long-term basis globally by lessening the impacts of human caused climate change.

Operating budget savings – This individual project will help to reduce operating costs by lowering energy consumption and by replacing aging equipment with newer systems. See attached studies for more in-depth analysis and how this project is related to other proposed projects on campus.

Public safety improvements – It will serve to improve the safety and longevity of the existing building, and more importantly help to reduce the long-term impacts of climate change. This region is experiencing records setting temperatures and more intense wildfires year after year, including an evacuation notice due to local fires in 2023. If meaningful steps aren't taken to curb the impacts of climate change, conditions will continue to worsen for future generations.

Clarifying details – In summary, this project is part of a larger initiative to reduce energy use and carbon emissions on the campus by transitioning from burning fossil fuels (natural gas) to ground source heat pump technology (electric). As the new Geothermal Plant – Node 1 comes on-line, this existing building would then be connected to that system along with other

Project Number: 40000167
Project Title: Huston Hall - Decarbonization

Description

energy efficient measures.
Current condition of the facility/ system – The current building was originally constructed in 1915 and the last remodel was finished in1984. Although it has been well maintained, due to age, the mechanical systems are nearing the end of their useful life and will require ever increasing maintenance and eventual replacement.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the projec start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.
This project will entail design and construction to replace aging and obsolete mechanical equipment within Huston Hall, changing the primary heating source from steam (natural gas fired boilers)to ground source heat pumps (electric), and will tie to the proposed Geothermal Plant – Node 1.
Design is anticipated to begin in Sept. 2025, construction would begin in Nov. 2026, and substantial completion would be anticipated for the Summer of 2027.
While design and construction of this individual building cannot be phased, this project is one component of a larger campus decarbonization plan related to the completion of the Geothermal Plant – Node 1. Once Geothermal Plant –Node 1 is operational, individual buildings could be added in a staggered approach.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Not taking action would result in the continued use of a less efficient heating & cooling system that is nearing it's useful end of life, higher operating and maintenance costs of an aging system, not complying with state legislation that requires public institutions to reduce energy use and carbon emissions, potential fines for not complying with the state and federal energy performance standards (anticipated by 2027), requiring increased future costs due to construction escalation, and contributing to continuing and increasing impacts of climate change – both locally and globally.
If approved, this request would directly contribute to the requirement of meeting increasing energy efficiency performance standards and reducing greenhouse gas emissions to levels established by the State of WA, Dept. of Commerce, and Dept. of Ecology. It would also move EWU closer to meeting the University's long-term planning and sustainability goals.
What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
In the attached and related reports, systems other than geothermal ground source heat pumps were explored. Alternate systems evaluated include1) existing system - gas fired boilers to produce steam, 2) using renewable natural gas to fuel existing boilers, and 3) VRF – Variable Refrigerant Flow systems that use air to air heat pump technology. More detail can be found in the reports, but to summarize the findings for each system:
1) Existing gas fired boilers –This system would result in no changes, no added upfront costs, and it would not address any of the problems or meet state energy use requirements.
2) Using renewable natural gas instead of more commonly available utility provided natural gas – While possible in theory, this resource is not feasible or affordable in the quantity required to heat the campus. If the renewable gas were available, current pricing would be approximately (10) times the current utility rate costs.
3) Switching individual buildings to VRF systems – This system could be used to heat and cool buildings, however it increases maintenance and operations costs substantially, components would be completely decentralized and less energy efficient, it would require area increases in each of the buildings to house additional equipment, air to air heat pumps can be problematic during the colder months in the eastern Washington climate, and mechanical equipment has a much shorter lifespan.
The recommendation of geothermal ground source heat pumps was chosen because it was the most effective system to address the problems on a long-term basis, it would allow the most reuse of existing campus infrastructure, it is the most energy efficient and would result in the largest decrease of carbon emissions, it would require the least amount of ongoing maintenance, and it would provide the most opportunity to incorporate into academic programs (Mechanical Engineering, Electrical Engineering, Sustainability, etc.) to leverage student learning opportunities and increase public awareness and

Project Number: **40000167**
Project Title: **Huston Hall - Decarbonization**

Description

acceptance of sustainability.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The largest impact would be on the University maintenance staff. Replacing aging equipment would lessen initial maintenance costs at each of the individual buildings, however these savings would be traded for related effort to operate the Geothermal Plant – Node 1. Overall, there would be a need to add some maintenance and operation staff for the new central plant (outside of this individual project).
Students and faculty would be served by this project through the incorporation of the facility and technology into academic programs.
The community would be served on an individual level by the awareness raised from the project and on a larger scale by the reduction in energy use and climate related impacts.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share of project cost allowable and the supporting citation or documentation.
There may be opportunities to apply available federal energy incentives to this project, however that will not be fully known until the system has been designed and communicated to those potential sources of funding.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
This project will support the University's strategic plan, comprehensive campus master plan (in progress), climate action plan, decarbonization plan (in progress), and the various studies, reports ,and predesigns that have been mentioned above or are attached for reference. Ultimately, this will reduce the University's energy use, carbon emissions, and operating costs, while supporting the mission, values, and long-term plans for EWU.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.
This project does not include IT specific costs, however there are tangential costs associated with energy management systems and building controls that will be coordinated with the IT department and are incorporated into the current estimate. See attached EWU decarbonization report for more detail. Final, updated costs will be refined further in design.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27Operating Budget Instructions.
NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?
As mentioned, this project is a result of and directly contributes to the statewide goals mentioned above with the sole purpose of reducing greenhouse gas emissions, energy use, and to improve building energy performance. See attached studies and reports for specific details and anticipated results. Final results will be determined when the project is fully designed and incrementally introduced to the campus system.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Being a state-owned facility, this project would help my modernizing the building inventory and by reducing costs related to energy use, building operation, and maintenance. It would also help the state meet mandated energy goals and serve as an

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370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:30PM

Project Number: **40000167**
Project Title: **Huston Hall - Decarbonization**

Description

example of responsible use of state funds. Positive impacts and savings will be compounded as the cost of energy and more importantly the impacts of climate change continue to escalate locally, regionally, and globally.
The project directly serves the EWU campus and students and will be leveraged to support current academic programs and learning opportunities.
Local and state economic impacts will be realized by the engineering and construction industries that will be positively impacted through the creation of jobs and the growth of technologies related to sustainability and energy efficiency.

Is there additional information you would like decision makers to know when evaluating this request?
This project is the result and one component of a comprehensive effort to research, plan, and implement options for the most effective, economically viable, and technologically feasible way to achieve the energy performance goals of the state while meeting the mission and values of Eastern Washington University. It is directly linked to the Geothermal Plant – Node 1, which would need to be constructed prior to the recommended improvements requested within this project.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
This project may be eligible for Direct Pay and has been included on the attached Direct Pay Form

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 006

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
There are no growth management impacts, the project is located on the existing Eastern Washington University Campus.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
26C-1	Climate Commit Accou-State	1,858,000				1,858,000
	Total	**1,858,000**	**0**	**0**	**0**	**1,858,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
26C-1	Climate Commit Accou-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

OFM

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:30PM

Project Number: 40000167
Project Title: Huston Hall - Decarbonization

Operating Impacts

Narrative

No space is being added to the building

OFM

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000167	40000167
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Huston Hall - Decarbonization
OFM Project Number	40000167

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	15,099	MACC per Gross Square Foot	$66
Usable Square Feet	15,099	Escalated MACC per Gross Square Foot	$67
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	B
Construction Type	College classroom faciliti	A/E Fee Percentage	13.46%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	September-26
Construction Start	November-26	Construction End	June-27
Construction Duration	7 Months		

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Project Cost Summary

Total Project	$1,823,801	Total Project Escalated	$1,857,725
		Rounded Escalated Total	$1,858,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$1,858,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$113,875		
Extra Services	$46,150		
Other Services	$76,650		
Design Services Contingency	$23,667		
Consultant Services Subtotal	**$260,342**	**Consultant Services Subtotal Escalated**	**$261,978**

Construction			
Maximum Allowable Construction Cost (MACC)	$992,424	Maximum Allowable Construction Cost (MACC) Escalated	$1,008,601
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$283,461		$288,082
Non-Taxable Items	$75,115		$76,340
Sales Tax	$113,554	Sales Tax Escalated	$122,205
Construction Subtotal	**$1,464,554**	**Construction Subtotal Escalated**	**$1,495,228**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$98,906		
Project Administration Subtotal	**$98,906**	**Project Administration Subtotal Escalated**	**$100,519**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$1,823,801**	Total Project Escalated	**$1,857,725**
		Rounded Escalated Total	**$1,858,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$261,978		$261,978		**$0**
Construction					
Construction Subtotal	$1,495,228		$1,495,228		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$100,519		$100,519		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$1,857,725**	**$0**	**$1,857,725**	**$0**	**$0**
	$1,858,000	**$0**	**$1,858,000**	**$0**	**$0**
		Percentage requested as a new appropriation	**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Converting existing mechanical systems, connecting to the Geothermal Plant - Node 1, and minor energy improvements to meet the decarbonization plan.
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$118,497			69% of A/E Basic Services
Other - ESCO Design Fee	$113,875			
A/E Basic Design Services Auto-Populate Correction	-$118,497			Does not fit ESCO model
Sub TOTAL	**$113,875**	**1.0000**	**$113,875**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$32,500			
Site Survey				
Testing	$13,650			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$46,150**	**1.0000**	**$46,150**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$53,238			31% of A/E Basic Services
HVAC Balancing	$12,650			
Staffing				
Other - Site Supervision	$64,000			
Bid/Construction/Closeout Auto-Populate Correction	-$53,238			Does not fit ESCO model
Sub TOTAL	**$76,650**	**1.0163**	**$77,899**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$23,667			
Other				

Insert Row Here				
Sub TOTAL	**$23,667**	**1.0163**	**$24,054**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$260,342**		**$261,978**	

Green cells must be filled in by user

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0060**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems	$48,400			
D30 - HVAC Systems	$586,850			
D40 - Fire Protection Systems				
D50 - Electrical Systems	$83,717			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Other Direct Cost - Controls	$163,265			
Other Direct Cost - Lighting & Lighting Controls	$79,556			
ODCs & Bond	$30,636			
Insert Row Here				
Sub TOTAL	**$992,424**	**1.0163**	**$1,008,601**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$992,424**		**$1,008,601**	
	$66		*$67 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$99,242			
Other - ESCO OH&P	$184,219			
Insert Row Here				
Sub TOTAL	**$283,461**	**1.0163**	**$288,082**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$16,815			
DES Fee	$58,300			
Insert Row Here				
Sub TOTAL	**$75,115**	**1.0163**	**$76,340**	
9) Sales Tax				
Sub TOTAL	**$113,554**		**$122,205**	
CONSTRUCTION CONTRACTS TOTAL	**$1,464,554**		**$1,495,228**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0163**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

Green cells must be filled in by user

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$9,289				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$9,289				Does not fit ESCO model
ARTWORK TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - ESCO Construction Mgmt	$61,406				
Agency Project Management (2.5%)	$37,500				
Subtotal of Other	*$98,906*				
PROJECT MANAGEMENT TOTAL	**$98,906**		**1.0163**	**$100,519**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0060**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:31PM

Project Number: **40000169**
Project Title: **Building Demo for Decarbonization - Morrison, Streeter, & Isle**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 11

Project Summary

The demolition of Morrison, Streeter, and Isle Hall is a request and one component of EWU's overall strategy to decarbonize the campus and comply with House Bill 1390. HB 1390 dictates that the campus must achieve a combined EUI of 112 kBtu/sf/yr. This demolition project would remove three existing buildings that are either vacant or underutilized and continue to consume a disproportionate amount of energy and resources.

Project Description

What is the problem/opportunity? Identify: priority,underserved people/communities, operating budget savings, public safetyimprovements & clarifying details. Preservation projects: includeinformation about the current condition of the facility/system.

In 2019 the Clean Buildings Performance Standard (CBPS) wasestablished, requiring the Department of Commerce to establish rules for energyperformance standards for commercial buildings. Through the reduction of building energy usage, the performance standardseeks to maximize reductions in greenhouse gas emissions from the builtenvironment. The performance standard includes energy use intensity targets bybuilding type, as well as requirements for an energy management plan,operations and maintenance program, energy efficiency audits, and investmentsin energy efficiency measures. Theadoption of HB1390 for campuses utilizing district heating and cooling systems,such as Eastern Washington University, created a pathway for even greaterreductions in greenhouse gas emissions by focusing on phasing out the use offossil fuels to generate steam for campus wide heating.

Opportunity - To reduce greenhouse gas emissions, reducebuilding Energy Use Intensity (EUI), comply with HB 1390 and (CBPS), supportthe EWU decarbonization plan (currently being drafted), and to reduce theoverall campus energy and operating costs.

Priority – This is a project that would immediately decreasethe carbon footprint of the University by demolishing unused and underutilizedstructures.

Underserved people / communities – Eastern WashingtonUniversity continues to provide opportunities for underserved and diversepopulations. More than 1 in 3 studentsare from diverse backgrounds, 44% are the first in their family to attendcollege, and Eastern offers one of the most affordable and accessibleeducations from a 4-year university. Inaddition, it is well documented that climate change impacts underserved and low-incomecommunities the hardest of all. Thisproject will support underserved populations locally and on a long-term basisglobally by lessening the impacts of human caused climate change.

Operating budget savings – This individual project will helpto reduce operating costs by lowering energy consumption by removing unusedspace from the campus inventory. Currently, energy and fiscal resources arebeing wasted on a small number of facilities that are beyond their useful lifeand are currently vacant or severely underutilized.

Public safety improvements – Removing buildings that arevacant will have an immediate impact on campus safety and security. As they stand, these structures create an attractivenuisance for vandalism and other forms of mischief. Campus police receive a disproportionate numberof reports of vandalism, trespassing, and other security concerns related tothese buildings.

Clarifying details – By removing these buildings form theCampus, EWU will realize significant energy savings, greenhouse gas emissions,and decreased safety concerns. This willalso help to align campus space utilization with current standards.

Current condition of the facility / system – The current facilitieswere constructed in the 1960s or earlier and are in significant disrepair. Their value to the campus does not equate tothe amount of resources that would be required to maintain them, let along tomake improvements so that they were functionally and programmatically appropriatefor their use.

What will the request produce or construct(predesign/design of a building, additional space, etc.)? When will the projectstart/end? Identify if the project can be phased, and if so, which phase isincluded in the request. Provide detailed cost backup.

This project will produce design and demolition documentsthat will ultimately be followed to demolish the existing buildings.

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:31PM

Project Number: 40000169
Project Title: Building Demo for Decarbonization - Morrison, Streeter, & Isle

Description

How would the request address the problem or opportunityidentified in question 1? What would be the result of not taking action?

Not taking action would result in the continued existenceand challenges that the structures create for campus. Wasted resources, safety concerns, higher carbonemissions, and continued degradation of the structures would result.

If approved, this request would directly contribute to therequirement of meeting increasing energy efficiency performance standards andreducing greenhouse gas emissions to levels established by the State of WA,Dept. of Commerce, and Dept. of Ecology. It would also move EWU closer to meeting the University's long-termplanning and sustainability goals.

What alternatives were explored? Why was the recommendedalternative chosen? Be prepared to provide detailed cost backup. If thisproject has an associated predesign, please summarize the alternatives thepredesign considered.

Three options were considered, including; 1)no action, seenoted outcomes above, 2) Remodeling and improving the existing structures wouldrequire a financial commitment that is not supported by the building's use, condition,or value, and 3) Demolish the structures for all of the benefits mentionedabove.

Which clientele would be impacted by the budget request?Where and how many units would be added, people or communities served, etc.

The largest impact would be on the University maintenanceand operation staff. Removing the structureswould result in lower operation and maintenance costs for campus trades. This would free up precious resources thatcould be used elsewhere to maintain and improve other areas and to reduce thepreventative maintenance backlog.

Students would be served by improving campus safety.

The community would be served through the reduction inenergy use and climate related impacts.

Does this project or program leverage non-state funding?If yes, how much by source? If the other funding source requires cost share,also include the minimum state (or other) share of project cost allowable andthe supporting citation or documentation.

None are anticipated at this time.

Describe how this project supports the agency's strategicmaster plan or would improve agency performance. Reference feasibility studies,master plans, space programming and other analyses as appropriate.

This project will support the University's strategic plan,comprehensive campus master plan (in progress), climate action plan, decarbonizationplan (in progress), and the various studies, reports, and predesigns that havebeen mentioned above or are attached for reference. Ultimately, this will reduce the University'senergy use, carbon emissions, and operating costs, while supporting themission, values, and long-term plans for EWU.

Does this project include IT related costs, includinghardware, software, cloud based services, contracts or staff? If yes,attach IT Addendum.

NA

If the project is linked to the Puget Sound ActionAgenda, describe the impacts on the Action Agenda, including expenditure andFTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 OperatingBudget Instructions.

NA

How does this project contribute to meeting thegreenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildingsperformance standards in RCW 19.27A.210, or other statewide goals to reducecarbon pollution and/or improve efficiency?

As mentioned, this project is a result of and directlycontributes to the statewide goals mentioned above with the sole purpose ofreducing greenhouse gas emissions, energy use, and to improve campus energyperformance.

How does this project impact equity in the state? Whichcommunities are impacted by this proposal? Include both demographic andgeographic communities. How are disparities in communities impacted?

Being a state-owned facility, this project would help byreducing costs related to energy use, building operation, and maintenance. It would also help the state meet mandatedenergy goals and serve as an example of responsible use of state funds. Positive impacts and savings will becompounded as the cost of energy and more importantly the impacts of climatechange continue to escalate locally, regionally, and globally.

Local and state economic impacts will be realized by theengineering and construction industries that will be positively impactedthrough the creation of local jobs.

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:31PM

Project Number: 40000169
Project Title: Building Demo for Decarbonization - Morrison, Streeter, & Isle

Description

Is there additional information you would like decisionmakers to know when evaluating this request?
This project is the result and one component of acomprehensive effort to research, plan, and implement options for the mosteffective, economically viable, and technologically feasible way to achieve theenergy performance goals of the state while meeting the mission and values of EasternWashington University.
Is this project eligible for Direct Pay? If yes, includethis project in the Direct Pay Form for inclusion to capitalbudget request submittal (see Chapter 1.7 of the capital budget instructionsfor additional instructions).
Not anticipated at this time.
REAPPROPRIATION: If the project was originally fundedprior to the 2021-23 biennium, describe the project and each subproject,including the original appropriation year, status of the project and anexplanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
There are no growth management impacts, the project is located on the existing Eastern Washington University Campus.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
26C-1	Climate Commit Accou-State	9,527,000				9,527,000
	Total	**9,527,000**	**0**	**0**	**0**	**9,527,000**

		Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
26C-1	Climate Commit Accou-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
The removal of existing buildings would not result in additional FTEs required. It would free up resources to address other maintenance backlog issues on campus.

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000169	40000169
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Building Demo - Decarbonization
OFM Project Number	40000169

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	222,921	MACC per Gross Square Foot	$25
Usable Square Feet	0	Escalated MACC per Gross Square Foot	$25
Alt Gross Unit of Measure			
Space Efficiency	0.0%	A/E Fee Class	B
Construction Type	Dormitories	A/E Fee Percentage	8.96%
Remodel	No	Projected Life of Asset (Years)	0
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start		Predesign End	
Design Start	September-25	Design End	June-26
Construction Start	July-26	Construction End	May-27
Construction Duration	10 Months		

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Project Cost Summary

Total Project	$9,446,224	Total Project Escalated	$9,526,531
		Rounded Escalated Total	$9,527,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$9,527,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$406,904		
Extra Services	$290,000		
Other Services	$282,812		
Design Services Contingency	$97,972		
Consultant Services Subtotal	**$1,077,688**	**Consultant Services Subtotal Escalated**	**$1,081,231**

Construction			
Maximum Allowable Construction Cost (MACC)	$5,520,000	Maximum Allowable Construction Cost (MACC) Escalated	$5,566,500
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$1,061,658		$1,071,532
Non-Taxable Items	$108,854		$109,867
Sales Tax	$585,768	Sales Tax Escalated	$600,565
Construction Subtotal	**$7,276,280**	**Construction Subtotal Escalated**	**$7,348,464**

Equipment			
Equipment	$0		
Sales Tax	$0		
Non-Taxable Items	$0		
Equipment Subtotal	**$0**	**Equipment Subtotal Escalated**	**$0**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$492,257		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$492,257**	**Project Administration Subtotal Escalated**	**$496,836**

Other Costs			
Other Costs Subtotal	**$600,000**	**Other Costs Subtotal Escalated**	**$600,000**

Project Cost Estimate			
Total Project	**$9,446,224**	Total Project Escalated	**$9,526,531**
		Rounded Escalated Total	**$9,527,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$1,081,231		$1,081,231		**$0**
Construction					
Construction Subtotal	$7,348,464		$7,348,464		**$0**
Equipment					
Equipment Subtotal	$0				**$0**
Artwork					
Artwork Subtotal	$0				**$0**
Agency Project Administration					
Project Administration Subtotal	$496,836		$496,836		**$0**
Other Costs					
Other Costs Subtotal	$600,000		$600,000		**$0**
Project Cost Estimate					
Total Project	**$9,526,531**	**$0**	**$9,526,531**	**$0**	**$0**
	$9,527,000	**$0**	**$9,527,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Demolishing existing campus buildings in order to achieve decarbonization goals and state EUI targets
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$406,904			69% of A/E Basic Services
Sub TOTAL	**$406,904**	**1.0000**	**$406,905**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$50,000			
Geotechnical Investigation	$80,000			
Commissioning				
Site Survey	$50,000			
Testing	$20,000			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)	$30,000			
Landscape Consultant	$60,000			
Other				
Insert Row Here				
Sub TOTAL	**$290,000**	**1.0000**	**$290,000**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$182,812			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other - Site Supervision	$100,000			
Sub TOTAL	**$282,812**	**1.0093**	**$285,443**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$97,972			
Other				
Insert Row Here				
Sub TOTAL	**$97,972**	**1.0093**	**$98,883**	Escalated to Mid-Const.

CONSULTANT SERVICES TOTAL	**$1,077,688**		**$1,081,231**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements	$250,000			
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities	$50,000			
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$300,000**	**1.0000**	**$300,000**	
2) Related Project Costs				
Offsite Improvements	$100,000			
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention	$120,000			
Other				
Insert Row Here				
Sub TOTAL	**$220,000**	**1.0000**	**$220,000**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems				
D30 - HVAC Systems				
D40 - Fire Protection Systems				
D50 - Electrical Systems				
F10 - Special Construction				
F20 - Selective Demolition	$5,000,000			
General Conditions				
Insert Row Here				
Sub TOTAL	**$5,000,000**	**1.0093**	**$5,046,500**	
4) Maximum Allowable Construction Cost				

MACC Sub TOTAL	**$5,520,000**		**$5,566,500**	
	$25		*$25 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$552,000			
Other - ESCO OH&P	$509,658			
Insert Row Here				
Sub TOTAL	**$1,061,658**	**1.0093**	**$1,071,532**	
8) Non-Taxable Items				
Other - WSST for Professional Services only	$41,154			
DES Fee	$67,700			
Insert Row Here				
Sub TOTAL	**$108,854**	**1.0093**	**$109,867**	
9) Sales Tax				
Sub TOTAL	**$585,768**		**$600,565**	
CONSTRUCTION CONTRACTS TOTAL	**$7,276,280**		**$7,348,464**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0093**	**$0**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0093**	**$0**	
3) Sales Tax					
Sub TOTAL	**$0**			**$0**	
EQUIPMENT TOTAL	**$0**			**$0**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$47,633				0.5% of total project cost for new and renewal construction
Other					
Higher Ed Artwork Auto-Populate Correction	-$47,633				
ARTWORK TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$492,257				
Additional Services					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$492,257**		**1.0093**	**$496,836**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal	$600,000				
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$600,000**		**1.0000**	**$600,000**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 12

Project Summary

2025 - 2027 Minor Works, Facilities Preservation projects are intended to preserve, protect and extend the lifecycles of specific buildings and building system on the Eastern Washington University Cheney campus. These projects promote quality stewardship of state assets and represent a positive return on investment for the university and the state of Washington.

Project Description

What is the problem/opportunity? Identify: priority,underserved people/communities, operating budget savings, public safetyimprovements & clarifying details. Preservation projects: includeinformation about the current condition of the facility/system.

Preservation projects maintain, preserve, and extend thelife of existing state facilities and assets and do not significantly changethe facility or building footprint to address current or anticipated programchanges. Examples of the projects are included in each subcategory and include:CEB Renewal (standalone), Decarbonization Projects, Building EnvelopeImprovements, HVAC improvements, and Roof Replacements.
Eastern Washington University is requesting $9,850,000 inthis category to address the areas that will increase the life of building systemsand invest in state facilities.

What will the request produce or construct(predesign/design of a building, additional space, etc.)? When will the projectstart/end? Identify if the project can be phased, and if so, which phase isincluded in the request. Provide detailed cost backup.

This request will focus on scope, design, and the constructionof many projects that will improve campus systems and buildings. There are nopredesign studies required for this level of minor works projects. This projectreflects the need for upgrading existing spaces, equipment, or systems toextend the useful lifecycle of portions of if not the entire facility. In mostcases the only new area would be determined by local AHJs who may requireadditional space.

The project(s) will start as soon as the appropriations are approved(approximately July 2025) with the intent of completing the project prior tothe end of the biennium (June 2027). The areas of construction listed in thisrequest have been prioritized by areas and phase, so if the approved funding isless than requested, a portion or smaller scope can be accomplished with theapproved resources. All minor works projects are structured to be completed inthis manner. Current estimates are based upon unit and historic square footcost of design and construction. A detailed budget for each area or projectwill be developed when design is undertaken. That information is available forreview as necessary.

How would the request address the problem or opportunityidentified in question 1? What would be the result of not taking action?

This request addresses specific upgrades and improvements toincrease effective student learning, improve efficiency, extend system’slifecycles, and reduce operating costs overall.

Not taking action would result in the continued degradation of buildingsystems, conditions, and operations. The costs for operations, including energycosts will continue to increase. Systems that exceed their designed lifecyclebecome prime candidates for catastrophic failures that can substantially impactuniversity students and staff. Catastrophic failures are more costly thanplanned upgrades and improvements. Strategic planning for upgrades,improvements, and replacements can avoid many problems that would otherwise negativelyimpact university offerings and increase operating costs.

What alternatives were explored? Why was the recommendedalternative chosen? Be prepared to provide detailed cost backup. If thisproject has an associated predesign, please summarize the alternatives thepredesign considered.

Alternative 1) Renovation of the entire facility becomesa major project renovation. The goal of minor works projects is to extendbuilding and systems lifecycles so that major projects with much larger costsare not necessary. Also, if systems in the

Description

facilities have lifecycle left it ismore cost effective to preserve the system rather than having to demolish orreplace completely. EWU strives to practice good stewardship of state assetsand resources.

Alternative 2) Defer the work – Deferring the work can mitigate capitalcosts, inferior or less efficient systems cost more to operate and maintain.There is also the risk of catastrophic breakdowns or failures that could cause muchmore costly damage.

Alternative 3) Taking the space or system off-line until funding isavailable. – The spaces/systems listed in this request are high priority innature for the safety, security, and operations of this institution. In mostcases shutting down systems or structures is not a viable alternative.

Alternative 4) Do nothing – This alternative is the worst scenario becauseit combines the downsides of items 2 and 3 and is the most costly in thelong-term.

Alternative 5) Renewal or replacement of a portion of the system orfacility. This alternative is selected because it meets the short-term needs ofthe students and the university, it will increase the life expectancy ofsystems and equipment, reduce cost of maintenance, and lower the energy usageby replacing equipment with higher efficiency components.

Alternative 5 is the best case scenario to balance high costs, potentialreduction in instructional delivery, reduce the risk of catastrophic failure,and increase the value and lifecycle of university facilities.

Which clientele would be impacted by the budget request?Where and how many units would be added, people or communities served, etc.

This project serves the entire university community. Customers,students, faculty and staff, and the local community all benefit from a highperforming institution. As stated under the problem/opportunity to beaddressed, the university's core themes are realized when the facility isperforming well. Since these projects are improvements, replacements, andupgrades there would be no new units added but rather the opportunities forgrowth and potential to increase access.

Does this project or program leverage non-state funding?If yes, how much by source? If the other funding source requires cost share,also include the minimum state (or other) share of project cost allowable andthe supporting citation or documentation.

No other funding is anticipated**.**

Describe how this project supports the agency’s strategicmaster plan or would improve agency performance. Reference feasibility studies,master plans, space programming and other analyses as appropriate.

1) Represent the “DNA of EWU”—supporting student access,opportunity, and personal transformation
2) Flexibility — able to respond to changes in technology, pedagogy, andstudent demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make fiscal sense”

Facility Planning Principles

The analysis of the campus, past planning studies, and input from EWU students,faculty, and staff identified the following principles to guide the masterplan:

1) Carefully evaluate each project regarding renovation vs. replacementopportunities.
2) Plan and implement to optimize utilization and efficiency ofbuildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction ofthe campus carbon footprint, reducing energy costs, reducing maintenance andoperations commitments, and increasing the lifecycle of related systems and ofthe facility in its entirety.
4) Improve the overall character of the campus with the implementation of eachproject.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodatesfuture campus expansion beyond

Description

existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkagesacross campus.

Does this project include IT related costs, includinghardware, software, cloud based services, contracts or staff? If yes,attach IT Addendum.

This project does not fund the development or acquisition ofnew or enhanced software or hardware system or service. This facility will usealready established software and hardware platforms on campus.

If the project is linked to the Puget Sound ActionAgenda, describe the impacts on the Action Agenda, including expenditure andFTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 OperatingBudget Instructions.

NA

How does this project contribute to meeting thegreenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildingsperformance standards in RCW 19.27A.210, or other statewide goals to reducecarbon pollution and/or improve efficiency?

EWU is in the final stages of completing a Decarbonization Plan that will inform Minor Works and serve to keep energy efficiency at the forefront of all of EWU's decisions. Preserving and upgrading existing systems to make them function better, perform better, and last longer all contribute to the State's and EWU's goals.

How does this project impact equity in the state? Whichcommunities are impacted by this proposal? Include both demographic andgeographic communities. How are disparities in communities impacted?

Being a state-owned facility, this project would help mymodernizing the building systems and by reducing costs related to energy use,building operation, and maintenance. Itwould also help the state meet mandated energy goals and serve as an example ofresponsible use of state funds. Positiveimpacts and savings will be compounded as the cost of energy and moreimportantly the impacts of climate change continue to escalate locally,regionally, and globally.

The project directly serves the EWU campus and students andwill be leveraged to support current academic programs and learningopportunities.

Local and state economic impacts will be realized by theengineering and construction industries that will be positively impactedthrough the creation of jobs and the growth of technologies related tosustainability and energy efficiency.

Is this project eligible for Direct Pay? If yes, includethis project in the Direct Pay Form for inclusion to capital budgetrequest submittal (see Chapter 1.7 of the capital budget instructions foradditional instructions).

NA

Is there additional information you would like decisionmakers to know when evaluating this request?

Eastern encourages student to explore their futures thoughexperimental, multidisciplinary, impact-oriented learning. Student outcomes areclearly a response to the values of EWU:

We ignite change

Eastern Washington University engages a diversity of students andignites generational transformation. We inspire students through engagedlearning experiences that encourage pathways to graduation. We collaborate withfamilies, employers, and communities to solve complex issues and improvequality of life. Created as the public higher education institution for thisregion, EWU is committed to meeting current and emerging needs. We recognizethe evolution of our communities, and we lead collaborative efforts forsustainable growth and development.

We embrace equity and social justice

We are recognized as a model diversity-serving institution.We embrace changing demographics and changing societal needs. Throughculturally responsive curricula and campus activities, we work tirelessly topromote understanding and reduce disparity and inequity. Communities flourishwhen multiple perspectives converge to create a powerful vision for all.

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370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: 40000171
Project Title: Minor Works: Preservation 2025-27

Description

EWUfosters a campus life that is vibrant, welcoming, and supportive of all. Weprovide opportunities for open thought and dialogue. As the state's premier publicdiversity-serving institution, we are committed to catalyzing an equitable andinclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, andopportunities—that promote interdisciplinary collaboration and innovativeinstruction. We celebrate faculty and staff who make extraordinarycontributions to our students and our mission. EWU drives the change thatpromotes social and technological advancement, environmental and economicsustainability, and community health. Our curricula and our collaborations aredesigned strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers,and communities. We commit to applied research and community partnerships thatengage and inspire while preparing students for success after graduation. Wedevelop the professional workforce and strengthen our economy through strategicand creative programming.

Eastern's facilities are in integral part of our education mission and thequality of these spaces directly enhance the student experience andsubsequently their personal and professional success. Eastern's curricula andexperiences inspire and engage. The facilities on the Cheney campus are a keycomponent in preparing students, improving completion rates and buildingcommunity.

REAPPROPRIATION: If the project was originally fundedprior to the 2021-23 biennium, describe the project and each subproject,including the original appropriation year, status of the project and anexplanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
057-1	State Bldg Constr-State	9,850,000				9,850,000
	Total	**9,850,000**	**0**	**0**	**0**	**9,850,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				

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370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: 40000171
Project Title: Minor Works: Preservation 2025-27

Funding

Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

SubProjects

SubProject Number: 40000180
SubProject Title: Computer Engineering Building Renewal (standalone)

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370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000180**
SubProject Title: **Computer Engineering Building Renewal (standalone)**

Project Phase Title: Design & Construction
Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 12

Project Summary

Interior renovations to enable another department to utilize the building while increasing collaboration and communication between departments.

Project Description

What is the problem/opportunity? Identify: priority,underserved people/communities, operating budget savings, public safetyimprovements & clarifying details. Preservation projects: includeinformation about the current condition of the facility/system.

Preservation projects maintain, preserve, and extend thelife of existing state facilities and assets and do not significantly changethe facility or building footprint to address current or anticipated programchanges. Examples of the projects are included in each subcategory and include:CEB Renewal (standalone), Decarbonization Projects, Building EnvelopeImprovements, HVAC improvements, and Roof Replacements.
Eastern Washington University is requesting $2,000,000 to address interior improvements needed at theComputer Engineering Building.

What will the request produce or construct(predesign/design of a building, additional space, etc.)? When will the projectstart/end? Identify if the project can be phased, and if so, which phase isincluded in the request. Provide detailed cost backup.

This request will focus on design and construction of interiordepartmental improvements at CEB to allow another engineering department toutilize a portion of the third floor. This will free up space elsewhere on campus but more importantly allowthe two engineering divisions to collaborate.

The project(s) will start as soon as the appropriations are approved(approximately July 2025) with the intent of completing the project prior tothe end of the biennium (June 2027). The areas of construction listed in thisrequest have been prioritized by areas and phase, so if the approved funding isless than requested, a portion or smaller scope can be accomplished with theapproved resources. All minor works projects are structured to be completed inthis manner. Current estimates are based upon unit and historic square footcost of design and construction. A detailed budget for each area or projectwill be developed when design is undertaken. That information is available forreview as necessary.

How would the request address the problem or opportunityidentified in question 1? What would be the result of not taking action?

This request addresses specific upgrades and improvements to increase effective student learning, improve efficiency, extend system's lifecycles, and improve collaboration between departments.

Not taking action would result in a continued teaching and learning environment that does not fully support faculty or students to achieve to their potential.

What alternatives were explored? Why was the recommendedalternative chosen? Be prepared to provide detailed cost backup. If thisproject has an associated predesign, please summarize the alternatives thepredesign considered.

Alternative - Do nothing – In this case, the only other alternative is to donothing and thereby lessen the impact of both divisions.

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000180**
SubProject Title: **Computer Engineering Building Renewal (standalone)**

Which clientele would be impacted by the budget request?Where and how many units would be added, people or communities served, etc.

This project serves students, faculty, and staff. As stated under the problem/opportunity to beaddressed, the university's core themes are realized when the facility isperforming well. Since these projects are improvements, replacements, andupgrades there would be no new units added but rather the opportunities toincrease efficiency.

Does this project or program leverage non-state funding?If yes, how much by source? If the other funding source requires cost share,also include the minimum state (or other) share of project cost allowable andthe supporting citation or documentation.

No other funding is anticipated**.**

Describe how this project supports the agency's strategicmaster plan or would improve agency performance. Reference feasibility studies,master plans, space programming and other analyses as appropriate.

1) Represent the "DNA of EWU"—supporting student access,opportunity, and personal transformation
2) Flexibility — able to respond to changes in technology, pedagogy, andstudent demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make fiscal sense"

Facility Planning Principles

The analysis of the campus, past planning studies, and input from EWU students,faculty, and staff identified the following principles to guide the masterplan:

1) Carefully evaluate each project regarding renovation vs. replacementopportunities.
2) Plan and implement to optimize utilization and efficiency ofbuildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction ofthe campus carbon footprint, reducing energy costs, reducing maintenance andoperations commitments, and increasing the lifecycle of related systems and ofthe facility in its entirety.
4) Improve the overall character of the campus with the implementation of eachproject.
5) Create and follow a framework that welcomes EWU's neighbors and accommodatesfuture campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkagesacross campus.

Does this project include IT related costs, includinghardware, software, cloud based services, contracts or staff? If yes,attach IT Addendum.

This project does not fund the development or acquisition ofnew or enhanced software or hardware system or service. This facility will usealready established software and hardware platforms on campus.

If the project is linked to the Puget Sound ActionAgenda, describe the impacts on the Action Agenda, including expenditure andFTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 OperatingBudget Instructions.

NA

How does this project contribute to meeting thegreenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildingsperformance standards in RCW 19.27A.210, or other statewide goals to reducecarbon pollution and/or improve efficiency?

This interior work would not have an impact.

How does this project impact equity in the state? Whichcommunities are impacted by this proposal? Include both demographic andgeographic communities. How are disparities in communities impacted?

The project directly serves the EWU campus and students andwill be leveraged to support current academic programs and learningopportunities.

Project Number: 40000171
Project Title: Minor Works: Preservation 2025-27

SubProjects

SubProject Number: 40000180
SubProject Title: Computer Engineering Building Renewal (standalone)

Local and state economic impacts will be realized by theengineering and construction industries that will be positively impactedthrough the creation of ongoing work on the campus.

Is this project eligible for Direct Pay? If yes, includethis project in the Direct Pay Form for inclusion to capital budgetrequest submittal (see Chapter 1.7 of the capital budget instructions foradditional instructions).
NA

Is there additional information you would like decisionmakers to know when evaluating this request?
Eastern encourages student to explore their futures thoughexperimental, multidisciplinary, impact-oriented learning. Student outcomes areclearly a response to the values of EWU:

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Eastern Washington University engages a diversity of students andignites generational transformation. We inspire students through engagedlearning experiences that encourage pathways to graduation. We collaborate withfamilies, employers, and communities to solve complex issues and improvequality of life. Created as the public higher education institution for thisregion, EWU is committed to meeting current and emerging needs. We recognizethe evolution of our communities, and we lead collaborative efforts forsustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution.We embrace changing demographics and changing societal needs. Throughculturally responsive curricula and campus activities, we work tirelessly topromote understanding and reduce disparity and inequity. Communities flourishwhen multiple perspectives converge to create a powerful vision for all. EWUfosters a campus life that is vibrant, welcoming, and supportive of all. Weprovide opportunities for open thought and dialogue. As the state's premier publicdiversity-serving institution, we are committed to catalyzing an equitable andinclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, andopportunities—that promote interdisciplinary collaboration and innovativeinstruction. We celebrate faculty and staff who make extraordinarycontributions to our students and our mission. EWU drives the change thatpromotes social and technological advancement, environmental and economicsustainability, and community health. Our curricula and our collaborations aredesigned strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers,and communities. We commit to applied research and community partnerships thatengage and inspire while preparing students for success after graduation. Wedevelop the professional workforce and strengthen our economy through strategicand creative programming.

Eastern's facilities are in integral part of our education mission and thequality of these spaces directly enhance the student experience andsubsequently their personal and professional success. Eastern's curricula andexperiences inspire and engage. The facilities on the Cheney campus are a keycomponent in preparing students, improving completion rates and buildingcommunity.

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370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: 40000171
Project Title: Minor Works: Preservation 2025-27

SubProjects

SubProject Number: 40000180
SubProject Title: Computer Engineering Building Renewal (standalone)

REAPPROPRIATION: If the project was originally fundedprior to the 2021-23 biennium, describe the project and each subproject,including the original appropriation year, status of the project and anexplanation why a reappropriation is needed.

NA

Location

City: Cheney **County:** Spokane **Legislative District:** 009

Project Type

Facility Preservation (Minor Works)

Growth Management impacts

No impacts

Funding

Acct Code	Account Title	Expenditures: Estimated Total	Prior Biennium	Current Biennium	2025-27 Fiscal Period: Reapprops	New Approps
057-1	State Bldg Constr-State	2,000,000				2,000,000
	Total	**2,000,000**	**0**	**0**	**0**	**2,000,000**

Acct Code	Account Title	Future Fiscal Periods: 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

SubProject Number: 40000172
SubProject Title: Facilites Preservation - Clean Building Compliance

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370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000172**
SubProject Title: **Facilites Preservation - Clean Building Compliance**

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 12

Project Summary

Facilities Preservation - Clean Building Act and Campus Decarbonization - Eastern Washington University in compliance with House Bill 1257 and 1390 is requesting funding to improve the efficiency and reduce the university's carbon footprint of campus buildings.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Art, Communications, Digital Media (RTV), Theatre and Music's buildings systems are at the end of their functional lifecycle and need major upgrades and renewals. These systems, due to their age and original design are not as energy efficient as they once were and certainly do not come close to the efficiencies available through current technologies. These systems include but are not limited to: Heating and Ventilation equipment and distribution systems, Temperature controls and Building Automation Systems (BAS), lighting upgrades and lighting controls. These systems are 1970s generation which are costly to operate primarily as a result to their lack of energy efficient equipment and methods of operation.

On May 7, 2019, the Clean Buildings bill, House Bill 1257, was signed into law. The objective is to lower costs and pollution from fossil fuel consumption in the state's existing buildings, especially large commercial buildings. The law requires the Washington State Department of Commerce to develop and implement an energy performance standard for these buildings and provide incentives to encourage efficiency improvements.

Eastern Washington University requests $2,000,000 in this category to address building issues related to the House Bill 1257 and 1390. This will increase building efficiency and reduce utility operating costs.

Eastern Washington University's Core Themes include:

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.

Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.

Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000172**
SubProject Title: **Facilites Preservation - Clean Building Compliance**

Current Facilities Condition Assessment (FCA) for Art, Communications, Digital Media (RTV), Theatre, and Music.

1 - Superior
2 - Adequate
3 - Fair; System approaching end of expected lifecycle
4 - Needs Improvement, Limited Functionality
5 -Needs Improvement, Marginal Functionality

The Art Building was constructed in 1972 and has a total FCA of 3.5 with Services FCA of 3.5. HVAC/Controls FCA of 4; Fire Protection FCA of 5; and Electrical FCA of 4.
The Communications Building was constructed in 1970 and has a total FCA of 2.6. Services FCA is 3.4; with HVAC/Controls FCA of 4; and Electrical of 4.
The Theatre Building was constructed in 1970 and has a total FCA of 3.2 with Service FCA of 4. HVAC/Controls FCA of 4; Fire Protection FCA of 4; and Electrical FCA of 3.
Digital Media Building (RTV) was constructed in 1972 and has total FCE of 2.1 with Services FCA of 2.8. HVAC/Controls FCA is 3; Fire Protection FCA is 5; and Electrical FCA is 3.
Music Building was constructed in 1970 and has a total FCA of 2.7 with Service FCA of 3.5. HVAC/Controls FCA is 4; Fire Protection FCA is 4; and Electrical FCA is 3.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This project will address the facilities at the top of the list Eastern prioritized for compliance with HB1257. The facilities at the top of that list are the Art Building, Communications Building, Music Building, Theater Building and Radio/Television (now call Digital Media) Making this improvement will reduce the cost of utilities to operation these facilities.

This project, once funded would develop, design and construct improvements to heating, ventilation, air conditioning and electric equipment as well as improve systems thus increase efficiency and reduce the carbon footprint of these buildings. This project reflects the need of upgrading existing spaces, equipment, or systems to extend the useful lifecycle of portions of or even the entire facility. In most cases the only new square feet added would be determined by local jurisdiction that have the authority to require addition space be added.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with the approved resources. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design is undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action? Retrofitting HVAC systems and equipment provides several other benefits:
1. **Energy Savings** - Retrofitting HVAC equipment is one of the quickest ways to solve chronic problems with high energy consumption. On average, small offices and retail establishments reduce energy consumption by 35% when retrofitting HVAC systems and equipment. In cold weather climates, this number can jump to as high as 40%.
2. **Increased HVAC Lifespan** - Replacing defective parts gives the HVAC equipment new life. In fact, sometimes this can even extend the life of a system by several years, spending far less money than a whole system replacement.

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000172**
SubProject Title: **Facilites Preservation - Clean Building Compliance**

3. **Flexibility** - Commercial spaces are constantly changing interiors are rearranged, occupants move in and out, and infrastructure requirements change. Retrofitting HVAC systems allows for continued adaption of the needs of occupants without huge investments.
4. **Improved Comfort** - A retrofitted HVAC system will operate with more consistency than an older or poorly maintained system. This consistency leads to more control over temperature in humidity, resulting in improved comfort for occupants.
5. **New Technology** - Not only do retrofitted systems operate more consistently, but they also operate more efficiently and independently. This adds to energy savings, as mentioned, but it also decreases to costs of maintenance and service because the new part will be more dependable.
6**. Faster Return on Investment (ROI)** - Retrofitting equipment is much cheaper than investing in a whole commercial HVAC system replacement. Given the energy and service savings of retrofitted equipment, return on investment is achieved quicker than a full replacement.

Benefits of Lighting Control Systems
1. **Increased Energy Efficiency** - Smart lamps can be 80% more efficient than standard lighting lamps, only use lighting when space is in use and if programmed properly lighting is turned off when space does not have a programed activity scheduled.
2. **Better programming of lighting needs to align with space usage** - Lighting can be scheduled to align with space use. Spaces that are used less will be “asleep” saving on electricity and wear on lamps.
3. **Enhanced Convenience** - Users can make on the spot changes when needed and after that need is fulfilled system returns to standard programming processes.
4. **Improved Safety** - Allows for lighting to activate when needed for personal safety and property protection.

Improvement of the Building Envelop
The envelope serves to protect the interior while facilitating climate control. Building envelope arguably encompasses the entire exterior building system of the structure. This includes windows, doors, roof, floor, foundations, and insulation.

Improving Indoor Air Quality (IAQ)
Washington State Department of Health states indoor air quality can have a significant effect on your health. Studies show that people spend 65 to 90 percent of their time indoors, and indoor air can be two to five times more polluted than outdoor air. The young, elderly, chronically ill, and those with respiratory or cardiovascular disease are often the most impacted by poor indoor air quality.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Alternative 1) Renovation of the entire facility is a major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major projects with major costs are not necessary. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This again is a good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also a risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not a viable alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3.

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000172**
SubProject Title: **Facilites Preservation - Clean Building Compliance**

Space is not available, can become unusable, may be a safety and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected since it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best case scenario to balance high costs, potential reduction in instructional delivery, reducing the risk of catastrophic failure and increasing the value and lifecycle of university facilities.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the entire university community. That includes our customers, students, as well as the faculty and staff that serve the student on their scholastic journey. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university's core themes are improved when we improve our facilities. Since these projects are improvements, replacements, and upgrades there would be no new units added but rather the opportunities for growth and potential to increase access for people.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are no matching federal, state, local or private funds associate with this request**.**

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Strategic Plan – core themes listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: 40000171
Project Title: Minor Works: Preservation 2025-27

SubProjects

SubProject Number: 40000172
SubProject Title: Facilites Preservation - Clean Building Compliance

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1390
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan
> Americans with Disabilities Act - 2010 Design Standards

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000172**
SubProject Title: **Facilites Preservation - Clean Building Compliance**

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rates and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

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SubProjects

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SubProject Title: Facilites Preservation - Clean Building Compliance

Growth Management impacts

Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	2,000,000				2,000,000
	Total	**2,000,000**	**0**	**0**	**0**	**2,000,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

SubProject Number: 40000173
SubProject Title: Facilities Preservation - Exterior Building Envelope

OFM

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:32PM

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000173**
SubProject Title: **Facilities Preservation - Exterior Building Envelope**

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 12

Project Summary

Facilities Preservation - Exterior Building Envelope - Eastern Washington University in a effort provide quality stewardship of state and university facilities is requested funding to upgrade and repair building envelopes on Cheney campus buildings.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

The Cheney campus of Eastern Washington University has approximately seventy (70) buildings with the average year of construction being 1970. While some of our facilities were constructed after that date, the majority were constructed in the 1950's and 1960's. The effects of time and weather have resulted in many of the buildings requiring more attention in the areas of: Increased energy consumption required to maintain a temperate interior climate; stop leaks mainly due to the age of existing masonry repairs systems on a case-by-case basis where structural settlement or other shifting has occurred. The effects of compromised building envelopes also present indoor air quality issues that have affected students, faculty, and staff in various buildings at various times. Most of our buildings have masonry exterior perimeters that have not been address for many years, in some case since the buildings were originally constructed.

This request is for the improvements and upgrades of Exterior Building Envelopes on buildings on Eastern's Cheney Campus. The request is for $2,000,000. Huston Hall, John F. Kennedy Library, Performing Arts Pavilion, Physical Education Activities, and Cheney Hall.

Technologies related to building construction have advanced considerably since these facilities were originally constructed. New window and door systems provide much better insulating properties than similar systems designed in the last century and will go far toward mitigating energy loss. Building envelope materials and techniques for application have eliminated many time-dependent leak issues that are present in these older buildings. All buildings require exterior surface maintenance/upgrades on occasion to maintain the qualities of the building envelope, and it is time for a number of our buildings to receive such attention.

These requests are priority based upon on-going assessment, review and prioritization of campus facilities operations and the needs to support effective operation management. These projects were identified through evaluation of our current systems by architectural engineering consultants, regulatory agencies and plant staff. We captured the costs to maintain and operate the existing structures through our computerized maintenance management system (CMMS) and identified the properties and systems that are generating high operation costs and concerns. Once the maintenance items are captured, we then prioritized these projects to improve and extend the lifecycle of our systems and equipment and to reduce the maintenance and operating cost for the university.

Eastern Washington University's Core Themes include:

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.

Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000173**
SubProject Title: **Facilities Preservation - Exterior Building Envelope**

and successful in their chosen careers.

Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Building Shell Current Facilities Condition Assessment (FCA) for Huston Hall, Isle Hall, JFK Library, Martin Hall, Perform Arts Pavilion, Physical Education Activities, Cheney and Cadet Halls.

1 - Superior
2 - Adequate
3 - Fair; System approaching end of expected lifecycle
4 - Needs Improvement, Limited Functionality
5 -Needs Improvement, Marginal Functionality

Huston - Built 1915 remodeled 1984, Shell - 2.7 FCA
Isle Hall - Built 1956, Shell 3.9 FCA
JFK Library - Built 1968 remodeled 1995, Shell 2.5 FCA
Martin Hall - Built 1937 remodeled 1982, Shell 3.3 FCA
Performing Art Pavilion - Built 1975, Shell 2.7 FCA
Physical Education Activities - Built 1972, Shell 2.7 FCA
Cheney Hall - Built 1966, Shell - 2.8 FCA
Cadet Hall - Built 1956, Shell - 3.0 FCA

Facilities preservation projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.

Eastern building maintenance staff together with architectural and engineering consultants have identified and prioritized a condition report for our numerous campus structures. From this list building specific projects will be executed for the highest priority facilities based on certain criteria. These projects will install new windows and doors, upgrade exterior masonry, and minor structural and weatherization repairs based on the priority list.

Once funding is approved, we will design and construct projects that will replace or improve the systems or equipment indicated in the proposal. Design on these project will start as soon as funding is approved in July of 2025. Construction will follow as soon as the design and bid for the project are completed. These projects will be scheduled for construction

SubProjects

SubProject Number: 40000173
SubProject Title: Facilities Preservation - Exterior Building Envelope

throughout the biennium in coordination with other departments to minimize disruptions, to work around seasonal weather conditions that are related to the scope of work, and finally depending upon the current workload of university staff, implement the projects or manage the contractor that installs the projects.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phased, so if the approved funding is less than requested, a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

Requests contained in Minor Works Preservation are already developed to be phased once funding is approved. The university understands that funding will not always be available at the level of the request, therefore we plan our projects to be dynamic and flexible with the funding that is made available. We will either reduce the scope of specific projects or reduce the facilities being addressed in this request.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
This project will decrease energy consumption related to each facility. The project will also reduce damage to various types of equipment due to leaks within the buildings. By not taking action to replace leaky windows, doors, and masonry the university will not be making the most efficient use of our allocated funds. Instead, we will continue to spend more on energy consumption which results in spending less on energy conservation. Unfortunately, the result of taking no action will increase the potential for systems not to perform as needed in all situations. Without addressing the critical and key facilities issues, operation costs will continue to rise. This includes regular preventative actions, demand maintenance, and utility costs associated with lower performing equipment and systems. This impacts the ability to provide a safe, comfortable and accessible campus for all that use it.

As is the case with reduction of approved funding, the university will prioritize the highest needed projects and defer other as required. In many cases there will be an additional burden on our operation budgets. Currently, our estimates for this project are based upon cost per square foot or budgetary estimate provide by paid consultants or internal staff generated estimates. Once funding is approved, and design is underway, more detailed cost estimate will be developed and reviewed to provide information for project implementation and good stewardship of state resources.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.

Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

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SubProject Number: **40000173**
SubProject Title: **Facilities Preservation - Exterior Building Envelope**

Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alt**ernative 5)** Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the students on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Strategic Plan – University strategic core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.

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SubProjects

SubProject Number: **40000173**
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5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

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SubProjects

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Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
Eastern's facilities are in integral part of our education mission and the quality of these spaces directly enhance the student experience and subsequently their personal and professional success. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rates and building community.

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Project Title: Minor Works: Preservation 2025-27

SubProjects

SubProject Number: 40000173
SubProject Title: Facilities Preservation - Exterior Building Envelope

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
Not Applicable

Funding

Acct Code	Account Title	Expenditures: Estimated Total	Expenditures: Prior Biennium	Expenditures: Current Biennium	2025-27 Fiscal Period: Reapprops	2025-27 Fiscal Period: New Approps
057-1	State Bldg Constr-State	2,000,000				2,000,000
	Total	**2,000,000**	**0**	**0**	**0**	**2,000,000**

Acct Code	Account Title	Future Fiscal Periods: 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

SubProject Number: 40000174
SubProject Title: Facilites Preservation - HVAC Improvments

OFM

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Project Number: **40000171**
Project Title: **Minor Works: Preservation 2025-27**

SubProjects

SubProject Number: **40000174**
SubProject Title: **Facilites Preservation - HVAC Improvments**

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 12

Project Summary

Facilites Preservation - HVAC Improvements - Eastern Washington University's planning process includes projects that will upgrade, renew and replace Heating, Ventilation and Air Conditioning Systems and temperature controls on various academic buildings. The intent is to improve quality of spaces, reduce energy and operating costs and provide a safe, healthy and quality spaces for the university students and staff.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

The Eastern campus consist of approximately 3,000,000 gross square feet of facilities of which approximately 75% are state funded facilities. There are many older buildings that are in current need of Heating, Ventilation and Air Conditioning equipment renewal and upgrades to keep the buildings operating and providing quality spaces for student instruction and other activities related to campus. These projects were selected through evaluation of our current systems by engineering consultants, regulatory agencies and operating staff.

This request is to upgrade, improve and replace Heating Ventilation and Air Conditioning equipment on Kingston Hall and Cheney Hall. This request is for $2,000,000 to improve the heating and cooling operations on these academic buildings.

These requests are priority based upon on-going assessment, review and prioritization of campus facilities operations and the needs to support effective operation management. These projects were identified through evaluation of our current systems by architectural engineering consultants, regulatory agencies and plant staff. We captured the costs to maintain and operate the existing structures through our computerized maintenance management systems (CMMS) and identified the properties and systems that are generating high operation costs and concerns. Once the maintenance items are captured, we then prioritized these projects to improve and extend the lifecycle of our systems and equipment and to reduce the maintenance and operating cost for the university.

Current Facilities Condition Assessment (FCA)

1 - Superior
2 - Adequate
3 - Fair; System approaching end of expected lifecycle
4 - Needs Improvement, Limited Functionality
5 - Needs Improvement, Marginal Functionality

Buildings under consideration

Cheney Hall – Overall 2.6; Services 3.0; HVAC/controls 3.5 ;Fire Protection 5; Electrical 3
Kingston Hall – Overall 2.5; Services 3.1; HVAC/controls 3.75; Fire Protection 4; Electrical 3
Showalter Hall – Overall 2.6; Services 3.6; HVAC/controls 4; Fire Protection 3; Electrical 4

Eastern Washington University's Core Themes include:

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students

SubProjects

SubProject Number: 40000174
SubProject Title: Facilites Preservation - HVAC Improvments

from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.

Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.

Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Facilities preservation projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
Eastern building maintenance staff together with architectural and engineering consultants have identified and prioritized a condition report for our numerous campus structures. From this list building specific projects will be executed for the highest priority facilities based on certain criteria.

These projects will improve, renew, and upgrade HVAC and temperature controls systems for the buildings listed. Once funding is approved, we will design and construct projects that will replace or improve the systems or equipment indicated in the proposal. Requests contained in Minor Works Preservation are already developed to be phased once funding is approved. The university understands that funding will not always be available at the level of the request, therefore we plan our projects to be dynamic and flexible with the funding that is made available. We will either reduce the scope of specific projects or reduce the facilities being addressed in this request.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phased, so if the approved funding is less than requested, a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action? These updates are focused on improving heating and cooling within these academic building. This will improve performance, energy efficiency and indoor air quality (IAQ). These improvements will also increase the lifecycle of the building at a lower cost than a full building remodel.

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Unfortunately, the result of taking no action will increase the potential for systems not to perform as needed in all situations. Without addressing the critical and key facilities issues, operation costs will continue to rise. This includes regular preventative actions, demand maintenance, and utility costs associated with lower performing equipment and systems. This impacts the ability to provide a safe, comfortable, and accessible campus for all that use it.

As is the case with reduction of approved funding, the university will prioritize the highest needed project and defer other as required. In many cases there will be an additional burden on our operation budgets. Currently, our estimates for this project are based upon cost per square foot or budgetary estimate provide by paid consultants or internal staff generated estimates. Once funding is approved, and design is underway, more detailed cost estimate will be developed and reviewed to provide information for project implementation and good stewardship of state resources.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities. Project costs are currently estimate at rough order of magnitude until our design consultants can program and develop the improvements. If funding is approved a full detailed cost estimate would be available for review, if requested.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the students on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units

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added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Strategic Plan – University strategic core themes are listed above.

Facilities Master Plan - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including

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expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
Eastern's facilities are in integral part of our education mission and the quality of these spaces directly enhance the student experience and subsequently their personal and professional success. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

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We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rates and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
Not Applicable

Funding		Expenditures			2025-27 Fiscal Period	
Acct Code	Account Title	Estimated Total	Prior Biennium	Current Biennium	Reapprops	New Approps
057-1	State Bldg Constr-State	2,000,000				2,000,000
	Total	**2,000,000**	**0**	**0**	**0**	**2,000,000**

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		Future Fiscal Periods			
		2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

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SubProject Title: Facilites Preservation - Roof Replacements

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Project Title: **Minor Works: Preservation 2025-27**

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SubProject Number: **40000175**
SubProject Title: **Facilites Preservation - Roof Replacements**

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 12

Project Summary

Facilites Preservation - Roof Replacements - Renewal, replacement and major roofing repairs on Eastern Washington University's Cheney campus allow for high quality instructional and student activity spaces, as well as reduce campus maintenance costs and increase the life span of campus buildings.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern Washington University operates and maintains approximately (70) buildings on Cheney's campus with roof construction of varied age, condition, and assembly. The largest percentage of EWU buildings have flat roofs, with a small percentage having folded plate, or traditional style sloped roofs. EWU continues to spend an exceeding amount of time and capital to repair and maintain building interiors that are damaged or ruined due to roof leaks caused by ongoing deteriorating of roof assemblies and roof details. Wet ceilings and floors in public spaces, mechanical spaces, and maintenance areas become a safety concern for obvious reasons. As well, roof assemblies with wet "polyiso" roof insulation, common to most roof assemblies on this campus, have lost thermal properties that keep buildings cooler in the summer and warmer in the winter. This condition results in higher energy costs while trying to maintain a range of temperature that is conducive to instruction and learning.

The goal of EWU through long term planning, maintenance, and prioritization is to optimize the performance of our roof systems over time. It is imperative that roofs ranked in poor condition according to our Condition Facility Assessment, and identified with ongoing roof survey work, be repaired or replaced. In support of this approach in 2018 EWU enlisted Northwest Roof Consultants, Inc.to perform a campus wide roof assessment of (17) buildings. The consulting teamwork and analysis had the support of historical maintenance data, building assembly details, and previous roof project data compiled by EWU. The survey includes assessment of overall roof condition through observation, moisture scanning, roof coring, and includes a summary of potential cost for repair or replacement of existing roof systems. The assessment is to serve as support for implementing both current and future repair and replacement projects.

EWU is requesting $2,000,000 to support our ongoing efforts to improve campus wide roofing with the following buildings being our focus moving forward: Showalter Hall, Monroe Hall, Physical Education Classrooms, The Art Building, and Sutton Hall. A phased approach for roofs currently identified for replacement is not under consideration. However, a phased approach will be considered for repair type projects. Overall roof condition, cost, and warranty renewal or extension are determining factors in how the project will be phased, and how funds will be allocated.

These requests are priority based upon on-going assessment, review and prioritization of campus facilities operations and the needs to support effective operation management. These projects were identified through evaluation of our current systems by architectural engineering consultants, regulatory agencies and plant staff. We captured the costs to maintain and operate the existing structures/systems through our computerized maintenance management systems (CMMS) and identified the properties and systems that are generating high operation costs and concerns. Once the maintenance items are captured, we then prioritized these projects to improve and extend the lifecycle of our systems, equipment and to reduce the maintenance and operating cost for the university.

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Facilities Condition Assessment (FCA) Scoring
1 - Superior
2 - Adequate
3 - Fair; System approaching end of expected lifecycle
4 - Needs Improvement, Limited Functionality
5 -Needs Improvement, Marginal Functionality

Showalter Hall – Roof FCA3.0
Monroe Hall – Roof FCA 3.0
Physical Education Classroom – Roof FCA 3.0
Art Building – Roof FCA 3.0
Sutton Hall – 2.5

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Facilities preservation projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issues, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
Eastern building maintenance staff together with architectural and engineering consultants have identified and prioritized a condition report for our numerous campus structures/systems. From this list building specific projects will be executed for the highest priority facilities based on certain criteria.

Ongoing maintenance and repair within our academic classrooms, common spaces, and faculty and staff offices cause interruption to instruction and effect overall program inefficiency, building performance, and overall operations. Addressing

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the health of the roof with a “from the top down” policy is key to eliminating these types of issues in advance of their arrival. Additionally, this approach benefits the performance and longevity of the roof system for the short and long term. In order to achieve the expected lifecycle of a roof system, continual capital support should be allocated to this important but often overlooked element of infrastructure to ensure that small roof issues do not become larger operational or public safety problems.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phased, so if the approved funding is less than requested, a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
These updates are focused on improving roofing on academic and student activity buildings. Upgrades and replacement of roofs and roofing specialties improves the quality of the interior spaces and prevents damage to other systems in the buildings. Roofs have predetermined lifecycles and university maintenance staff and maintenance programs support longevity of roofing and other systems.

Unfortunately, the result of taking no action will increase the potential for systems not to perform as needed in all situations. Without addressing the critical and key facilities issues, operation costs will continue to rise. This includes regular preventative actions, demand maintenance, and utility costs associated with lower performing equipment and systems. This impacts the ability to provide a safe, comfortable, and accessible campus for all that use it. As is the case with reduction of approved funding, the university will prioritize the highest needed project and defer other as required. In many cases there will be an additional burden on our operation budgets.

Currently, our estimates for this project are based upon cost per square foot or budgetary estimate provide by paid consultants or internal staff generated estimates. Once funding is approved, and design is underway, more detailed cost estimate will be developed and reviewed to provide information for project implementation and good stewardship of state resources.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3.

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Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the students on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase. These projects do not add any new units but provide the ability for the university to use all of its capacity as needed for student instruction and reduce the risk that portion of the these building will not be affective due to roof leaks and other maintenance issues.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Strategic Plan – University strategic core themes are listed above.

Facilities Master Plan - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.

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4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society

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reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
Eastern's facilities are in integral part of our education mission and the quality of these spaces directly enhance the student experience and subsequently their personal and professional success. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

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Project Type

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Project Type
Facility Preservation (Minor Works)

Growth Management impacts
Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	1,850,000				1,850,000
	Total	**1,850,000**	**0**	**0**	**0**	**1,850,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

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Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000171	40000171
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:33PM

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 13

Project Summary

2025 - 2027 Minor Works, Health, Safety and Code Compliance projects are targeted to improve health and safety in and around campus facilities. Compliance with local and regional regulatory agencies is also addressed within this category to update and improve responses to codes and other compliance requirements around safety and health of campus users.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Preservation projects maintain, preserve, and extend the life of existing state facilities and assets and do not significantly change the facility and building footprint to address current or anticipated program changes. Health, Code and Compliance projects are preservation projects that directly address those system and area that either do not meet the university standards for provide as safe or healthy environment or need upgrades and improvement to meet changing code and compliance agency requirements for the public. Together preservation and health and safety projects provide safer and high quality work spaces for university students and staff. Examples of the projects are included in each subcategory and include Fire detection, suppression and reporting; Exterior lightning improvements; Access controls system improvements; Elevators improvement and upgrades; and Emergency Generator replacement.

Eastern Washington University is requesting $9,850,000 in this category to address projects that will provide for higher levels of safety and improve the health environment of the campus while aligning with current upgrades to building cod and other regulatory requirements.

Eastern Washington University's Core Themes include:

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.

Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.

Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

The projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issues, and improve the operation conditions of the systems and therefore provide high quality instructional, research and student engagement areas on the university campus.

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Version: 24 EWU Capital Budget

Report Number: CBS002
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Project Number: 40000192
Project Title: 2025 - 2027 Minor Works - Health, Safety and Code Compliance

Description

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.

This will request will scope design and construction implementation for many subprojects that will improve campus systems and buildings with regard to fire detection, suppression and reporting; exterior lighting; access controls systems; elevators and emergency generators. There are no predesign studies required for this level of minor works projects. This project reflects the need of upgrading existing equipment, or systems to increase safety, health, security, regulatory compliance and extend the useful lifecycle of portions of or the entire facility. In most cases the only new square feet added would be determined by local jurisdiction have authority requiring addition space.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?

Improving health, safety and compliance are the highest priorities for Eastern's Facilities and Planning unit. Upgrading, improving and replacement of systems components or systems will improve and resolve a variety of safety and compliance issues if high priority. As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.

Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.

Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.

Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.

Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Minor works projects this size do not require a predesign study.

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:33PM

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

Description

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Strategic Plan – core themes listed above.
Facilities Master Plan - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.

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2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:33PM

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

Description

No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> Americans with Disabilities Act - 2010 Design Standards
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> National Fire Protection Codes
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023/2024.

Is there additional information you would like decision makers to know when evaluating this request?
Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we

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Project Title: 2025 - 2027 Minor Works - Health, Safety and Code Compliance

Description

lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Health, Safety and Code Requirements (Minor Works)

Growth Management impacts
Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	9,850,000				9,850,000
	Total	**9,850,000**	**0**	**0**	**0**	**9,850,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:33PM

Project Number: 40000192
Project Title: 2025 - 2027 Minor Works - Health, Safety and Code Compliance

Operating Impacts

No Operating Impact

Narrative

This project consists of replacement and upgrades to existing facilities and building systems that already have operating funding in-place.

SubProjects

SubProject Number: 40000193
SubProject Title: Minor Works - HSCC - Fire Detection/Reporting Systems

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Capital Project Request

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:33PM

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000193**
SubProject Title: **Minor Works - HSCC - Fire Detection/Reporting Systems**

Starting Fiscal Year: 2024
Project Class: Preservation
Agency Priority: 13

Project Summary

Facility Preservation - HSCC - Fire Detection/Reporting Systems - Providing a safe and secure environment for students and staff is the highest priority for Eastern Washington University. These systems upgrades, renewal and replacement are critical in providing the best possible outcomes for campus safety.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern Washington University has a state-of-the-art fire detection/reporting system (Fireworks). The system is a centrally monitored and supervised fire detection and reporting system. This system monitors all the university's building for supervisory and fire alarms within the building. The Fireworks system is connected to Edwards's fire alarm panels in many of the campus buildings.

The Fireworks system is considered critical infrastructure since it processes the signals that summon emergency services to campus buildings. This system needs replacement with a new version compatible with the latest updates, manufacture, and vendor support. Regularly the local jurisdiction having authority and the NFPA will require equipment and system upgrade when they have met or exceed their operational lifecycle.

This request is for the replacement of Fireworks reporting system, updating other out of date fire alarm systems on EWU's Cheney campus. This request is for $2,000,000.

Current Facilities Condition Assessment (FCA) for Fire Systems for buildings below.

1 - Superior
2 - Adequate
3 - Fair; System approaching end of expected lifecycle
4 - Needs Improvement, Limited Functionality
5 - Needs Improvement, Marginal Functionality
Showalter Hall Built - 1915 partial remodel 2004, Fire protection and specialties FCA 4.0
Cadet Hall Built - 1956 partial remodel 1978, Fire protection and specialties FCA 4.5
Press box Suite - Built 2004, Fire protection and specialties FCA 3.0
Surbeck Services - Built 1971, Fire protection and specialties FCA 4.0
Grounds Storage Building - Built 1987, Fire protection and specialties FCA 3.5

Eastern Washington University's Core Themes include:

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.

Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.

Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high

SubProjects

SubProject Number: 40000193
SubProject Title: Minor Works - HSCC - Fire Detection/Reporting Systems

quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations;
Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

The projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This project will consist of Replacing the Fireworks reporting system and the design and installation of fire alarm system in the highest priority building on campus including but not limited to Showalter Hall; Industrial area Complex; Cadet Hall; Press box Suites. New control panels, communication wiring and devices will be added to specific building on the priority list. The master panels are linked to the campus network back to the centrally monitored and dispatched alarms. This project will install new panels, pathway and end-field devices as required by the local jurisdiction and the NFPA. Projects will commence design as soon as funds are approved. Once the design is complete the project will be advertised and bid and scheduled to be completed during a time of the academic that least impacts the student and instruction on the campus. Since these projects are a building-by-building installation they can be phased, but this request is for the most critical facilities on our system currently.

Our estimates for this project are based upon cost per square foot or budgetary estimate provided by paid consultants or internal staff generated estimates. Once funding is approved, and the design is underway, more detailed cost estimates will be developed and reviewed to provide information for project implementation and good stewardship of state resources.

The project will start as soon as the appropriations are approved (approximately July 2023) with the intent of completing the project prior to the end of the biennium (June 2025). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Improving health, safety and compliance are the highest priorities for Eastern's Facilities and Planning unit. Upgrading, improving and replacement of systems components or systems will improve and resolve a variety of safety and compliance issues. As is objectively the case, to not take actions will continue the degradation system and building conditions and

SubProjects

SubProject Number: 40000193
SubProject Title: Minor Works - HSCC - Fire Detection/Reporting Systems

operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

Also, since these are life safety issues, not addressing the issues put facility users at risk if the current systems are not working correctly or have component failures. If the local jurisdiction does not see the system in appropriate working order, they will require fire watches when the building is being used and could, if necessary, not allow academic classes to be held if there is potential for injury of loss of life.

As is the case with reduction of approved funding for the university, we will prioritize the highest demand project and defer others as required. In many cases, there will be an additional burden on our operation budgets.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Preservation, safety, and code compliance projects main goal is to maintain, preserve and extend the lifecycle of existing state facilities and assets. In most cases the systems and equipment addressed in these requests are at the end or past then end of their lifecycle and need upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goals of our strategic plan.

Alternatives Considered are:
Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:33PM

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000193**
SubProject Title: **Minor Works - HSCC - Fire Detection/Reporting Systems**

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Strategic Plan – core themes listed above.
Facilities Master Plan - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

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Capital Project Request

2025-27 Biennium

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SubProjects

SubProject Number: **40000193**
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Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> National Fire Protection Codes
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023/2024.

Is there additional information you would like decision makers to know when evaluating this request?
Priorities for the facilities' projects are focused on our base goals which are: First, the safety for our customers/clientele; Second, the protection of university assets; Third, to provide a comfortable and attractive place for our clients to work, learn,

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play, and visit; Fourth, to extend the lifecycle of state assets, reducing the maintenance backlog and operating costs; Fifth, sustainable design and energy conservation; and lastly, reduction of waste and promoting reusable and recyclable products.

Good planning, system renewal and minor capital improvements allow for long term reduction of regulatory violations, operating costs, reduction of emergency or catastrophic failures and extension of the lifecycle of mission critical systems for the university.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic, and costly failures. Minor Projects reduce the frequency of emergencies and cost less on a long-term basis.
Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates, and building community.

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000193**
SubProject Title: **Minor Works - HSCC - Fire Detection/Reporting Systems**

Starting Fiscal Year: 2024
Project Class: Preservation
Agency Priority: 13

Project Summary

Minor Works - HCC - Exterior Lighting Improvements - Providing safe access to our campus facilities with high quality, high efficiency exterior lighting meets one of the university goals of Access. This projects addresses safety and security issues and through university planning and design and replace or renew lighting system with more efficient systems and components.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern Washington University's Cheney campus contains approximately 3.0 million gross square feet of academic and student support facilities. The university owns approximately 320 acres of which about one-half is developed with buildings, sidewalks access drives and other facilities. Whether inside or outside these areas need quality and high efficiency light for life safety and property protection.

This request is to upgrade and replace exterior lighting on Eastern's Cheney campus. The request is for $700,000 to replace, upgrade and renew exterior lighting systems.

This request is a priority as a part of pursuing Eastern's 2014 Comprehensive Campus Master Plan goals. The existing exterior site lighting was reviewed and found to be deficient regarding pedestrian safety, with many areas not sufficiently lit. Additionally, the exterior lighting systems that are in place in many areas are relatively old and do not provide sufficient lighting. However, they do expend a lot of energy in providing light to the locations where they are.

Lighting is an easy area to take advantage of recently developed energy saving technologies such as LED lighting control systems, LED replacement lighting and this will help save money in our electrical consumption costs, while at the same time improving lighting levels for safety and university access. Lighting improvements bring our campus current conditions into compliance with the Washington state requirements in energy efficiency, natural gas preservation & reduction of GHG green-house gas emissions.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion -EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic

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programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

The projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and to provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
Following a survey of our existing facilities, we have gone through many areas having the greatest priority for improvement and in the greatest need of deficiencies to correct. These areas will be the first phase to utilize modern energy saving LED technology.

The project will consist of installation of new lighting poles and bases to bring areas of the exterior lighting up to current codes and standards. The project will commence as soon as funds are approved. Because there are numerous areas in which the exterior has been defined as a need, these can be phased. This project will replace existing lighting fixtures and install new LED lighting fixtures at several locations around multiple buildings and parking lots located on the campus. EWU has identified priority Phase 1areas to be modernized.

Parking Lot Lights
a) Lot P1A / Showalter Hall (Administration)
b) Lot P5
c) Lot P6
d) Lot P7
e) Lot P15
f) Lot P17

Campus Grounds Pedestrian Walkway Pole Lighting
a) Walkways and areas around Music Building
b) Art Building
c) Communications Building
d) Theatre Building
e) CEB – Computer & Engineering Building
f) Martin Hall
g) Sutton Hall

The project will start after funding is approved and be completed within the 2023 biennium. The size of these projects has been scoped as to allow for prioritization of specific buildings or areas. Reduction in funding for this/these project would result in reduction of scope in one or more of the facilities listed or the reduction of the lower priority building systems that have been requested. We will continue to scope and prioritize these sized projects to meet our funding requests. Subsequently, we will obtain funding approval as to respond to the greatest need first and make the biggest reduction to our deferred maintenance backlog.

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Currently, our estimates for this project are based upon cost per square foot or budgetary estimate provided by paid consultants or internal staff generated estimates. Once funding is approved and the design is underway, more detailed cost estimates will be developed and reviewed to provide information for project implementation and good stewardship of state resources.

The size of these projects has been scoped as to allow for prioritization of specific buildings or areas. Reduction in funding for this/these project would result in reduction of scope in one or more of the facilities listed or the reduction of the lower priority building systems that have been requested. We will continue to scope and prioritize these sized project to meet our funding requests. Subsequently, we will obtain funding approval as to respond to the greatest need first and make the biggest reduction to our deferred maintenance backlog.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Replacement of existing lights and adding more lights to other areas will provide a more energy efficient and safe pedestrian experience. Because this is a life safety type project not completing this work puts our customers in potentially dangerous situations and requires the university police to utilize stretched resources by increasing their patrols to these darker areas of campus. New lighting will allow for the police to focus their work elsewhere, reduce energy consumption and provide safely lit walkways throughout various areas of the campus. This project provides for a safer and healthier campus environment as well as reduces energy consumption.

If this project is not funded our energy consumption would maintain the current levels thereby costing the university more in utilities, increasing our carbon footprint and reducing our opportunity to act as good stewards to the environment. Areas where lighting levels are sub-standard or un-safe will continue to be sub-standard and/or un-safe. As previously stated, this is also the opportunity to replace equipment and update systems that are reaching the end of their productive lifecycle and are high costs to maintain and operate. Periodic, regular replacement and upgrades extends the usable life cycle of our university facilities.

Improving health, safety and compliance are the highest priorities for Eastern's Facilities and Planning unit. Upgrading, improving and replacement of systems or elements will improve and resolve a variety of safety and compliance issues. As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. Systems that exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Preservation, safety, and code compliance projects main goal are to maintain preserve and extend the lifecycle of existing state facilities and assets. In most cases the systems and equipment addressed in these requests are at the end or past then end of their reasonable lifecycle and need upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources.

The university evaluate all alternative including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goals of our strategic

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plan.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.

Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.

Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.

Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.

Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. Minor works projects, like these do not add units to the campus inventory but improve the operations and efficiency of the buildings and systems that we already have in place. As stated under the problem or opportunity to be addressed, the university core themes are improved, when we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?

There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – core themes listed above.

Facilities Master Plan 2014 - Objectives

1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need

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4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act

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> State of Washington Energy Code
> National Fire Protection Codes
> Americans with Disability Act - 2010 Standard
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023/2024.

Is there additional information you would like decision makers to know when evaluating this request?
Priorities for the facilities' projects are focused on our base goals which are: First, the safety for our customers/clientele; Second, the protection of university assets; Third, to provide a comfortable and attractive place for our clients to work, learn, play, and visit; Fourth, to extend the lifecycle of state assets, reducing the maintenance backlog and operating costs; Fifth, sustainable design and energy conservation; and lastly, reduction of waste and promoting reusable and recyclable products.

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Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we

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lead collaborative efforts for sustainable growth and development.

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We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

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We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

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We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates, and building community.

Starting Fiscal Year: 2024
Project Class: Preservation
Agency Priority: 13

Project Summary

Minor Works - HCC - Access Controls Systems Improvements - The renewal, upgrade and replacement of these Access Controls systems provide safety and security for campus users and well as property protection for university facilities.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.
Items under this project include the replacement of our access controls system to buildings currently under the campus wide system, upgrades to specific hardware and additions high priority security and safety related spaces on campus.

This request is to replace an obsolete building Access Control system on Eastern's Cheney campus. This will be phase two of the replacement this request is for $1,500,000.

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The safety and security of students, faculty, staff, and visitors are the university's highest priority. Additionally, the monitoring and protection of our state assets is critical to our success. The installation and expansion of University access controls and monitoring systems allow for cost effective monitoring, control, and risk mitigation regarding campus users and our facilities.

Eastern's facilities are complex and are resource intensive to maintain and operate. We are continually looking for ways to extend the lifecycle of facilities, systems, and deferred major capital expenditures to bring them up to a maintainable and cost-effective level. This project, like many of our Minor Works projects, is programmed to extend lifecycle, improve facilities quality for our customers, integrate innovative design into our projects, and reduce the long-term costs of the university and the state. We creatively designed these projects to respond to many of the needs within a single renovation or improvement.

Operation Budget Savings

This project will create budget savings overtime with the ongoing replacement of an obsolete system that has costly and hard to procure replacement parts.

Safety/Compliance Issues

This project will produce a higher level of safety with increased security monitoring and higher security credentials. Current Condition of the area/system/or facility from the Facility Condition Assessment. The current system is obsolete and being replaced this request is for phase two of the replacement.

Eastern Washington University's Core Themes include:

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.

Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.

Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

The projects contained in this request are developed and a designed to address reductions in operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.

This is the second half of a phased project to replace an obsolete access control and security system. Access control projects requested under this project will construct additional systems for existing university buildings. Minor Works projects

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of this nature will begin design as soon as appropriations are approved and the budget it available. All work will be completed in the 2023-25' biennium unless circumstances, bidding and contract execution, scheduling work in buildings, or impact on the students requires a modified or extended schedule for completion. As with many Minor Works request the installation of new access controls system can be phased by building. A list of buildings that currently do not have these systems is developed and when funding is received the top priorities on the list become the projects that are phased. Additional projects that are not funded would be deferred until such time as funding is available.

Currently, Estimates for this project are based on cost per square foot or budgetary estimates provided by paid consultants or generated by EWU internal staff. Once funding is approved, and the design is underway, more detailed cost estimates will be developed and reviewed to provide information for project implementation and good stewardship of state resources.

The project will start as soon as the appropriations are approved (approximately July 2023) with the intent of completing the project prior to the end of the biennium (June 2025). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action? Improving health, safety and compliance are the highest priorities for Eastern's Facilities and Planning unit. Upgrading, improving and replacement of systems components or systems will improve and resolve a variety of safety and compliance issues if high priority. As is objectively the case, to not take actions will continue the degradation systems and building operations. The costs for operations, will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

Also, since these are life safety/property protection issues, not addressing the issues put facility users at risk if the current systems are not working correctly or have component failures. As is the case with reduction of approved funding for the university, we will prioritize the highest demand project and defer others as required. In many cases, there will be an additional burden on our operation budgets.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered. The project(s) identified and developed for this request are related to building security and facilities protection. They include keycard access controls system replacement; selective camera installation and replacement; data gathering and storage for security systems, and replacement of deficient equipment that is at the end of its lifecycle. These projects were identified through evaluation of our current system by engineering consultants, regulatory agencies, and plant staff. They also capture the costs associated with maintaining and operating existing systems through our computerized maintenance management program. These projects are prioritized to make the most affective impact for improving the systems and equipment, extending the lifecycle of systems, and reducing the maintenance and operating cost for the university.

Preservation, safety, and code compliance projects main goal are to maintain preserve and extend the lifecycle of existing state facilities and assets. In most cases the systems and equipment addressed in these requests are at the end or past then end of their lifecycle and need upgrading or replacement. System and equipment failure is not a productive alternative.

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Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goals of our strategic plan.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Strategic Plan – core themes listed above.
Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000195**
SubProject Title: **Minor Works - HSCC - Access Controls Systems Improvements**

2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects

Project Number: **40000192**
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will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> National Fire Protection Codes
> Americans with Disabilities Act - 2010 Design Standards
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023/2024.

Is there additional information you would like decision makers to know when evaluating this request?
Priorities for the facilities' projects are focused on our base goals which are: First, the safety for our customers/clientele; Second, the protection of university assets; Third, to provide a comfortable and attractive place for our clients to work, learn, play, and visit; Fourth, to extend the lifecycle of state assets, reducing the maintenance backlog and operating costs; Fifth, sustainable design and energy conservation; and lastly, reduction of waste and promoting reusable and recyclable products. Good planning, system renewal and minor capital improvements allow for long term reduction of regulatory violations, operating costs, reduction of emergency or catastrophic failures and extension of the lifecycle of mission critical systems for the university.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic, and costly failures. Minor Projects reduce the frequency of emergencies and cost less on a long-term basis.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this

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region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates, and building community.

Starting Fiscal Year: 2024
Project Class: Preservation
Agency Priority: 13

Project Summary

Minor Works - HSCC - Elevators Improvements - Campus elevators are a critical component for students and staff, including those with physical restrictions that might not be able to reach programs and activities without these system working appropriately. The upgrade, renewal and replacement are required to meet the university's needs as well and meeting compliance requirements on campus.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.
This project includes work to update and renew worn components, fixtures, and finishes within existing elevators and conveyance systems on campus. **The following building under consideration are: Showalter Hall, Art Building, Communications Building, Theatre Building, Digital Media (previously Radio/Television Building) and Cheney Hall.**

OFM

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:33PM

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000196**
SubProject Title: **Minor Works - HCC - Elevators Improvements**

This request is for upgrades and replacement of elevators and other conveyance equipment on Eastern's Cheney campus. The request is for $2,000,000.

Many of the elevators and wheelchair lifts on campus are older than their originally designed life span and need to be either repaired or replaced. This project will renew the life of these elevators by upgrading major system components with modern technology, such as digital controllers and door closers. These elevators will also be connected to newly installed fire detection systems so that they operate properly during fire alarm emergencies. Worn architectural finishes and ADA fixtures will also be updated to comply with modern elevator code requirements.

Current Facilities Condition Assessment (FCA)
1 - Superior
2 - Adequate
3 - Fair; System approaching end of expected lifecycle
4 - Needs Improvement, Limited Functionality
5 - Needs Improvement, Marginal Functionality

Showalter Hall - Built 1915 (small remodel 2004), Elevator FCA 5.0
Art Building - Built 1972, Elevator – FCA 3.5
Communications Building - Built 1970, Elevator FCA 4.0
Theatre Building Elevator - Built 1971, FCA 4.0
Digital Media (RTV) Building - Built 1972, Elevator FCA 4.0
Cheney Hall - Built 1966, Elevator FCA 3.0

This is a priority due to Washington State Department of Labor and Industries elevator compliance requirements. Annual testing and certification of these lifts and elevators reports to the university those areas of concern and the wear and tear that this equipment is receiving. The elevator of concern are original equipment in buildings that were built in the 1970s. In academic and administrative building this equipment get heavy daily use and much of the equipment shows substantial wear.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and

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Promoting student success by supporting student engagement and timely degree completion.

The projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This project will install and update current elevators and other conveyance systems. There are a number of projects encompassing this request and a number of start/completion dates planned. Minor Works request in this category will result and design and construction equipment and system upgrades that meet programmatic needs and regulatory compliance issues required by one or more of the following agencies/associations: (IBC) International Building Code; City of Cheney Building department and Fire Marshal; Washington's State Department of Labor and Industries Elevator Compliance division: and state and federal requirements for (ADA) Americans with Disabilities Act.

In this category there are a number of independent projects and system upgrades that extend past the resources that will be appropriated. As is consistently the case the university will prioritize a list of elevator projects and address the most pressing issues first. Those that can wait will be deferred until funding is available at a later date.

The size of these projects has been scoped as to allow for prioritization of specific buildings or areas. Reduction in funding for this/these project would result in reduction of scope in one or more of the facilities listed or the reduction of the lower priority building systems that have been requested. We will continue to scope and prioritize these sized project to meet our funding requests. Subsequently, we will obtain funding approval as to respond to the greatest need first and make the biggest reduction to our deferred maintenance backlog.

Currently, our estimates for this project are based upon cost per square foot or budgetary estimate provided by paid consultants or internal staff generated estimates. Once funding is approved and the design is underway, more detailed cost estimates will be developed and reviewed to provide information for project implementation and good stewardship of state resources.

The project will start as soon as the appropriations are approved (approximately July 2023) with the intent of completing the project prior to the end of the biennium (June 2025). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action? Most of the elevators that need to be repaired or replaced within this project are out of compliance with ADA requirements. Most of these elevators are past designed life span and require renewal of major system components in order to continue operation. Doing nothing would guarantee failure of these elevators and thus create potential for harm to University student or staff. University elevators that do not meet current Washington State Department of Labor and Industries standards will require repairs, upgrades or will be taken out of service. As previously stated, this is also the opportunity to

Project Number: 40000192
Project Title: 2025 - 2027 Minor Works - Health, Safety and Code Compliance

SubProjects

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SubProject Title: Minor Works - HCC - Elevators Improvements

replace equipment and update systems that are reaching the end of their productive lifecycle and are high costs to maintain and operate. Periodic, regular replacement and upgrades extends the usable life cycle of our university facilities.

Improving health, safety and compliance are the highest priorities for Eastern's Facilities and Planning unit. Upgrading, improving and replacement of systems components or systems will improve and resolve a variety of safety and compliance issues if high priority. As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. Systems that exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

Also, since these are life safety/compliance issues, not addressing the issues put facility users at risk if the current systems are not working correctly or have component failures. As is the case with reduction of approved funding for the university, we will prioritize the highest demand project and defer others as required. In many cases, there will be an additional burden on our operation budgets.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
These projects were identified through evaluation of our current system by engineering consultants, regulatory agencies, and plant staff. They also capture the costs associated with maintaining and operating existing systems through our computerized maintenance management program. These projects are prioritized to make the most affective impact for improving the systems and equipment, extending the lifecycle of systems, and reducing the maintenance and operating cost for the university.

Preservation, safety, and code compliance projects main goal are to maintain preserve and extend the lifecycle of existing state facilities and assets. In most cases the systems and equipment addressed in these requests are at the end or past then end of their lifecycle and need upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date.

The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goals of our strategic plan.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other

Project Number: 40000192
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SubProjects

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SubProject Title: Minor Works - HCC - Elevators Improvements

system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.
Strategic Plan – core themes listed above.
Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

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SubProjects

SubProject Number: **40000196**
SubProject Title: **Minor Works - HCC - Elevators Improvements**

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> Americans with Disabilities' Act - 2010 Design Standards
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> EWU Energy Efficiency Sustainability Report
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How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

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Report Number: CBS002
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Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000196**
SubProject Title: **Minor Works - HCC - Elevators Improvements**

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023/2024.

Is there additional information you would like decision makers to know when evaluating this request?
Priorities for the facilities' projects are focused on our base goals which are: First, the safety for our customers/clientele; Second, the protection of university assets; Third, to provide a comfortable and attractive place for our clients to work, learn, play, and visit; Fourth, to extend the lifecycle of state assets, reducing the maintenance backlog and operating costs; Fifth, sustainable design and energy conservation; and lastly, reduction of waste and promoting reusable and recyclable products. Good planning, system renewal and minor capital improvements allow for long term reduction of regulatory violations, operating costs, reduction of emergency or catastrophic failures and extension of the lifecycle of mission critical systems for the university.
The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic, and costly failures. Minor Projects reduce the frequency of emergencies and cost less on a long-term basis.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

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Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000196**
SubProject Title: **Minor Works - HCC - Elevators Improvements**

We transform our Region

We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates, and building community.

Starting Fiscal Year: 2024
Project Class: Preservation
Agency Priority: 13

Project Summary

Mnior Works - HCC - Emergency Generator Replacements - The university continues to replace and upgrade emergency back up power and generators to provide seamless uninterruptable power for campus emergency systems, Information Technology and other critical systems and operations.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Modern American life expects that a continuous and uninterrupted electrical power supply be readily available daily. This is also an important expectation for any modern university campus with its many mission critical functions and systems. Currently the university cannot guarantee uninterrupted power at all its mission critical facilities, and therefore this request is a priority. This request is for the improvements and replacement of emergency backup generator(s) and Uninterrupted Power Supply (UPS) on Eastern's Cheney Campus.

The request is for $800,000 to replace and renew emergency generators and other uninterruptable power sources on campus. Buildings under consideration are Cheney Hall, Martin Hall, Williamson Hall, Cadet Hall, Physical Education Classroom and Physical Education Activities Building.

As required by several codes and laws, life-safety systems such as fire protection, access control, and security are required to have continuous power availability ensuring communication within their respective networks. EWU receives its electrical power from two separate feeds into the campus from the City of Cheney. However, history shows that even with having two sources, campus power is still entirely interrupted from time to time. In the event of future power outages on campus, the generators, Uninterruptable Power Supply (UPS) and their associated mission critical systems are needed to maintain safety and security to our students, faculty, staff, and visitors.

These selected pieces of equipment are identified because they have increasing high maintenance costs, are past their reasonable lifecycle or they current are not sized for the necessary needs that they serve.

Eastern Washington University's Core Themes include:

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.

Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000197**
SubProject Title: **Mnior Works - HSCC - Emergency Generator Replacements**

and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

The projects contained in this request are developed and designed to address back up power needs but also the equipment is specified to reduce energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This project will replace existing systems where defined, and install new generators, Uninterruptible Power Supply (UPS) systems and support systems (Automatic Transfer Switches, ATS) for emergency power at numerous locations across campus. There are several smaller projects encompassing this request and several start/completion dates planned.
A phased project prioritization list based on evaluation by our engineering consultants, regulatory agencies, and plant electrical and generator maintenance staff has been developed. The projects are prioritized based on each facility's specific impact to the university in the event of a normal power system failure, and the existing conditions in place for handling emergency power during an outage at each installation location, developing a hierarchy of the most urgent buildings and areas to upgrade first.

The size of these projects has been scoped as to allow for prioritization of specific buildings or areas. Reduction in funding for this/these project would result in reduction of scope in one or more of the facilities listed or the reduction of the lower priority building systems that have been requested. We will continue to scope and prioritize these projects to meet our funding requests. Subsequently, we will obtain funding approval as to respond to the greatest need first and make the biggest reduction to our deferred maintenance backlog. Currently, our estimates for this project are based upon cost per square foot or budgetary estimate provided by paid consultants or internal staff generated estimates. Once funding is approved, and the design is underway, more detailed cost estimates will be developed and reviewed to provide information for project implementation and good stewardship of state resources.

The project will start as soon as the appropriations are approved (approximately July 2023) with the intent of completing the project prior to the end of the biennium (June 2025). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000197**
SubProject Title: **Mnior Works - HSCC - Emergency Generator Replacements**

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action? This project will reduce the risk of loss of university data within our Information Technology System. The data of concern includes the personal and/or financial information of students, faculty and staff, as well as numerous other forms of data which the university is required to safeguard. For example, archived records are both critical to the university's long-term operations, as well as require adherence to state and federal requirements related to the retention of records and data. Uninterruptible Power Supply (UPS) units provide backup power operations for all our fire and life safety equipment that provide, detection, reporting, suppression, and communication for the life safety component to the university in the event of a normal power loss.

By not taking action to replace these existing systems, needed clients of the university can expect that during a loss of power on campus, even minimal emergency reporting systems may not continue to operate and keep our facility users safe. Secondly, mission communication and data collection may not be operational, and financial data and electronic records of the university may be lost. As previously stated, this is also an opportunity to replace equipment and update systems that are reaching the end of their productive lifecycle and are high costs to maintain and operate. Periodic, regular replacement and upgrades extends the usable life cycle of our university facilities.

Improving health, safety and compliance are the highest priorities for Eastern's Facilities and Planning unit. Upgrading, improving and replacement of systems components or systems will improve and resolve a variety of safety and compliance issues if high priority. As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. Systems that exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

Also, since these are life safety/property protection issues, not addressing the issues put facility users at risk if the current systems are not working correctly or have component failures. As is the case with reduction of approved funding for the university, we will prioritize the highest demand project and defer others as required. In many cases, there will be an additional burden on our operation budgets.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered. These projects were identified through evaluation of our current system by engineering consultants, regulatory agencies, and plant staff. They also capture the costs associated with maintaining and operating existing systems through our computerized maintenance management program. These projects are prioritized to make the most affective impact for improving the systems and equipment, extending the lifecycle of systems, and reducing the maintenance and operating cost for the university.

Preservation, safety, and code compliance projects main goal are to maintain preserve and extend the lifecycle of existing state facilities and assets. In most cases the systems and equipment addressed in these requests are at the end or past then end of their lifecycle and need upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. T

he analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goals of our strategic plan.

Project Number: 40000192
Project Title: 2025 - 2027 Minor Works - Health, Safety and Code Compliance

SubProjects

SubProject Number: 40000197
SubProject Title: Mnior Works - HSCC - Emergency Generator Replacements

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.
Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
The clients of Eastern Washington University, the students, and faculty, staff and community members will experience better customer service, delivery, and a quality environment when we manage our long- and short-term facilities goals properly. When operating costs are controlled, limited budgets are allocated more broadly across the university so that all facilities are maintained and operated in cost effective and high-quality manner.

The clientele associated with this project includes all Eastern Washington University students, faculty, and staff, as well as the Washington State Patrol Crime Laboratory and the Washington State Digital Archives facilities located on campus. This project also addresses community members and organizations that visit and use the campus for activities. These projects do not specifically add units to the university operations but responds to ongoing and continuing needs for high quality, safe, and secure spaces and facilities used for university and community activities. The university has a legal obligation across a wide range of Fire and Life-Safety codes as required by State and local Authorities Having Jurisdiction (AHJ). These obligations affect all the communities that use our facilities for academic instruction, student and community activities. Within this request there no intention of adding or expanding units but upgrading and or replacing equipment that is already in place that need to be improved to meet the needs of the university.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance.

Project Number: **40000192**
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Reference feasibility studies, master plans, space programming and other analyses as appropriate.
These projects are developed and prioritized based on the needs stated in the university Academic Strategic Plan (2017) and our Comprehensive Campus Master Plan (2014). These projects directly relate to our goal of “access” which includes the safety and security of all those who use our campus facilities. Projects included here affect many other state programs such as sustainability and cost-effective facilities management. All projects related to Minor Works Preservation – Life Safety Code Compliance relate to Eastern’s strategic goal to remain an “institution of innovation.” As a priority to us, we consider the aspects relating to high quality/cost effective improvement and replacements, greenhouse gas emissions and the reduction of our carbon footprint. These projects also address the reduction of the deferred maintenance backlog that stand as a priority of the state and university.

EWU expands opportunities for personal transformation through excellence in learning; by enhancing access to higher education in the Inland Northwest and beyond and supporting traditional college-bound students and those from under-served populations; delivering high quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning and promoting student success by supporting student engagement and timely degree completion.

Strategic Plan – core themes listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the “DNA of EWU”—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)

OFM

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:33PM

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000197**
SubProject Title: **Mnior Works - HSCC - Emergency Generator Replacements**

No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> National Fire Protection Codes
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan
> Americans with Disabilities Act - 2010 Design Standards

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?

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Priorities for the facilities' projects are focused on our base goals which are: First, the safety for our customers/clientele; Second, the protection of university assets; Third, to provide a comfortable and attractive place for our clients to work, learn, play, and visit; Fourth, to extend the lifecycle of state assets, reducing the maintenance backlog and operating costs; Fifth, sustainable design and energy conservation; and lastly, reduction of waste and promoting reusable and recyclable products. Good planning, system renewal and minor capital improvements allow for long term reduction of regulatory violations, operating costs, reduction of emergency or catastrophic failures and extension of the lifecycle of mission critical systems for the university.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic, and costly failures. Minor Projects reduce the frequency of emergencies and cost less on a long-term basis.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates, and building community.

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SubProjects

SubProject Number: **40000197**
SubProject Title: **Mnior Works - HSCC - Emergency Generator Replacements**

Project Phase Title: Design & Construction
Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 13

Project Summary

This project would work to address ADA deficiencies across campus, including restrooms, shower rooms, and general ADA accessibility.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

In 2008 the university hire a professional consultant to survey and review our campus facilities and ground to Americans with Disabilities Act (ADA) violations and provide a framework for improving those ADA conditions on campus. The university has used this comprehensive plan for our major capital project remodels as well as upgrading our existing and out of date facilities. The ADA program projects primarily achieve academic and student support goals. This group of projects include updating and improving spaces that are needed to improve program delivery and at the foremost accessibility to campus facilities and program space. Included are items that improve access to and the quality of the program spaces in which instruction takes place.

Eastern Washington University is requesting $2,000,000 in this category to address the need to upgrade American's with Disabilities Act design standards in our academic and student support facilities. Those areas that need improvement and upgrades to meet the strategic need of 'accessibility" on the Cheney Campus.

the American's with Disabilities Act (ADA) was signed into law on July 26, 1990 by President George H. W. Bush. The ADA is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public. Eastern's strategic plan is focused on providing "access" to high quality programs and service to our students. They are the reason that we are here. Periodically the university evaluates the access needs for all the campus buildings and other facilities. We track what has been repaired/upgraded and what is the next highest priority for the future. This request contains the highest priority areas that need to be addressed to afford students, staff, and community members safe and easy access to Eastern's Cheney Campus. In areas within our buildings that are outside the main public circulation ways, many deficiencies exist that encumber students or faculty members with disabilities.

These ADA related projects will significantly improve the spaces and their functionality and adherence to the law. The also address other compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations. These projects were identified through evaluation of our current systems by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for

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SubProjects

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improvements.

Once staff had captured the needs and budgetary costs to respond, we prioritized these projects to improve and extend the lifecycle of our systems and equipment and to reduce the maintenance and operating cost for the university.

Eastern's facilities are complex and costly resources to maintain and operate. These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature they are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This request will result in minor interior remodeling of a variety of spaces to eliminate circulation issues for those with disabilities. Following a study that identifies the locations of concern and severity of needs, designs will be prepared for construction. These projects are separate from major capital remodels on university facilities. These projects will be setup to occur in the short time windows between academic quarters. The first of these projects could start as soon as early December 2025.

Current project estimates are budgetary in nature. A more detailed estimate will be developed when funding is appropriated, and the university hires a consultant to better define the specific needs of the individual buildings and locations. All that information will be available when it is developed.

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SubProjects

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SubProject Title: **Minor Works - ADA Improvements**

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Over time, the university has remodeled several of the campus buildings in one form or another. Usually, the remodels involved a change of use where the building was being remodeled based on a program change. The design generally focused money and attention on the intended remodel, while areas beyond the remodel limits commonly did not receive upgrades related to ADA compliance, or other needs for that matter. Additionally, there still exist buildings on campus that have not received any accommodation for individuals with disabilities since originally being constructed. This request would focus on modifying existing facilities to meet current building code requirements and ADA standards.
By not acting, occupants of these buildings will continue to have negotiate their way through the facilities using deficient amenities that lack
current code required ADA accommodations. These existing deficiencies put EWU in a position of potential liability.

As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
The process for developing these projects requests is based on campus and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since funding is continually a challenge, the alternate below are considered and we work through the problem-solving process.
Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the

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short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility

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in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
High quality buildings and systems are critical for positive student outcomes. We are dedicated to offering access to

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000198**
SubProject Title: **Minor Works - ADA Improvements**

students of all needs and abilities. At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion ratee and building community.

Project Phase Title: Design & Construction
Starting Fiscal Year: 2026

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Project Number: 40000192
Project Title: 2025 - 2027 Minor Works - Health, Safety and Code Compliance

SubProjects

SubProject Number: 40000199
SubProject Title: Minor Works - Communications Bldg Restroom
Project Class: Preservation
Agency Priority: 13

Project Summary

This project would address accessibility issues at the Communications Bldg Restroom.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

In 2008 the university hire a professional consultant to survey and review our campus facilities and ground to Americans with Disabilities Act (ADA) violations and provide a framework for improving those ADA conditions on campus. The university has used this comprehensive plan for our major capital project remodels as well as upgrading our existing and out of date facilities. The ADA program projects primarily achieve academic and student support goals. This group of projects include updating and improving spaces that are needed to improve program delivery and at the foremost accessibility to campus facilities and program space. Included are items that improve access to and the quality of the program spaces in which instruction takes place.

Eastern Washington University is requesting $850,000 to address the need to upgrade American's with Disabilities Act design standards in the Communications Building. Those areas that need improvement and upgrades to meet the strategic need of 'accessibility" on the Cheney Campus.

the American's with Disabilities Act (ADA) was signed into law on July 26, 1990 by President George H. W. Bush. The ADA is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public. Eastern's strategic plan is focused on providing "access" to high quality programs and service to our students. They are the reason that we are here. Periodically the university evaluates the access needs for all the campus buildings and other facilities. We track what has been repaired/upgraded and what is the next highest priority for the future. This request contains the highest priority areas that need to be addressed to afford students, staff, and community members safe and easy access to Eastern's Cheney Campus. In areas within our buildings that are outside the main public circulation ways, many deficiencies exist that encumber students or faculty members with disabilities.

These ADA related projects will significantly improve the spaces and their functionality and adherence to the law. The also address other compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations. These projects were identified through evaluation of our current systems by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for improvements.

Once staff had captured the needs and budgetary costs to respond, we prioritized these projects to improve and extend the lifecycle of our systems and equipment and to reduce the maintenance and operating cost for the university.

Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

SubProject Number: **40000199**
SubProject Title: **Minor Works - Communications Bldg Restroom**

Eastern's facilities are complex and costly resources to maintain and operate. These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature they are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This request will result in minor interior remodeling of a variety of spaces to eliminate circulation issues for those with disabilities. Following a study that identifies the locations of concern and severity of needs, designs will be prepared for construction. These projects are separate from major capital remodels on university facilities. These projects will be setup to occur in the short time windows between academic quarters. The first of these projects could start as soon as early December 2025.

Current project estimates are budgetary in nature. A more detailed estimate will be developed when funding is appropriated, and the university hires a consultant to better define the specific needs of the individual buildings and locations. All that information will be available when it is developed.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with

SubProjects

SubProject Number: 40000199
SubProject Title: Minor Works - Communications Bldg Restroom

resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Over time, the university has remodeled several of the campus buildings in one form or another. Usually, the remodels involved a change of use where the building was being remodeled based on a program change. The design generally focused money and attention on the intended remodel, while areas beyond the remodel limits commonly did not receive upgrades related to ADA compliance, or other needs for that matter. Additionally, there still exist buildings on campus that have not received any accommodation for individuals with disabilities since originally being constructed. This request would focus on modifying existing facilities to meet current building code requirements and ADA standards.
By not acting, occupants of these buildings will continue to have negotiate their way through the facilities using deficient amenities that lack
current code required ADA accommodations. These existing deficiencies put EWU in a position of potential liability.

As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
The process for developing these projects requests is based on campus and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since funding is continually a challenge, the alternate below are considered and we work through the problem-solving process.
Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

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Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.

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6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

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> EWU Energy Efficiency Sustainability Report
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> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
High quality buildings and systems are critical for positive student outcomes. We are dedicated to offering access to students of all needs and abilities. At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

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SubProject Number: **40000199**
SubProject Title: **Minor Works - Communications Bldg Restroom**

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Is there additional information you would like decision makers to know when evaluating this request?
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Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion ratee and building community.

Location

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Project Number: **40000192**
Project Title: **2025 - 2027 Minor Works - Health, Safety and Code Compliance**

SubProjects

Location

SubProject Number: **40000193**
SubProject Title: **Minor Works - HSCC - Fire Detection/Reporting Systems**

City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009

Project Type

Facility Preservation (Minor Works)
Health, Safety and Code Requirements (Minor Works)
Health, Safety and Code Requirements (Minor Works)
Health, Safety and Code Requirements (Minor Works)
Health, Safety and Code Requirements (Minor Works)
Health, Safety and Code Requirements (Minor Works)
Health, Safety and Code Requirements (Minor Works)
Health, Safety and Code Requirements (Minor Works)

Growth Management impacts

Not Applicable

Growth Management impacts

Not Applicable

Growth Management impacts

Not Applicable

Growth Management impacts

Not Applicable

Growth Management impacts

Not Applicable

Growth Management impacts

NA

Growth Management impacts

NA

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Project Title: 2025 - 2027 Minor Works - Health, Safety and Code Compliance

SubProjects

SubProject Number: 40000193
SubProject Title: Minor Works - HSCC - Fire Detection/Reporting Systems

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	2,000,000				2,000,000
057-1	State Bldg Constr-State	700,000				700,000
057-1	State Bldg Constr-State	1,500,000				1,500,000
057-1	State Bldg Constr-State	2,000,000				2,000,000
057-1	State Bldg Constr-State	800,000				800,000
057-1	State Bldg Constr-State	2,000,000				2,000,000
057-1	State Bldg Constr-State	850,000				850,000
	Total	**9,850,000**	**0**	**0**	**0**	**9,850,000**

		Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

No Operating Impact

No Operating Impact

No Operating Impact

No Operating Impact

No Operating Impact

No Operating Impact

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SubProjects

SubProject Number: **40000193**
SubProject Title: **Minor Works - HSCC - Fire Detection/Reporting Systems**

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

Narrative

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Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

Narrative

No additional square footage. No operating request.

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000192	40000192
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:34PM

Project Number: **40000118**
Project Title: **2023 - 2025 Minor Works - Infrastructure Preservation**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 14

Project Summary

2025 - 2027 Minor Works - Infrastructure Preservation - Infrastructure systems at Eastern Washington University's Cheney Campus are integral to the operation of all campus facilities and systems. This request if for renewal and upgrading of key system components to increase effectiveness, efficiency and extend lifecycles of these critical system and associated equipment

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern Washington University owns 329 acres of property on the Cheney campus. Approximately 50% is developed with buildings and supporting facilities which total approximately three-million gross square feet. The campus utilities are centrally located and distributed. They include: Central Steam generation and distribution; Central Chilled water generation and distribution; a class A community water system; a medium voltage (13,200 volt) substation and distribution look and a network of sanitary and storm sewer piping and specialties. The major utilities are distribute to campus buildings through approximately three miles of utility tunnels and utilidors which in some case were originally constructed 75 years ago. The Cheney campus operates like a small town when is come to utilities and infrastructure. These system power the campus. They are essential to providing safe and high-quality buildings, grounds, and other support function to the campus.

Infrastructure Preservation is a planning and implement process that tracks, analyzes, and plans for successive upgrades and replacement of critical systems and system components. Systems are supported through both Major Capital Projects as well as Minor Works Projects. The latter are implemented to extend the life cycles of systems as well as making them more effective and energy efficient.

Eastern Washington University is requesting funding in the category of Infrastructure Preservation for $5,550,000. Subprojects I this request are: Medium Voltage switching and specialty equipment improvements and replacements; Utility tunnel repairs and replacements; Building Automations Systems Upgrades and Campus Walkways and Paver replacements.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives;

Project Number: 40000118
Project Title: 2023 - 2025 Minor Works - Infrastructure Preservation

Description

and Promoting student success by supporting student engagement and timely degree completion.

Infrastructure renewal and preservation is a top priority for central utility distribution facilities like Eastern Washington University. Since all building receive their utilities from the infrastructure, they cannot operate without an effective and efficient systems of distribution, control, and automation. The condition of these primary system is reviewed and reported regularly by Eastern staff and paid expert consultants. This collaboration is used to define and request legislative funding that keeps the campus operation, response to energy conservation and sustainability and brings the university infrastructure into compliance with local jurisdiction-having-authority and regulatory agencies. Facilities is responsible for the health, safety, security, and comfort of all that use the campus on a day-to-day basis.

The projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This will request will scope design and construction implementation many subprojects that will improve campus infrastructure systems, components, and equipment. There are no predesign studies required for this level of minor works, infrastructure projects. These projects reflect the need of upgrading existing systems, equipment, or systems to extend the useful lifecycle of portions of or the entire utility structure. In most cases the only new square feet added would be determined by local jurisdiction have authority requiring addition space.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
The primary goal of these projects in the sustained operations of the campus infrastructure. Better systems and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority. Whether better operations, better sustainable design and construction, better energy cost parameters, lower cost of operations other goals these projects are programmed, designed, and implement to meet university goals of access and high-quality instruction for our students.

As is objectively the case, to not take actions will continue the degradation systems and infrastructure conditions and operations. The costs for operations, including energy costs will continue to increase. Systems and equipment that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university daily operations and student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that could negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
As stated above the university continually reviews, surveys and track costs of these systems to building priority projects for

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Description

renewal and upgrade. These projects are scrutinized by a problem-solving methodology to derive the highest need each biennium. From there the following alternatives are considered.

Alternative 1) Renovation of the entire system- major project renovation. The goal of minor works preservation projects like these are to extend systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – Infrastructure does not allow to take portion of the campus off-line due to the structure and distribution of utilities across the campus. The systems listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Facilities may not be available, systems can become unusable, there may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Infrastructure renewal projects does not add square footage or new units but replaces and renews existing systems/equipment for continued high quality campus operations.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need

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4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems

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Description

> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
The university infrastructure is the life blood of campus facilities, supplying all utilities from the central plant to each facility on campus. Without high quality systems the outcomes for student can be impacted and the university will not be able to meet its strategic goals.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region

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Description

We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rate and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Infrastructure Preservation (Minor Works)

Growth Management impacts
Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	5,550,000				5,550,000
	Total	**5,550,000**	**0**	**0**	**0**	**5,550,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
SampleThis project consists of replacement and upgrades to existing facilities and building systems that already have operating funding in-place.

SubProjects

SubProject Number: 40000135
SubProject Title: Minor Works - Infrastructure Preservation - Medium Volt Improve

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SubProjects

SubProject Number: **40000135**
SubProject Title: **Minor Works - Infrastructure Preservation - Medium Volt Improve**

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 14

Project Summary

Minor Works - Infrastructure Preservation - Medium Volt Improvement - Eastern Washington University is requesting funding in this category to replace a portion or our medium voltage switchers for campus electrical distribution. This is critical infrastructure that provides electricity to all campus facilities.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Modern American life expects that a continuous and uninterrupted electrical power supply be readily available. This is also an important expectation for any university campus with its many mission critical functions and systems. A significant component in the backbone of the campus electrical system has exceeded its useful life and imminent failures are to be expected. This request is for the replacement of approximately one-third of the 27 existing medium voltage switches located in the tunnels on Eastern's Cheney Campus.

Infrastructure Preservation is a planning and implement process that tracks, analyzes, and plans for successive upgrades and replacement of critical systems and system components. Systems are supported through both Major Capital Projects as well as Minor Works Projects. The latter are implemented to extend the life cycles of systems as well as making them more effective and energy efficient.

Eastern Washington University is requesting $2,000,000 for the replacement of a portion of the medium voltage electrical switches on campus. These are critical infrastructure items that provide 13,200 volt power distribution from our sub-station to each building on campus.

Safety/Compliance

The existing medium voltage switches were installed underground within the university tunnel system in 1989, making these switches 33 years old. Being in the tunnel, which is legally defined as a confined space, and in tight quarters to various other conductive equipment performing annual switch maintenance requires staff electricians to work in an unsafe manner which are both safety and compliance issues. Additionally, the vacuum switches themselves use Sulfur Hexafluoride, an inert gas that provides the electrical insulating properties of the switch. This gas known to have adverse environmental effects.

Eastern Washington University's Core Themes include:

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.

Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.

Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

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SubProjects

SubProject Number: **40000135**
SubProject Title: **Minor Works - Infrastructure Preservation - Medium Volt Improve**

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Infrastructure renewal and preservation is a top priority for central utility distribution facilities like Eastern Washington University. Since all building receive their electricity from this infrastructure, they cannot operate without an effective and efficient systems of distribution, control, and automation. The condition of these primary system is reviewed and reported regularly by Eastern staff and paid expert consultants. This collaboration is used to define and request legislative funding that keeps the campus operation, response to energy conservation and sustainability and brings the university infrastructure into compliance with local jurisdiction-having-authority and regulatory agencies. Facilities is responsible for the health, safety, security, and comfort of all that use the campus on a day-to-day basis.

The projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This project will replace a portion of the 27 existing sub-grade medium voltage switches in a phased approach based on funding available. This schedule has been developed by our electrical engineering consultants. The final number of switch replacements per phase will be determined based on allocated funding and replacement costs. It is intended to complete each phase within the biennium each is funded under.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Most all the 27 switches were originally installed in 1989 making them approximately 30 years old. The expected useful life of the type of switches we have (13,200 KvA Medium Voltage Vacuum circuit breaker type) is between 15 and 20 years old. Even under optimal conditions and regular maintenance this equipment has exceeded its useful life and imminent failures should begin to be expected.

Another complicating issue is the switch locations themselves. Originally built to code within the confines of the campus tunnel system they now violate several codes related to electrical safety, access, and fire and life-safety. Being within the tunnel system the environment is wet, surrounded by several clearance restrictions and create an un-safe working

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SubProjects

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environment when electrical work requires switching.

Lastly, the material makeup of the switches creates an environmental concern. This type of switch was constructed using sulfur hexafluoride (SF6) as the insulating gas which is known to be a potent greenhouse gas. The stability of the gases in these switches is unknown and cannot be accurately determined.

By not taking action with replacement of these switches our electrical staff face several dangers as described above, the university faces the potential consequence of an unplanned electrical outage, including the increased costs of related to an unplanned outage which is several times that of this request, and the environment may suffer from an accidental release of SF6 insulating gas into the atmosphere.

The primary goal of these projects in the sustained operations of the campus infrastructure. Better systems and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority. Whether better operations, better sustainable design and construction, better energy cost parameters, lower cost of operations other goals these projects are programmed, designed, and implement to meet university goals of access and high-quality instruction for our students.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
As stated above the university continually reviews, surveys and track costs of these infrastructure systems for renewal and upgrade. These projects are scrutinized by a problem-solving methodology to derive the highest need and best use of resources, each biennium. From there the following alternatives are considered.

Alternative 1) Renovation of the entire system- major project renovation. The goal of minor works preservation projects like these are to extend systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – Infrastructure does not allow to take portion of the campus off-line due to the structure and distribution of utilities across the campus. The systems listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Facilities may not be available, systems can become unusable, there may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or

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SubProjects

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communities served, etc.

All electrical distribution from out sub-station to each building goes through these switches. If they do not operate appropriately, we have no way to provide power to each facility. This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Infrastructure renewal projects does not add square footage or new units but replaces and renews existing systems/equipment for continued high quality campus operations.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?

There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – core themes are listed above.

Facilities Master Plan 2014 - Objectives

1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles

The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:

1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?

This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

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Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

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SubProjects

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SubProject Title: **Minor Works - Infrastructure Preservation - Medium Volt Improve**

Is there additional information you would like decision makers to know when evaluating this request?

The university infrastructure is the life blood of campus facilities, supplying all utilities from the central plant to each facility on campus. Without high quality systems the outcomes for student can be impacted and the university will not be able to meet its strategic goals.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change

Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice

We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation

We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region

We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rate and building community.

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 14

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Project Number: 40000118
Project Title: 2023 - 2025 Minor Works - Infrastructure Preservation

SubProjects

SubProject Number: 40000136
SubProject Title: Minor Works - Infrastructure Preservation - Utility Tunnel Improv

Project Summary

Minor Works - Infrastructure Preservation - Utility Tunnel Improvements - Eastern Washington University is requesting funds in this category to address aging and deterioration of the campus tunnel infrastructure. This infrastructure system is a key component to utility distribution and overall campus operations.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

The university utility tunnel system was first constructed in the 1960's. Construction of several sections continued through the 1990's, with a recent small extension built in 2018. The tunnels are the primary means of distributing steam for heating, chilled water for cooling and other utilities to the 70 buildings on campus. Little to no maintenance or repair has been performed in the tunnel system. At several locations the long-term effects of a rough service life and harsh environmental conditions (large temperature swings, groundwater seepage into the tunnel, age, etc.) have left some areas and systems in the tunnel deteriorated to the point of failure. Repairs to several structural components, and mechanical and electrical equipment are needed now more than ever.

Eastern Washington University is requesting $1,500,000 for upgrades, improvement, and replacement of tunnels on the university Cheney campus in the category of Infrastructure Renewal.

Residing entirely below grade and out of site by most people the tunnel system has never had any significant maintenance or repair since constructed. An intended secondary use of the tunnels is that the tunnel lids serve as pedestrian sidewalks in several areas across campus. In one area, the original tunnel construction included a couple sets of concrete stairs as part of the tunnel lid. This area with the stairs has experienced high levels of deterioration of the interior of the tunnel lid and are approaching imminent failure. This area also has complex piping systems beneath the stairway which if/when failure occurs will compromise other systems such as heating and cooling and that makes this area is a priority.

In many other areas of the tunnel structural components that hold in place and physically support the various utilities have become highly deteriorated. The integrity of the mechanical and electrical systems residing in the tunnel have slowly begun to be compromised by this degradation.

Eastern's facilities are complex and costly resources to maintain and operate; these minor works infrastructure renewal projects enable us to defer major capital expenditures through creative preservation measures to extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state.

Safety issues:

The existing tunnel system is approximately 2.5 miles long and is legally defined as a "confined space". The tunnel contains miles of piping which deliver steam, chilled water, and electricity to the 70 plus buildings on campus. The tunnel also contains several stations, or locations rather, where various pieces of equipment related to the distribution processes of each utility reside. The tunnel is equipped with lighting throughout most of the complex. Unfortunately, most of the equipment described is from the original construction of the tunnel and time has taken a toll on the equipment.

For instance, much of the tunnel lighting system has failed over time. Numerous individual fluorescent light fixtures have rusted out and are a safety hazard with respect to proper grounding of the fixture. Additionally, many of the fixtures no longer

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operate which creates trip/fall hazards in areas where lighting is critically important.

Another example of a component failure is the support system for the piping network that resides in the tunnel. Typically, piping is carried on a rack that provides structural support for the piping that runs throughout the tunnel. Much of the steel structure of the support is highly rusted and in danger of failure.

Compliance issues:
Tunnel lighting, and the lack of proper lighting have become a compliance issue. Not acting in the modernization and integration will affect the reliability of maintaining and monitoring older buildings that have not yet been upgraded and will hinder operations and energy management, moreover EWU's commitment to state regulations compliance, campus efficiency and sustainability goals will not have been met.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

The tunnels are the primary distribution conduit for most of the campus utility connections to buildings. Since all building receive their utilities from the infrastructure, they cannot operate without an effective and efficient systems of distribution, control, and automation. The condition of tunnel system is reviewed and reported regularly by Eastern staff and paid expert consultants. This collaboration is used to define and request legislative funding that keeps the campus operation and brings the university infrastructure into compliance with local jurisdiction-having-authority and regulatory agencies. Facilities is responsible for the health, safety, security, and comfort of all the use the campus on a day-to-day basis. This includes those who work in the tunnels and walk above them.

This project was developed to address reduction in operation costs, bring systems to current code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the tunnel to support high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This project will provide for the demolition of the existing tunnel/sidewalk/stairs described above, make repairs to this section,

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and rebuild this area in its current location. This area is an area of moderately high pedestrian traffic. This project will also make repairs to the earlier noted structural, mechanical, and electrical components such as tube steel racking for the utility piping, electrical lighting, and various pumps that evacuate water within the tunnel.

The design component will be minimal and limited to the immediate areas of concern related to the tunnel/sidewalk/stair. The project will begin once funding is approved and completed within the biennium. The university understands that funding will not always be available at the level requested, therefore, we plan for our projects to be dynamic and flexible with the funding that is made available. We will either reduce the scope of a specific project or reduce the facilities being addressed in this request.

There are no predesign studies required for this level of minor works projects. The project will start as soon as the appropriations are approved (approximately July 2023) with the intent of completing the project prior to the end of the biennium (June 2025). All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
This project will eliminate imminent structural failure to a portion of our tunnel/sidewalk system. There is a wealth of visible information suggesting the failure will occur. To what extent and to how drastic, no one currently knows. Maintaining and upgrading these systems is the university's responsibility. The requests addressed as the highest priority issues are currently identified and responded to with upgrades and replacement that respond to specific failures and low performing conditions. There are also regulatory requirements associated with the operations of our systems that we must address on a periodic basis to continue to comply.

The result of not acting will be the eventual structural failure of this area of the tunnel system. Once this failure occurs the university can expect to see failures of the steam/chilled water/electrical distribution systems that sit beneath the tunnel/sidewalk/stairs location. This will require additional funds over and above those currently being requested. There also exists the potential for personal injury depending on how the failure occurs. The probability for injury is likely low but does exist and should be noted/corrected. The existing condition impacts the ability to provide a safe, comfortable, and accessible campus for all that use it.

The primary goal of these projects in the sustained operations of the campus infrastructure. Better systems and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority. Whether better operations, better sustainable design and construction, better energy cost parameters, lower cost of operations other goals these projects are programmed, designed, and implement to meet university goals of access and high-quality instruction for our students.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
As stated above the university continually reviews, surveys and track costs of these systems to building priority projects for renewal and upgrade. These projects are scrutinized by a problem-solving methodology to derive the highest need each biennium. From there the following alternatives are considered.

Alternative 1) Renovation of the entire system- major project renovation. The goal of minor works infrastructure renewal

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projects like these are to extend systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.

Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.

Alternative 3) Taking the space or system off-line until funding is available. – Infrastructure does not allow to take portion of the campus off-line due to the structure and distribution of utilities across the campus. The systems listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.

Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Facilities may not be available, systems can become unusable, there may be a safe and security issue or failure could cause more damage to other system and building operations.

Alternative 5) Renewal or replacement of a portion of the system. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities. At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time. Given the nature of the noted deficiencies there is no alternative other than “do nothing” which is not considered feasible in this instance, for the tunnel/sidewalk/stair location, or for the many locations within the tunnel where other structural, mechanical, and electrical issues remain.

This direction was chosen because of the safety issue present to the pedestrian public related to the stairs, as well as the potential for interruption of services due to catastrophic failure of one or more of the mechanical, electrical, or structural components failing.

Infrastructure Preservation projects primary goal are to maintain, preserve, and extend the lifecycle of existing state facilities and assets. In most cases the systems and equipment addressed in these requests are at the end, or past the end of their effective lifecycle and need upgrading or replacement. System and equipment failure are not productive alternatives. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the perpetual lack of available resources. The university evaluates all alternatives including deferring the projects to a later date. The analysis is based upon the needs of the university and academic and student-based programs to continue to succeed and meet the goal of our strategic plan. These projects do not have any predesign associated with their implementation.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

The clientele associated with this request include all university students, faculty, staff, and community members that use our facilities on campus. This is our service area which includes a variety of university and community activities daily. Some projects specifically address certain buildings but, these improvements are a benefit to the campus as a whole and our entire clientele. Because Eastern is a public university our campus also supports the local and region community. As stated

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under the problem or opportunity to be addressed, the university core themes are improved, as we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.

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No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
Infrastructure Preservation provides for the long-term operations of campus facilities through the distribution of Primary Electrical Power, Steam, Chilled Water and Domestic Water.

It is the university's responsibility to be good steward of state resources, to maintain and upgrade these systems in an orderly manner thereby reducing the probability of expensive unplanned outages. The requests addressed as the highest priority issues are currently identified and responded to with upgrades and replacement that respond to specific failures and low performing conditions. There are also regulatory requirements associated with the operations of our systems that we

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must address on a periodic basis to continue to comply with all current codes.

As is the case with reduction of approved funding, the university will prioritize the highest needed project and defer others as required. In many cases there will be an additional burden on our operation budgets.

It is vital to improve upon systems as they age and deteriorate. The cost of maintenance and operations will be less effective and cause a substantial impact on state operating resources for their entire operation. Prioritization and implementation of these types of projects are the best option as they reduce the total replacement costs and defer major capital request by extending the lifecycle of the facility, address deferred maintenance backlog, and help meet the university's sustainability mission and goals, reduce energy costs as well as GHG greenhouse emissions.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rate and building community.

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SubProject Title: **Minor Works - Infrastructure Preservation - Utility Tunnel Improv**

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 14

Project Summary

Minor Works - Infrastructure Preservation - Building Automation/Energy Management Improvements - A high priority for the university is energy management and campus sustainability. Low cost upgrades and improvement to our Building Automation and Energy Management system can have an immediate and positive effect on these issues and contribute to the reduction of carbon footprint for the university on the Cheney Campus.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern Washington University maintains a sophisticated campus wide building automation system (BAS) and energy management systems (EMS). Many buildings on campus are not modernized with the BAS/EMS systems. This project will integrate remaining campus buildings with new innovative BAS/EMS that is current with EWU's campus operating and monitoring system. This priority request for the BAS/EMS integration is to modernize the remaining campus buildings to meet current control strategies and optimize energy management practices and gather utility usage through metering. This will allow university staff to monitor and manage these systems efficiently from a centralized location.

EWU's priority request for the BAS/EMS integration and modernization of remaining campus buildings will certainly employ greater energy efficiency in all aspects of our buildings, improve energy efficiency standards, substantially reduce utility cost, and ultimately fulfil reduction of GHG Green-House gas emissions in support of our sustainability commitment.

The Washington Clean Buildings Act was signed into law during the 2019 legislative session. The act establishes a first-of-its-kind standard that will improve the energy performance of thousands of large commercial buildings while lowering costs and pollution from fossil fuel consumption. EWU's request will bring the campus much closer in compliance of the Clean Buildings Act, energy performance standards and energy use intensity reduction targets. EWU will gain full utility and end-use metering for problem-solving, billing and reporting to the Washington State Department of Commerce for House Bill 1257 monitoring & compliance.

EWU is requesting $1,250,000 for this energy performance upgrade in bringing our campus buildings current conditions into compliance with the Washington state requirements in energy efficiency, natural gas preservation use & reduction of GHG green-house gas emissions. Building included in this request are ART, Communications, Digital Media, Music, Theatre, Cadet and Cheney Hall.

Operation Budget Savings – Energy Savings. EWU's priority request for the BAS/EMS integration and modernization of remaining campus buildings will provide, tenant comfort, HVAC and lighting control, utility and end use metering, energy & systems analytics, energy reporting, HVAC optimization, fault detection & diagnosis, predictive maintenance, reporting, measurement & verification of building efficiencies. BAS/EMS deliver greater energy efficiency, lower operating and maintenance costs, better indoor air quality, greater occupant comfort and productivity.
Problem or Opportunity - The BAS/EMS integration will modernize operations and management that facilitate EWU's innovative campus operating system.

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Not acting in the modernization and integration will affect the reliability of maintaining and monitoring older buildings that have not yet been upgraded and will hinder operations and energy management, moreover EWU's commitment to state regulations compliance, campus efficiency and sustainability goals will not have been met.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion -EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

The improvement on Energy Management and Automations systems is a top priority for central utility distribution facilities like Eastern Washington University. Since all building receive their utilities from the infrastructure, they cannot operate without an effective and efficient systems of distribution, control, and automation. The condition of these primary system is reviewed and reported regularly by Eastern staff and paid expert consultants. This collaboration is used to define and request legislative funding that keeps the campus operation, response to energy conservation and sustainability and brings the university infrastructure into compliance with local jurisdiction-having-authority and regulatory agencies.

The projects contained in this request are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This BAS/EMS integration project, if funding is approved with design and construct several projects that will upgrade and renew systems and systems components to meet higher levels of energy conservation and sustainability.

This request will scope design and construction implementation of sophisticated campus wide building automation systems and energy management systems. There are no predesign studies required for this level of minor works projects. The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2025). The areas of construction listed in this request have been prioritized by areas and phase so if the approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in

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undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
The primary goal of these projects in the sustained operations of the campus infrastructure. Better systems and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority. Whether better operations, better sustainable design and construction, better energy cost parameters, lower cost of operations other goals these projects are programmed, designed, and implement to meet university goals of access and high-quality instruction for our students.

As is objectively the case, to not take actions will continue the degradation systems and infrastructure conditions and operations. The costs for operations, including energy costs will continue to increase. Systems and equipment that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university daily operations and student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that could negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
As stated above the university continually reviews, surveys and track costs of these systems to building priority projects for renewal and upgrade. These projects are scrutinized by a problem-solving methodology to derive the highest need each biennium. From there the following alternatives are considered.
Alternative 1) Renovation of the entire system- major project renovation. The goal of minor works preservation projects like these are to extend systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – Infrastructure does not allow to take portion of the campus off-line due to the structure and distribution of utilities across the campus. The systems listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Facilities may not be available, systems can become unusable, there may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities. At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

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Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase. Infrastructure renewal projects (Building Automation and Energy Management upgrades) do not add square footage or new units but replaces and renews existing systems/equipment for continued high quality campus operations.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4) Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

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2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:34PM

Project Number: 40000118
Project Title: 2023 - 2025 Minor Works - Infrastructure Preservation

SubProjects

SubProject Number: 40000137
SubProject Title: Minor Works - Infrastructure Pres. - Building Automation

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

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Project Number: 40000118
Project Title: 2023 - 2025 Minor Works - Infrastructure Preservation

SubProjects

SubProject Number: 40000137
SubProject Title: Minor Works - Infrastructure Pres. - Building Automation

Is there additional information you would like decision makers to know when evaluating this request?

It is vital to improve upon systems as they age and deteriorate. The cost of maintenance and operations will be less effective and cause a substantial impact on state operating resources for their entire operation. Prioritization and implementation of these types of projects are the best option as they reduce the total replacement costs and defer major capital request by extending the lifecycle of the facility, address deferred maintenance backlog, and help meet the university's sustainability mission and goals, reduce energy costs as well as GHG greenhouse emissions.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change

Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice

We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation

We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region

We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rate and building community

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 14

Project Summary

Minor Works - Infrastructure Preservation - Campus Walkway Improvements - Eastern Washington University, Cheney campus is a highly pedestrian oriented campus for students, staff and community members. This request is to keep those

Project Number: **40000118**
Project Title: **2023 - 2025 Minor Works - Infrastructure Preservation**

SubProjects

SubProject Number: **40000138**
SubProject Title: **Minor Works - Infrastructure Preservation - Campus Walkway Improv**

pedestrian walkways and other amenities operational and safe for the users of our campus.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

The safety of all people that work, attend class, or visit our campus is the highest priority of the university. The campus has many vehicular and pedestrian routes to help people navigate daily to their various destinations whether it be to classes, offices, gathering spaces or to get to a work location. These routes are constructed of varying materials such as concrete, asphalt, and brick and vary in type from being walkways, access drives, sidewalks, and paths. Most of these routes have been in place for many years, are heavily worn, and do not meet current accessibility and safety codes.

Eastern Washington University is requesting $800,000 for upgrades and replacement of campus walkways, sidewalks, access drives and other pedestrian pathways.

This request has been developed by evaluation existing pedestrian and vehicle pathways on campus. Many are in need of upgrades due to their age and condition. Others need to be revised to meet current safety and Americans with Disabilities (ADA) standards. Compliance and safety issues are continually reviewed for the risk to the individuals using the Cheney campus. The risk to the university due to trips and slips on campus walkways and also any response to potential injury caused by old and deteriorated sidewalks and pathways.

Eastern's facilities are complex and costly resources to maintain and operate; these minor works infrastructure renewal projects enable us to defer major capital expenditures through creative preservation measures to extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. Simply stated, even facilities that are well maintained wear out over time and need major repairs or replacement that require more resources than are available from general maintenance and operations budgets. These areas are part of campus day-to-day needs to support student success and university staff's needs.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

This project was developed to address reduction in operation costs, bring walkway and service drive components into current

Project Number: **40000118**
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code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the walkways to support high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This project will provide for the demolition of the existing sidewalk, pathways and service drives described above, make repairs to this section, and rebuild this area in its current location. This area is an area of moderately high pedestrian traffic. This project will also make repairs to handrails, curb cuts and other sidewalk amenities that are part of pedestrian traffic flow.

The design component will be minimal and limited to the immediate areas of concern related to the sidewalk/pathways/exterior stairs. The project will begin once funding is approved and completed within the biennium. This request will scope design and construction implementation of sophisticated campus wide building automation systems and energy management systems. There are no predesign studies required for this level of minor works projects. The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

The university understands that funding will not always be available at the level requested, therefore, we plan for our projects to be dynamic and flexible with the funding that is made available. We will either reduce the scope of a specific project or reduce the facilities being addressed in this request.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action? This project will repair or replace those areas of pedestrian and service access drives that need to be repaired or replaced. Areas that have met and, in many cases, exceeded their planned life cycle or need improvements to meet current compliance standards.

The result of not acting will be the eventual failure of these areas. That could and will cause potential injury to campus users and well as the potential damage to maintenance equipment. Continually to use failing and update sidewalk infrastructure will increase university costs of operations, potential tort claims and citations and fines from safety and regulatory agencies.

The primary goal of these projects in the sustained operations of the campus infrastructure. Better systems and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority. Whether better operations, better sustainable design and construction, better energy cost parameters, lower cost of operations other goals these projects are programmed, designed, and implement to meet university goals of access and high-quality instruction for our students.

As is objectively the case, to not take actions will continue the degradation systems and infrastructure conditions and operations. The costs for operations, including energy costs will continue to increase. Systems and equipment that exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university daily operations and student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that could negative impact university offering and operating costs.

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What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.

As stated above the university continually reviews, surveys and track costs of these systems to building priority projects for renewal and upgrade. These projects are scrutinized by a problem-solving methodology to derive the highest need each biennium. From there the following alternatives are considered.

Alternative 1) Renovation of the entire system- major project renovation. The goal of minor works infrastructure renewal projects like these are to extend systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.

Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.

Alternative 3) Taking the space or system off-line until funding is available. – Infrastructure does not allow to take portion of the campus off-line due to the structure and distribution of utilities across the campus. The systems listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.

Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Facilities may not be available, systems can become unusable, there may be a safe and security issue or failure could cause more damage to other system and building operations.

Alternative 5) Renewal or replacement of a portion of the system. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities. At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time. Given the nature of the noted deficiencies there is no alternative other than “do nothing” which is not considered feasible in this instance, for the tunnel/sidewalk/stair location, or for the many locations within the tunnel where other structural, mechanical, and electrical issues remain. This direction was chosen because of the safety issue present to the pedestrian public related to the walkways, exterior stairs, service drives and other pedestrian amenities.

Infrastructure Preservation projects primary goal are to maintain, preserve, and extend the lifecycle of existing state facilities and assets. In most cases the systems and equipment addressed in these requests are at the end, or past the end of their effective lifecycle and need upgrading or replacement. System and equipment failure are not productive alternatives. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the perpetual lack of available resources. The university evaluates all alternatives including deferring the projects to a later date. The analysis is based upon the needs of the university and academic and student-based programs to continue to succeed and meet the goal of our strategic plan.

These projects do not have any predesign associated with their implementation.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

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SubProjects

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SubProject Title: Minor Works - Infrastructure Preservation - Campus Walkway Improv

The clientele associated with this request include all university students, faculty, staff, and community members that use our facilities on campus. This is our service area which includes a variety of university and community activities daily. Some projects specifically address certain buildings but, these improvements are a benefit to the campus as a whole and our entire clientele. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase. Infrastructure renewal projects, sidewalks and pathway improvements, do not add square footage or new units but replaces and renews existing systems/equipment for continued high quality campus operations.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
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6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy

Project Number: **40000118**
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184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
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How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
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Is there additional information you would like decision makers to know when evaluating this request? It is the university's

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responsibility to be good steward of state resources, to provide safe state facilities, to maintain and upgrade systems in an orderly manner thereby reducing the probability of injury and expensive unplanned outages. The requests addressed as the highest priority issues are currently identified and responded to with upgrades and replacement that respond to specific failures and low performing conditions. There are also regulatory requirements associated with the operations of our systems that we must address on a periodic basis to continue to comply with all current codes. As is the case with reduction of approved funding, the university will prioritize the highest needed project and defer others as required. In many cases there will be an additional burden on our operation budgets.

It is vital to improve upon pedestrian sidewalks, service drives and other pathways, as they age and deteriorate. The cost of maintenance and operations will be less effective and cause a substantial impact on state operating resources for their entire operation. Prioritization and implementation of these types of projects are the best option as they reduce the total replacement costs and defer major capital request by extending the lifecycle of the facility, address deferred maintenance backlog, and help meet the university's sustainability mission and goals, reduce energy costs as well as GHG greenhouse emissions.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

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We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

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We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

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Project Title: 2023 - 2025 Minor Works - Infrastructure Preservation

SubProjects

SubProject Number: 40000138
SubProject Title: Minor Works - Infrastructure Preservation - Campus Walkway Improv

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rate and building community.

Location

City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009

Project Type

Infrastructure Preservation (Minor Works)
Infrastructure Preservation (Minor Works)
Infrastructure Preservation (Minor Works)
Infrastructure Preservation (Minor Works)

Growth Management impacts

Not Applicable

Growth Management impacts

Not Applicable

Growth Management impacts

Not Applicable

Growth Management impacts

Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	2,000,000				2,000,000
057-1	State Bldg Constr-State	1,500,000				1,500,000
057-1	State Bldg Constr-State	1,250,000				1,250,000
057-1	State Bldg Constr-State	800,000				800,000
	Total	**5,550,000**	**0**	**0**	**0**	**5,550,000**

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Project Number: 40000118
Project Title: 2023 - 2025 Minor Works - Infrastructure Preservation

SubProjects

SubProject Number: 40000135
SubProject Title: Minor Works - Infrastructure Preservation - Medium Volt Improve

		Future Fiscal Periods			
		2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

No Operating Impact

No Operating Impact

No Operating Impact

Narrative

SampleThis project consists of replacement and upgrades to existing facilities and building systems that already have operating funding in-place.

Narrative

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000118	40000118
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:35PM

Project Number: **40000134**
Project Title: **Preventative Maintenance/Backlog Reduction**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 17

Project Summary

Preventative Maintenance/Backlog Reduction projects allow for the university to apply funding to components and systems to lengthen life cycles, reduce maintenance and operations costs, implement energy saving upgrades and replacements improve the campus sustainability and reduce our carbon footprint.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern's facilities are complex and costly resources to maintain and operate. These minor works backlog reduction projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the improvement and maintenance needs of our facilities and arranged for these projects to be completed within one renovation or improvement phase.

The results of these identified projects will be:
· Reduction of backlog maintenance
· Reduction of operating cost including the cost of utilities to operate
· Replacement of obsolete equipment with new and higher efficiency equipment and systems
· Improved operations and indoor air quality and health safety related operations
· Reduction in costs associated with building cleaning
· Higher level of comfort for building customers and improved environment for teaching and student learning.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Facilities preservation projects contained in this request are developed and designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
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Project Number: **40000134**
Project Title: **Preventative Maintenance/Backlog Reduction**

Description

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This request will address high priority maintenance issues that are of high cost and critical need on the campus. These projects are developed to address campus wide facilities deterioration and operational failure due to lack of funding for normal operational maintenance on buildings and building systems. Projects include all facilities preservation and infrastructure preservation projects. These projects were identified through evaluation of our current systems by engineering consultants, regulatory agencies and plant staff. We captured the costs to maintain and operate the existing structures through our computerized maintenance management systems (CMMS). This work is specifically listed as repairs and replacements that cannot be completed due to lack of manpower or lack of operational resources.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phased, so the if approved funding is less than requested, a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
These projects reduce total replacement costs and defer major capital requests over a longer period of time. Implementing these projects extends the overall lifecycle of our facilities and aligns with our university's mission and goals by managing our maintenance backlog and reducing cost.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic and costly failures. Minor projects reduce the frequency of emergencies and cost less on a long-term basis.

Unfortunately, the results of not taking any action would be that deferred maintenance would increases and related operation cost would also increase. The potential for high-cost catastrophic failures of system and equipment could mean emergency repairs and replacement would be necessary impaction campus operation having higher costs the planned improvements or replacements. To not take actions will continue the degradation of systems and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university students and staff. Catastrophic failure is more costly than planned upgrades and improvement. Strategic planning for upgrades, improvements and replacements can avoid many problems that negatively impact university offerings and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Backlog reduction and preservation projects main goal are to maintain preserve and extend the lifecycle of existing state facilities and assist. In most cases the systems and equipment addressed in these requests are at the end or past then end of their lifecycle and are in need of upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goal of our strategic plan.

Project Number: **40000134**
Project Title: **Preventative Maintenance/Backlog Reduction**

Description

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alt**ernative 5)** Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the students on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University strategic core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

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Description

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

The projects included here affect many other state programs such as sustainability and cost-effective facilities management. These projects extend the lifecycle of our buildings' systems and respond to the normal life cycle deterioration that progress in all facilities.

EWU expands opportunities for personal transformation through excellence in learning through; enhancing access to higher education in the Inland Northwest and beyond and supporting traditional college-bound students and those from under-served populations; Delivering high quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning and Promoting student success by supporting student engagement and timely degree completion.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

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Project Title: **Preventative Maintenance/Backlog Reduction**

Description

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> Americans with Disabilities Act (ADA) - 2010 Design Standards
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
High quality facilities are "key" to positive student outcomes. These projects reduce total replacement costs and defer major capital requests over a longer period of time. Implementing these projects extends the overall lifecycle of our facilities and aligns with our university's mission and goals by managing our maintenance backlog and reducing cost. Good planning, system renewal and minor capital improvements allow for long term reduction of operating costs, reduction of emergency or catastrophic failures and extend the lifecycle of mission critical systems for the university.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic and costly failures. Minor projects reduce the frequency of emergencies and cost less on a long-term basis. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and

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Description

reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's facilities are in integral part of our education mission and the quality of these spaces directly enhance the student experience and subsequently their personal and professional success. Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
061-1	EWU Capital Projects-State	11,085,000		2,217,000		2,217,000
	Total	**11,085,000**	**0**	**2,217,000**	**0**	**2,217,000**

		Future Fiscal Periods			
		2027-29	2029-31	2031-33	2033-35
061-1	EWU Capital Projects-State	2,217,000	2,217,000	2,217,000	
	Total	**2,217,000**	**2,217,000**	**2,217,000**	**0**

Operating Impacts

No Operating Impact

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Operating Impacts

Narrative

Backlog funds are used to replace and upgrade existing equipment and building systems that already have operating funding available.

SubProjects

SubProject Number: **40000121**
SubProject Title: **Preventative Maintenance/Backlog Reduction**

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Project Number: **40000134**
Project Title: **Preventative Maintenance/Backlog Reduction**

SubProjects

SubProject Number: **40000121**
SubProject Title: **Preventative Maintenance/Backlog Reduction**

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 17

Project Summary

Preventative Maintenance 2025-2027 Phase I - Preventative Maintenance/Backlog Reduction projects allow for the university to apply funding to components and systems to lengthen life cycles, reduce maintenance and operations costs, implement energy saving upgrades and replacements improve the campus sustainability and reduce our carbon footprint.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern's facilities are complex and costly resources to maintain and operate. These minor works backlog reduction projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the improvement and maintenance needs of our facilities and arranged for these projects to be completed within one renovation or improvement phase.

The results of these identified projects will be:
· Reduction of backlog maintenance
· Reduction of operating cost including the cost of utilities to operate
· Replacement of obsolete equipment with new and higher efficiency equipment and systems
· Improved operations and indoor air quality and health safety related operations
· Reduction in costs associated with building cleaning
· Higher level of comfort for building customers and improved environment for teaching and student learning.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Facilities preservation projects contained in this request are developed and designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and

SubProjects

SubProject Number: 40000121
SubProject Title: Preventative Maintenance/Backlog Reduction

improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This request will address high priority maintenance issues that are of high cost and critical need on the campus. These projects are developed to address campus wide facilities deterioration and operational failure due to lack of funding for normal operational maintenance on buildings and building systems. Projects include all facilities preservation and infrastructure preservation projects. These projects were identified through evaluation of our current systems by engineering consultants, regulatory agencies and plant staff. We captured the costs to maintain and operate the existing structures through our computerized maintenance management systems (CMMS). This work is specifically listed as repairs and replacements that cannot be completed due to lack of manpower or lack of operational resources.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phased, so the if approved funding is less than requested, a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
These projects reduce total replacement costs and defer major capital requests over a longer period of time. Implementing these projects extends the overall lifecycle of our facilities and aligns with our university's mission and goals by managing our maintenance backlog and reducing cost.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic and costly failures. Minor projects reduce the frequency of emergencies and cost less on a long-term basis.

Unfortunately, the results of not taking any action would be that deferred maintenance would increases and related operation cost would also increase. The potential for high-cost catastrophic failures of system and equipment could mean emergency repairs and replacement would be necessary impaction campus operation having higher costs the planned improvements or replacements. To not take actions will continue the degradation of systems and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university students and staff. Catastrophic failure is more costly than planned upgrades and improvement. Strategic planning for upgrades, improvements and replacements can avoid many problems that negatively impact university offerings and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Backlog reduction and preservation projects main goal are to maintain preserve and extend the lifecycle of existing state facilities and assist. In most cases the systems and equipment addressed in these requests are at the end or past then end

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SubProject Title: Preventative Maintenance/Backlog Reduction

of their lifecycle and are in need of upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goal of our strategic plan.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alt**ernative 5)** Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the students on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University strategic core themes are listed above.

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Project Title: **Preventative Maintenance/Backlog Reduction**

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SubProject Number: **40000121**
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Facilities Master Plan 2014 - Objectives
1) Represent the “DNA of EWU”—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

The projects included here affect many other state programs such as sustainability and cost-effective facilities management. These projects extend the lifecycle of our buildings’ systems and respond to the normal life cycle deterioration that progress in all facilities.

EWU expands opportunities for personal transformation through excellence in learning through; enhancing access to higher education in the Inland Northwest and beyond and supporting traditional college-bound students and those from under-served populations; Delivering high quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning and Promoting student success by supporting student engagement and timely degree completion.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

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If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> Americans with Disabilities Act (ADA) - 2010 Design Standards
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
High quality facilities are "key" to positive student outcomes. These projects reduce total replacement costs and defer major capital requests over a longer period of time. Implementing these projects extends the overall lifecycle of our facilities and aligns with our university's mission and goals by managing our maintenance backlog and reducing cost. Good planning, system renewal and minor capital improvements allow for long term reduction of operating costs, reduction of emergency or catastrophic failures and extend the lifecycle of mission critical systems for the university.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical

Project Number: **40000134**
Project Title: **Preventative Maintenance/Backlog Reduction**

SubProjects

SubProject Number: **40000121**
SubProject Title: **Preventative Maintenance/Backlog Reduction**

projects could cause premature, catastrophic and costly failures. Minor projects reduce the frequency of emergencies and cost less on a long-term basis. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's facilities are in integral part of our education mission and the quality of these spaces directly enhance the student experience and subsequently their personal and professional success. Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
Not Applicable

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Project Number: 40000134
Project Title: Preventative Maintenance/Backlog Reduction

SubProjects

SubProject Number: 40000121
SubProject Title: Preventative Maintenance/Backlog Reduction

Funding

Acct Code	Account Title	Expenditures: Estimated Total	Expenditures: Prior Biennium	Expenditures: Current Biennium	2025-27 Fiscal Period: Reapprops	2025-27 Fiscal Period: New Approps
061-1	EWU Capital Projects-State	8,000,000				2,000,000
	Total	**8,000,000**	**0**	**0**	**0**	**2,000,000**

Acct Code	Account Title	Future Fiscal Periods: 2027-29	2029-31	2031-33	2033-35
061-1	EWU Capital Projects-State	2,000,000	2,000,000	2,000,000	
	Total	**2,000,000**	**2,000,000**	**2,000,000**	**0**

Operating Impacts

No Operating Impact

Narrative

These project are replacement and upgrade to existing facilities and systems that already have funds assigned to their operations.

SubProject Number: 40000122
SubProject Title: 2023 - 2025 - Preventative Maintenance/Backlog Reduction Phase II

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Project Number: **40000134**
Project Title: **Preventative Maintenance/Backlog Reduction**

SubProjects

SubProject Number: **40000122**
SubProject Title: **2023 - 2025 - Preventative Maintenance/Backlog Reduction Phase II**

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 17

Project Summary

Preventative Maintenance 2025-2027 Phase II - Preventative Maintenance/Backlog Reduction projects allow for the university to apply funding to components and systems to lengthen life cycles, reduce maintenance and operations costs, implement energy saving upgrades and replacements improve the campus sustainability and reduce our carbon footprint.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern's facilities are complex and costly resources to maintain and operate. These minor works backlog reduction projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the improvement and maintenance needs of our facilities and arranged for these projects to be completed within one renovation or improvement phase.

The results of these identified projects will be:
· Reduction of backlog maintenance
· Reduction of operating cost including the cost of utilities to operate
· Replacement of obsolete equipment with new and higher efficiency equipment and systems
· Improved operations and indoor air quality and health safety related operations
· Reduction in costs associated with building cleaning
· Higher level of comfort for building customers and improved environment for teaching and student learning.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Facilities preservation projects contained in this request are developed and designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and

SubProjects

SubProject Number: 40000122
SubProject Title: 2023 - 2025 - Preventative Maintenance/Backlog Reduction Phase II

improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This request will address high priority maintenance issues that are of high cost and critical need on the campus. These projects are developed to address campus wide facilities deterioration and operational failure due to lack of funding for normal operational maintenance on buildings and building systems. Projects include all facilities preservation and infrastructure preservation projects. These projects were identified through evaluation of our current systems by engineering consultants, regulatory agencies and plant staff. We captured the costs to maintain and operate the existing structures through our computerized maintenance management systems (CMMS). This work is specifically listed as repairs and replacements that cannot be completed due to lack of manpower or lack of operational resources.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phased, so the if approved funding is less than requested, a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
These projects reduce total replacement costs and defer major capital requests over a longer period of time. Implementing these projects extends the overall lifecycle of our facilities and aligns with our university’s mission and goals by managing our maintenance backlog and reducing cost.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic and costly failures. Minor projects reduce the frequency of emergencies and cost less on a long-term basis.

Unfortunately, the results of not taking any action would be that deferred maintenance would increases and related operation cost would also increase. The potential for high-cost catastrophic failures of system and equipment could mean emergency repairs and replacement would be necessary impaction campus operation having higher costs the planned improvements or replacements. To not take actions will continue the degradation of systems and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university students and staff. Catastrophic failure is more costly than planned upgrades and improvement. Strategic planning for upgrades, improvements and replacements can avoid many problems that negatively impact university offerings and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Backlog reduction and preservation projects main goal are to maintain preserve and extend the lifecycle of existing state facilities and assist. In most cases the systems and equipment addressed in these requests are at the end or past then end

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of their lifecycle and are in need of upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goal of our strategic plan.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alt**ernative 5)** Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative 5 is the best-case scenario to balance high costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the students on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University strategic core themes are listed above.

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Project Title: **Preventative Maintenance/Backlog Reduction**

SubProjects

SubProject Number: **40000122**
SubProject Title: **2023 - 2025 - Preventative Maintenance/Backlog Reduction Phase II**

Facilities Master Plan 2014 - Objectives
1) Represent the “DNA of EWU”—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

The projects included here affect many other state programs such as sustainability and cost-effective facilities management. These projects extend the lifecycle of our buildings’ systems and respond to the normal life cycle deterioration that progress in all facilities.

EWU expands opportunities for personal transformation through excellence in learning through; enhancing access to higher education in the Inland Northwest and beyond and supporting traditional college-bound students and those from under-served populations; Delivering high quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning and Promoting student success by supporting student engagement and timely degree completion.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

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If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
When system or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> Americans with Disabilities Act (ADA) - 2010 Design Standards
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
High quality facilities are "key" to positive student outcomes. These projects reduce total replacement costs and defer major capital requests over a longer period of time. Implementing these projects extends the overall lifecycle of our facilities and aligns with our university's mission and goals by managing our maintenance backlog and reducing cost. Good planning, system renewal and minor capital improvements allow for long term reduction of operating costs, reduction of emergency or catastrophic failures and extend the lifecycle of mission critical systems for the university.

The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical

Project Number: **40000134**
Project Title: **Preventative Maintenance/Backlog Reduction**

SubProjects

SubProject Number: **40000122**
SubProject Title: **2023 - 2025 - Preventative Maintenance/Backlog Reduction Phase II**

projects could cause premature, catastrophic and costly failures. Minor projects reduce the frequency of emergencies and cost less on a long-term basis. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

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We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

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We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's facilities are in integral part of our education mission and the quality of these spaces directly enhance the student experience and subsequently their personal and professional success. Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving graduation rates and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Facility Preservation (Minor Works)

Growth Management impacts
Not Applicable

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Project Title: Preventative Maintenance/Backlog Reduction

SubProjects

SubProject Number: 40000122
SubProject Title: 2023 - 2025 - Preventative Maintenance/Backlog Reduction Phase II

Funding

Acct Code	Account Title	Expenditures: Estimated Total	Expenditures: Prior Biennium	Expenditures: Current Biennium	2025-27 Fiscal Period: Reapprops	2025-27 Fiscal Period: New Approps
061-1	EWU Capital Projects-State	868,000				217,000
	Total	**868,000**	**0**	**0**	**0**	**217,000**

		Future Fiscal Periods: 2027-29	2029-31	2031-33	2033-35
061-1	EWU Capital Projects-State	217,000	217,000	217,000	
	Total	**217,000**	**217,000**	**217,000**	**0**

Operating Impacts

No Operating Impact

Narrative

These project are replacement and upgrade to existing facilities and systems that already have funds assigned to their operations.

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Capital Project Request

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000134	40000134
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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Version: 24 EWU Capital Budget

Report Number: CBS002
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Project Number: **40000123**
Project Title: **Kingston Hall Renovation**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 18

Project Summary

This project is on the university's Ten-Year Plan but currently outside a three biennia request. This project provides for a complete modernization of Kingston Hall which currently houses the Mathematics Department and the College of Business & Public Administration. The deficiencies of the building lie in its inflexible design, dark interior spaces, and inability to accommodate current educational needs of the university. The building is very inefficient according to today's standards established by the Higher Education Coordinating Board for the State of Washington. As a measure of assignable square footage to gross square footage, Kingston Hall is currently 45 percent efficient compared to the standard of 60 percent required for general academic buildings. The high quantity of space that is not assigned to academic functions further increases the utility operating and maintenance costs associated with the building. Kingston Hall was originally built in 1972 at a size of 49,472 gross square feet. The three story structure, plus a half basement, consists primarily of reinforced masonry and concrete. It is structurally sound and received upgrades to the fire alarm system in 2009. In 2010, a new access control system was also installed. The current condition of the building is such that it can continue to serve the university until its scheduled modernization in 2025-27 and beyond.

Project Description

Kingston Hall Renovation - Please refer to Eastern Washington University Ten-Year Plan and Facilities Master Plan for more on this project

Location

City: Cheney **County:** Spokane **Legislative District:** 009

Project Type

Remodel/Renovate/Modernize (Major Projects)

Growth Management impacts

Not Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
057-1	State Bldg Constr-State	80,400,000				
	Total	**80,400,000**	**0**	**0**	**0**	**0**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State	400,000	5,000,000	75,000,000	
	Total	**400,000**	**5,000,000**	**75,000,000**	**0**

Operating Impacts

No Operating Impact

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Version: 24 EWU Capital Budget

Report Number: CBS002
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Project Number: **40000123**
Project Title: **Kingston Hall Renovation**

Operating Impacts

Capital Project Request

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000123	40000123
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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Report Number: CBS002
Date Run: 9/10/2024 12:38PM

Project Number: **40000124**
Project Title: **Showalter Hall Renovation**

Description

Starting Fiscal Year: 2026
Project Class: Preservation
Agency Priority: 19

Project Summary

This project is on the university's Ten-Year Plan but currently outside a three biennia request.

Project Description

Showalter Hall Renovation - Please refer to Eastern Washington University Ten-Year Plan and Facilities Master Plan for more on this project.

Location

City: Cheney **County:** Spokane **Legislative District:** 009

Project Type

Remodel/Renovate/Modernize (Major Projects)

Growth Management impacts

No Applicable

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	86,400,000				
	Total	**86,400,000**	**0**	**0**	**0**	**0**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State		400,000	6,000,000	80,000,000
	Total	**0**	**400,000**	**6,000,000**	**80,000,000**

Operating Impacts

No Operating Impact

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000124	40000124
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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2025-23 Biennial Capital Budget Request

C - Program Projects

Geothermal Plant – Node 1

Dental Therapy Lab and Clinic

Civil Engineering Building – Applied Engineering

Lucy Covington Center

Minor Works – Program 057 2025-27

Minor Works – Program 061 2025-27

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Project Number: **40000158**
Project Title: **Geothermal Plant - Node 1**

Description

Project Phase Title: Design & Construction
Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 2

Project Summary

The Geothermal Plant - Node 1 will create a facility which uses ground source heat pump technology to heat and cool up to 11 buildings on campus, thereby reducing the energy use and carbon emissions to meet the requirements of HB 1390. This project is the center piece for plans to decarbonize the campus, and several other projects depend on this central component to move forward.

Project Description

What is the problem/opportunity? Identify: priority,underserved people/communities, operating budget savings, public safetyimprovements & clarifying details. Preservation projects: includeinformation about the current condition of the facility/system.

In 2019 the Clean Buildings Performance Standard (CBPS) wasestablished, requiring the Department of Commerce to establish rules for energyperformance standards for commercial buildings. Through the reduction of building energy usage, the performance standardseeks to maximize reductions in greenhouse gas emissions from the builtenvironment. The performance standard includes energy use intensity targets bybuilding type, as well as requirements for an energy management plan,operations and maintenance program, energy efficiency audits, and investmentsin energy efficiency measures. Theadoption of HB1390 for campuses utilizing district heating and cooling systems,such as Eastern Washington University, created a pathway for even greaterreductions in greenhouse gas emissions by focusing on phasing out the use offossil fuels to generate steam for campus wide heating.

Opportunity - To reduce greenhouse gas emissions, reduce building Energy Use Intensity (EUI), comply with HB 1390 and (CBPS), support the EWU decarbonization plan (currently being drafted), and to reduce the overall campus energy and operating costs.

Priority – The Geothermal Plant – Node 1 is the center piece to EWU's decarbonization plan and is vital to the success of other planned projects, including the Martin-Williamson renovation which is being submitted as a separate capital budget request in this biennium. Supported and justified by multiple studies noted below, this technology was found to be the most effective approach in addressing decarbonization and energy use for the University. Other supporting studies, attached to this request or submitted separately in EWU's 25/27 budget request, include: Ground Source Heat Pump Feasibility Study, EWU Hydrogeologic Evaluation, Martin-Williamson Predesign, Civil Engineering Building – Applied Engineering Predesign, Lucy Covington Center Predesign, EWU Decarbonization Plan, and Energy Audits for existing buildings proposed to be connected to the Geothermal Plant (study underway).

Underserved people / communities – Eastern Washington University continues to provide opportunities for underserved and diverse populations. More than 1 in 3 students are from diverse backgrounds, 44% are the first in their family to attend college, and Eastern offers one of the most affordable and accessible educations from a 4-year university. In addition, it is well documented that climate change impacts underserved and low-income communities the hardest of all. This project will support underserved populations locally and on a long-term basis globally by lessening the impacts of human caused climate change.

Operating budget savings – This project will help to reduceoperating costs for the multiple buildings that are eventually connected. See attached studies for more in-depthanalysis and how this project is related to other proposed projects on campus.

Public safety improvements – It will serve to improve thesafety and longevity of the existing buildings, and more importantly help toreduce the long-term impacts of climate change. This region is experiencing records setting temperatures and moreintense wildfires year after year, including an evacuation notice due to localfires in 2023. If meaningful stepsaren't taken to curb the impacts of climate change, conditions will continue toworsen for future generations.

Clarifying details – In summary, this project is part of alarger initiative to reduce energy use and carbon emissions on the campus bytransitioning from burning fossil fuels (natural gas) to ground source heatpump technology (electric). As the

Project Number: **40000158**
Project Title: **Geothermal Plant - Node 1**

Description

newGeothermal Plant – Node 1 comes on-line, multiple buildings will connect to andbenefit from one of the most efficient energy sources for this climate.

Current condition of the facility / system – The current steamplant is fortunately in good operating condition and it will be used in tandem formany years as the transition to electricity occurs for more of the campus. It will also serve as a backup system for built-inredundancy while new technology is tested and implemented.

What will the request produce or construct(predesign/design of a building, additional space, etc.)? When will the projectstart/end? Identify if the project can be phased, and if so, which phase isincluded in the request. Provide detailed cost backup.

This project will entail design and construction of an openloop ground source heat pump plant that will be sized to serve up to 11 existingand new buildings on campus (approximately 500,000 sf). See reports attached to this request. It will extract water from the aquifer, passit through a heat exchanger, and then return the water through injectionwells. No ground water will be consumedin the process.

Design is anticipated to begin in Sept. 2025, constructionwould begin in Nov. 2026, and substantial completion would be anticipated in2027.

While the main plant and a number of the initial wells willneed to be constructed in one phase, additional wells could be brought on-lineas campus buildings are connected. Thedrilling of a test well will help to determine a final design and provide moreinformation about potential phasing. Thetest well is tentatively scheduled to be drilled in the spring of 2025, aheadof funding for this project.

How would the request address the problem or opportunityidentified in question 1? What would be the result of not taking action?

Not taking action would result in the continued use of aless efficient heating & cooling systems, higher operating and maintenancecosts of an aging components, not complying with state legislation thatrequires public institutions to reduce energy use and carbon emissions, potentialfines for not complying with the state and federal energy performance standards(anticipated by 2027), requiring increased future costs due to constructionescalation, and contributing to continuing and increasing impacts of climatechange – both locally and globally.

If approved, this request would directly contribute to therequirement of meeting increasing energy efficiency performance standards andreducing greenhouse gas emissions to levels established by the State of WA,Dept. of Commerce, and Dept. of Ecology. It would also move EWU closer to meeting the University's long-termplanning and sustainability goals.

What alternatives were explored? Why was the recommendedalternative chosen? Be prepared to provide detailed cost backup. If thisproject has an associated predesign, please summarize the alternatives thepredesign considered.

In the attached and related reports, systems other thangeothermal ground source heat pumps were explored. Alternate systems evaluated include 1) existingsystem - gas fired boilers to produce steam, 2) using renewable natural gas tofuel existing boilers, and 3) VRF – Variable Refrigerant Flow systems that useair to air heat pump technology. Moredetail can be found in the reports, but to summarize the findings for eachsystem:

1) Existing gas fired boilers – This system would result inno changes, no added upfront costs, and it would not address any of theproblems or meet state energy use requirements.

2) Using renewable natural gas instead of more commonlyavailable utility provided natural gas – While possible in theory, thisresource is not feasible or affordable in the quantity required to heat thecampus. If the renewable gas wereavailable, current pricing would be approximately (10) times the currentutility rate costs.

3) Switching individual buildings to VRF systems – Thissystem could be used to heat and cool buildings, however it increasesmaintenance and operations costs substantially, components would be completelydecentralized and less energy efficient, it would require area increases ineach of the buildings to house additional equipment, air to air heat pumps canbe problematic during the colder months in the eastern Washington climate, andmechanical equipment has a much shorter lifespan.

The recommendation of geothermal ground source heat pumpswas chosen because it was the most effective system to address the problems ona long-term basis, it would allow the most reuse of existing campusinfrastructure, it is the most energy efficient and would result in the largestdecrease of carbon emissions, it would require the least amount of ongoingmaintenance, and it would provide the most opportunity to incorporate intoacademic programs (Mechanical

Description

Engineering, Electrical Engineering, Sustainability,etc.) to leverage student learning opportunities and increase public awarenessand acceptance of sustainability.

Which clientele would be impacted by the budget request?Where and how many units would be added, people or communities served, etc.
The largest impact would be on the University maintenancestaff. Replacing aging equipment wouldlessen initial maintenance costs at each of the individual buildings, howeverthese savings would be traded for related effort to operate the GeothermalPlant – Node 1. Overall, there would bea need to add some maintenance and operation staff for the new central plant.
Students and faculty would be served by this project throughthe incorporation of the facility and technology into academic programs.
The community would be served on an individual level by theawareness raised from the project and on a larger scale by the reduction inenergy use and climate related impacts.

Does this project or program leverage non-state funding?If yes, how much by source? If the other funding source requires cost share,also include the minimum state (or other) share of project cost allowable andthe supporting citation or documentation.
There may be opportunities to apply available federal energyincentives to this project, however that will not be fully known until thesystem has been designed and communicated to those potential sources offunding.

Describe how this project supports the agency's strategicmaster plan or would improve agency performance. Reference feasibility studies,master plans, space programming and other analyses as appropriate.
This project will support the University's strategic plan,comprehensive campus master plan (in progress), climate action plan, decarbonizationplan (in progress), and the various studies, reports, and predesigns that havebeen mentioned above or are attached for reference. Ultimately, this will reduce the University'senergy use, carbon emissions, and operating costs, while supporting themission, values, and long-term plans for EWU.

Does this project include IT related costs, includinghardware, software, cloud based services, contracts or staff? If yes,attach IT Addendum.
IT related cost development will be detailed and quantifiedin the design phase. Final, updated costs will be refined further in design.

If the project is linked to the Puget Sound ActionAgenda, describe the impacts on the Action Agenda, including expenditure andFTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 OperatingBudget Instructions.
NA

How does this project contribute to meeting thegreenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildingsperformance standards in RCW 19.27A.210, or other statewide goals to reducecarbon pollution and/or improve efficiency?
As mentioned, this project is a result of and directlycontributes to the statewide goals mentioned above with the sole purpose ofreducing greenhouse gas emissions, energy use, and to improve building energyperformance. See attached studies andreports for specific details and anticipated results. Final results will be determined when theproject is fully designed and incrementally introduced to the campus system.

How does this project impact equity in the state? Whichcommunities are impacted by this proposal? Include both demographic andgeographic communities. How are disparities in communities impacted?
Being a state-owned facility, this project would help by reducingcosts related to energy use, building operation, and maintenance. It would also help the state meet mandatedenergy goals and serve as an example of responsible use of state

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Project Number: 40000158
Project Title: Geothermal Plant - Node 1

Description

funds. Positive impacts and savings will becompounded as the cost of energy and more importantly the impacts of climatechange continue to escalate locally, regionally, and globally.
The project directly serves the EWU campus and students andwill be leveraged to support current academic programs and learningopportunities.
Local and state economic impacts will be realized by theengineering and construction industries that will be positively impactedthrough the creation of jobs and the growth of technologies related tosustainability and energy efficiency.

Is there additional information you would like decisionmakers to know when evaluating this request?
This project is the result and one component of acomprehensive effort to research, plan, and implement options for the mosteffective, economically viable, and technologically feasible way to achieve theenergy performance goals of the state while meeting the mission and values of EasternWashington University. It is directlylinked to the other project requests and would need to be constructed prior to someof the other projects seeking funding.

Is this project eligible for Direct Pay? If yes, includethis project in the Direct Pay Form for inclusion to capitalbudget request submittal (see Chapter 1.7 of the capital budget instructionsfor additional instructions).
This project may be eligible for Direct Pay and has been included on the attached Direct Pay Form

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.
NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Infrastructure (Major Projects)

Growth Management impacts
None - Work done on existing EWU campus

New Facility: Yes
How does this fit in master plan
It is a key component of reducing energy use, carbon emissions, and energy costs for the campus. It also directly relates to various sustainability initiatives that have been completed or are underway.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
26C-1	Climate Commit Accou-State	164,008,000				64,008,000
	Total	**164,008,000**	**0**	**0**	**0**	**64,008,000**

		Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
26C-1	Climate Commit Accou-State	50,000,000	50,000,000		

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:39PM

Project Number: **40000158**
Project Title: **Geothermal Plant - Node 1**

Funding

Total	**50,000,000**	**50,000,000**	**0**	**0**

Operating Impacts

Total one time start up and ongoing operating costs

Acct Code	Account Title	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
FTE	Full Time Employee	1.0	3.0	3.0	3.0	3.0
001-1	General Fund-State	100,000	300,000	300,000	300,000	300,000
	Total	**100,000**	**300,000**	**300,000**	**300,000**	**300,000**

Narrative

It is anticipated that a new Geothermal Plant will require full time staff to maintain, operate, and to coordinate with other campus systems that will remain in place for the foreseeable future.

Capital Project Request

2025-27 Biennium

*

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000158	40000158
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washingtonn University
Project Name	Geothermal Plant - Node 1
OFM Project Number	40000158

Contact Information	
Name	Kris Jeske - EWU Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	5,500	MACC per Gross Square Foot	$7,143
Usable Square Feet	0	Escalated MACC per Gross Square Foot	$7,652
Alt Gross Unit of Measure			
Space Efficiency	0.0%	A/E Fee Class	A
Construction Type	Heating and power plant	A/E Fee Percentage	8.02%
Remodel	No	Projected Life of Asset (Years)	50
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney
Contingency Rate	5%		
Base Month (Estimate Date)	September-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	August-24	Predesign End	September-24
Design Start	August-25	Design End	July-26
Construction Start	August-26	Construction End	December-27
Construction Duration	16 Months		

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Project Cost Summary

Total Project	$59,650,495	Total Project Escalated	$64,007,668
		Rounded Escalated Total	$64,008,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$64,008,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$2,379,167		
Extra Services	$1,065,000		
Other Services	$1,598,901		
Design Services Contingency	$4,794,675		
Consultant Services Subtotal	**$9,837,743**	**Consultant Services Subtotal Escalated**	**$10,556,055**

Construction			
Maximum Allowable Construction Cost (MACC)	$39,287,676	Maximum Allowable Construction Cost (MACC) Escalated	$42,086,930
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$3,705,684		$4,031,784
Non-Taxable Items	$0		$0
Sales Tax	$3,827,045	Sales Tax Escalated	$4,105,247
Construction Subtotal	**$46,820,405**	**Construction Subtotal Escalated**	**$50,223,961**

Equipment			
Equipment	$20,000		
Sales Tax	$1,780		
Non-Taxable Items	$0		
Equipment Subtotal	**$21,780**	**Equipment Subtotal Escalated**	**$23,697**

Artwork			
Artwork Subtotal	**$318,446**	**Artwork Subtotal Escalated**	**$318,446**

Agency Project Administration			
Agency Project Administration Subtotal	$2,652,121		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$2,652,121**	**Project Administration Subtotal Escalated**	**$2,885,509**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$59,650,495**	Total Project Escalated	**$64,007,668**
		Rounded Escalated Total	**$64,008,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0		$0		**$0**
Consultant Services					
Consultant Services Subtotal	$10,556,055		$10,556,055		**$0**
Construction					
Construction Subtotal	$50,223,961		$50,223,961		**$0**
Equipment					
Equipment Subtotal	$23,697		$23,697		**$0**
Artwork					
Artwork Subtotal	$318,446		$318,446		**$0**
Agency Project Administration					
Project Administration Subtotal	$2,885,509		$2,885,509		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$64,007,668**	**$0**	**$64,007,668**	**$0**	**$0**
	$64,008,000	**$0**	**$64,008,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Design and construction
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis	$0			
Environmental Analysis	$0			
Predesign Study	$0			
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0297**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$2,379,167			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$2,379,167**	**1.0452**	**$2,486,705**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$150,000			
Geotechnical Investigation	$25,000			
Commissioning	$250,000			
Site Survey	$25,000			
Testing	$98,000			
LEED Services	$85,000			
Voice/Data Consultant	$60,000			
Value Engineering	$70,000			
Constructability Review	$82,000			
Environmental Mitigation (EIS)				
Landscape Consultant	$50,000			
Cost Estimation	$65,000			
SEPA	$10,000			
ELCCA	$35,000			
LCCA	$40,000			
Renderings	$20,000			
Sub TOTAL	**$1,065,000**	**1.0452**	**$1,113,138**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,068,901			31% of A/E Basic Services
HVAC Balancing	$350,000			
Staffing				
Hydrogeologist	$145,000			
Conformed and Record Drawings	$35,000			
Sub TOTAL	**$1,598,901**	**1.0880**	**$1,739,605**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$252,153			

Risk Contigency	$4,542,522			
Sub TOTAL	**$4,794,675**	**1.0880**	**$5,216,607**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$9,837,743**		**$10,556,055**	

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Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$0				
Appraisal and Closing	$0				
Right of Way	$0				
Demolition	$0				
Pre-Site Development	$0				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$588,165			
G20 - Site Improvements	$0			
G30 - Site Mechanical Utilities	$26,152,397			
G40 - Site Electrical Utilities	$1,747,020			
G60 - Other Site Construction	$0			
Other				
Insert Row Here				
Sub TOTAL	**$28,487,582**	**1.0649**	**$30,336,427**	
2) Related Project Costs				
Offsite Improvements	$0			
City Utilities Relocation	$0			
Parking Mitigation	$0			
Stormwater Retention/Detention	$0			
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0649**	**$0**	
3) Facility Construction				
A10 - Foundations	$281,139			
A20 - Basement Construction	$0			
B10 - Superstructure	$670,110			
B20 - Exterior Closure	$494,101			
B30 - Roofing	$303,798			
C10 - Interior Construction				
C20 - Stairs	$0			
C30 - Interior Finishes	$0			
D10 - Conveying	$0			
D20 - Plumbing Systems	w/ site mechanical			
D30 - HVAC Systems	w/ site mechancial			
D40 - Fire Protection Systems	$46,750			
D50 - Electrical Systems	w/ site electrical			
F10 - Special Construction	$0			
F20 - Selective Demolition	$0			
General Conditions	$3,325,796			
General Requirements	$2,559,711			
OH&P + Insurance	$3,118,689			
Sub TOTAL	**$10,800,094**	**1.0880**	**$11,750,503**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$39,287,676**		**$42,086,930**	
	$7,143		*$7,652 per GSF*	

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7) Owner Construction Contingency				
Allowance for Change Orders	$1,964,384			
Market Volatility	$1,741,300			
Insert Row Here				
Sub TOTAL	**$3,705,684**	**1.0880**	**$4,031,784**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0880**	**$0**	
9) Sales Tax				
Sub TOTAL	**$3,827,045**		**$4,105,247**	
CONSTRUCTION CONTRACTS TOTAL	**$46,820,405**		**$50,223,961**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings	$20,000				
F10 - Special Construction	$0				
Other					
Insert Row Here					
Sub TOTAL	**$20,000**		**1.0880**	**$21,760**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0880**	**$0**	
3) Sales Tax					
Sub TOTAL	**$1,780**			**$1,937**	
EQUIPMENT TOTAL	**$21,780**			**$23,697**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$318,446				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$318,446**		**NA**	**$318,446**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$2,652,121				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$2,652,121**		**1.0880**	**$2,885,509**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs	$0				
Hazardous Material Remediation/Removal	$0				
Historic and Archeological Mitigation	$0				
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0649**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

Availability of Space/Campus Utilization Template

Project name:	Geothermal Plant - Node 1	CBS/OFM Project #:	40000158
Institution:	Eastern Washington University	Category:	Infrastructure
Campus/Location:	Cheney, WA		

Enrollment

2023 fall on-campus student FTE:	8,680	Expected 2024 fall on-campus student FTE:	8,246
		% increase budgeted:	-5.00%

Enter the average number of hours per week each for (a) classroom seat and (b) classroom lab is expected to be utilized in Fall 2024 for the campus where the project is located.

(a) General University Classroom Utilization		(b) General University Lab Utilization	
Fall 2023 Weekly Contact Hours	60,425	Fall 2023 Weekly Contact Hours	11,565
Multiply by % FTE Increase Budgeted	-5.00%	Multiply by % FTE Increase Budgeted	-5.00%
Expected Fall 2024 Contact Hours	57,404	Expected Fall 2024 Contact Hours	10,987
Expected Fall 2024 Classroom Seats	6,415	Expected Fall 2024 Class Lab Seats	996
Expected Hours per Week Utilization	**8.9**	**Expected Hours per Week Utilization**	**11.0**
HECB utilization standard (hours/GUC seat)	22.0	HECB utilization standard (hour/GUL seat)	16.0
Difference in utilization standard	-59.3%	Difference in utilization standard	-31.1%

If the campus does not meet the 22 hours per classroom seat and/or the 16 hours per class lab HECB utilization standards, describe any institutional plans for achieving the utilization standard.

Eastern Washinton University finds itself in a similar situation as so many other Universities around the nation in a post-pandemic environment. During this time while the focus needs to remain on increasing enrollment, it is vitally important to invest in current facilities so that they continue to serve students, do not fall into disrepair, and are designed to meet future demands, technologies, and teaching pedagogies. In order to achieve this, EWU has embarked on a number of studies to best determine future actions which may range from strategic investment in facilities and/or contracting in others. Some of that work is summarized below.

SRA - In 2022, the University began a Strategic Resource Allocation (SRA) process which entailed a systematic, collaborative, and transparent process to examine the ways resources are being invested. As a regional comprehensive university, it is EWU's goal to ensure that academic programs are best aligned to meet regional workforce needs, and university services aligned in such a manner as to ensure the student experience is meaningful and campus resources are efficient, effective, and sustainable. The process culminated in 2024 and measures are being put into place to make the University as efficient as possible, including physical improvements, consolidation, and/or reductions where facilities are no longer effectively serving the University.

Strategic Planning – Eastern Washington University is in the process of a Strategic Planning effort to guide the direction and growth of Eastern Washington University. By systematically assessing strengths, weaknesses, opportunities, and threats, EWU will articulate a clear vision for the future and establish well-defined goals. This process enables the University to align its resources, expertise, research endeavors, and educational programs effectively.

CCMP – EWU has just started the process to develop a Comprehensive Campus Master Plan (CCMP) to replace the previous plan that was completed in 2014. Recognizing the unique character, current physical and financial conditions, program and space needs, and growth during the past 10 years and projected into the future, the CCMP will be a guiding document to inform decisions for the next 10 years regarding development, growth, consolidation, etc. This document will include and be informed by numerous other studies that are recently completed or underway: SRA, Strategic Plan, Decarbonization Plan, Climate Resiliency and Sustainability, CCMP, Geothermal Studies, Housing Plan, Currently Planned Construction and Renovation Projects, and Predesign Studies.

Reasonableness of Cost Template

Project name:	EWU GeoEco Plant Infrastructure Request	CBS/OFM Project #:	40000158
Institution:	Eastern WA University	Category:	Infrastructure
Campus/Location:	Cheney, Washington		

	Construction Begin	Construction End	Construction mid-point	Escalation Multiplier
Construction mid-point:	August-26	December-27	April-27	1.5014

MACC from C-100: $39,287,676 unescalated

	Expected MACC/GSF in 2019	Expected MACC/GSF	GSF by type	Expected MACC
Classrooms	$405	$608	-	$0
Instructional labs	$397	$596	-	$0
Research labs	$545	$818	-	$0
Administration	$406	$610	-	$0
Libraries	$340	$510	-	$0
Athletic	$385	$578	-	$0
Assembly, exhibit and meeting rooms	$428	$643	-	$0
			5,500	$0

C-100 to expected MACC variance:

NOTE: The above categories are not applicable to this project since it is infrastructure space that is not regularily occupied. The building is expected to be 5,500 GSF.

Efficiency of space allocation. For each major function in the proposed facility (classroom, instructional labs, offices), identify whether space allocations will be consistent with the Facility Evaluation and Planning Guide (FEPG) assignable square feet standards. If any proposed allocations exceed FEPG standards, explain the alternative standard that has been used and why.

Example: efficiency of space allocation – FEPG standard

FEPG room classification number	FEPG room classification type	Project ASF per station	FEPG standard	Meets standard (Y/N)	Comments
n/a	n/a	n/a	n/a	n/a	

Identify the (a) assignable square feet in the proposed facility; (b) the gross square feet; and (c) the net building efficiency ("a" divided by "b").

0 ASF / 5,500 GSF = 0% Net Efficiency

NOTE: This chart is not applicable to this project. This facility has no assignable square footage as it is a building designed strictly for equipment with no regularly occupiable interior space for students, faculty, or administration and as such does not match any of the classifications in the Facility Evaluation Planning Guide (FEPG) for assignable square feet. It will occassionally be occupied by facilities personel who will be servicing the equipment and intermittently for educational tours.

Instructions:
Provide the facility's condition score (1 superior – 5 marginal functionality) from the 2016 Comparable Framework study, and summarize the major structural and systems conditions that resulted in that score. Provide selected supporting documentation in appendix, and reference them in the body of the proposal.

Narrative Response:
NA

Instructions:
Identify the estimated number of additional FTE students the project is expected to enable the institution to serve when the space is fully occupied. Describe the method by which additional FTEs are calculated, including an analysis of probable student enrollment demand from project completion to full occupancy. Also provide an estimate of the number of additional FTE enrollments in high-demand fields and the fields in which such growth is expected to occur.

Per RCW 43.88D.010(1)(a), growth projects must also demonstrate that they can more cost- effectively provide enrollment access than alternatives such as university centers and distance learning.

Narrative Response:
NA

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:40PM

Project Number: **40000157**
Project Title: **Dental Therapy Lab and Clinic**

Description

Project Phase Title: Design & Construction
Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 3

Project Summary

Eastern Washington University requests funding to relocate the EWU Dental Hygiene Clinic to a new facility adjacent to the University of Washington/EWU Regional Initiatives in Dental Education (RIDE) program. EWU is planning to launch a new graduate-level Dental Therapy program which will require expanded use of the existing Dental Hygiene Clinic. Relocating EWU's Dental Hygiene Clinic to available space in a building adjacent to the UW/EWU RIDE program will strengthen natural programmatic and collaborative opportunities and result in shared infrastructure and operational support. With the planned addition of Dental Therapy, this proposal presents a unique opportunity to create the only dental education cluster in the state that brings together baccalaureate, masters, and doctoral-level dental training in shared facilities.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements &clarifying details. Preservation projects: include information about the current condition of the facility/system.

Eastern Washington University (EWU) is requesting budget authority to enhance the interprofessional training between the University of Washington's School of Dentistry Regional Initiatives in Dental Education (RIDE) program, the EWU Dental Hygiene program, and an EWU Dental Therapy program proposed in the current state biennium budget. This proposal would create a unique opportunity to create the only Dental education cluster in the state that brings together Baccalaureate, Masters, and Doctorate level dental training.

To support this initiative, we are requesting budget authority to relocate the EWU Dental Hygiene clinic to be next to the UW RIDE program. Relocating EWU's Dental Hygiene program to available space in a building adjacent to the UW RIDE program will strengthen natural programmatic and collaborative opportunities and result in shared infrastructure support. The partnership between the UWRIDE and EWU provides a unique integrated resource to strengthen high quality dental care in an interprofessional clinic on the east side of the State. Our proposal will bring further unique training opportunities by locating the dental hygiene clinic in the same building as EWU's School of Nursing and adjacent to the UW/Gonzaga School of Medicine, creating a single, comprehensive intercollegiate and interprofessional health education cluster. With this package, we can make a profound impact on the education of dental and medical professionals.

What will the request produce or construct (predesign/design of abuilding, additional space, etc.)? When will the project start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.

This project will result in the relocation of dental students to a new facility adjacent to the (RIDE) program. It would include new teaching stations, dental equipment, and the necessary infrastructure and tenant improvements to create teaching space that would be leased from the existing building owner.

Design work would anticipate beginning in August of 2025 through February of 2026. Construction would then start in March of 2026 and finish in December of 2026.

It would not be feasible to phase this project due to the nature of the sensitive equipment, the scale and scope of the work, and the desire for all of the students to begin at one time.

See attached C-100 cost information.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?

The current EWU Dental Hygiene clinic is approximately one mile from the UW Dental School and the RIDE Simulation lab. The physical separation of the UW Dental Hygiene clinic and the RIDE Dental Simulation lab is a barrier for RIDE students, Dental Hygiene students, and Dental Therapy students and faculty. Moving the EWU Dental Hygiene clinic to be

Project Number: **40000157**
Project Title: **Dental Therapy Lab and Clinic**

Description

adjacent to the RIDE facilities will allow Dental Hygiene and Dental Therapy to collaborate with RIDE for content experts. The Dental Hygiene and Dental Therapy programs will share the new clinical space and simulation classroom spaces with the RIDE program. Finally, the relocation of the Dental Hygiene clinic to be adjacent to the EWU School of Nursing will allow interprofessional education with Nursing students, including training in the School of Nursing's new state-of-the-art simulation labs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.

The recent expansion and relocation of the RIDE program and the proposed expansion of EWU's programs to include Dental Therapy are driving the need to relocate EWU's Dental Hygiene clinic. The current Dental Hygiene clinic is located in a space leased from Washington State University (WSU). With further expansion of WSU's Ellison S. Floyd School of Medicine and associated programs, further expansion of EWU's Dental programs are not possible in the WSU buildings.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

21.8% of Spokane County residents in 2023 received Medicaid and is recognized as a Dental Health Professional Shortage Area for low income homeless populations. The Greater Spokane region has Federally Qualified Health Centers that serve community oral health needs, however there is still an unfulfilled need for oral care among the indigent and underinsured population. EWU's Dental Hygiene clinic already serves the region, with the vast majority of their patients receiving dental benefits through Medicaid. EWU's proposed Dental Therapy program will expand the level of care available to these patients. Additionally, these students will be placed in practicum experiences within qualified community health care centers, resulting in more slots for patient care.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state (or other) share of project cost allowable and the supporting citation or documentation.

The project is not planned to use funds other than those allocated by the state.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

EWU currently has a presence in Spokane for select degrees that necessitate close proximity to industry partners, accessibility for patrons who will be using the services, and to accommodate students who may be working part-time in or near Spokane. This is consistent with the current Master Plan, which addresses the larger community and how EWU students are able to serve and be served by the region. In addition the University will be embarking on a new Comprehensive Campus Master Plan which will specifically address the larger region of the Inland Northwest as well as Cheney proper. This exercise will complete very near to when the Dental Therapy Lab and Clinic will begin design.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.

This project does not fund the development or acquisition of new or enhanced software or hardware systems or services. The facility will use already established software and hardware platforms that are currently in place.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.

NA

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, or other statewide goals to reduce carbon pollution and/or improve efficiency?

This project is a tenant improvement and as such will not have a significant impact on the envelope or energy performance of the building. It will however utilize the most current lighting technology and equipment to lessen the energy consumption. The project will meet all regulatory requirements for energy use, greenhouse gas emissions, and occupant comfort and safety. EWU is committed to decreasing it's carbon footprint in all aspects of operation.

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:40PM

Project Number: 40000157
Project Title: Dental Therapy Lab and Clinic

Description

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?
Relocating the EWU's Dental Clinic will directly support the creation of the Dental Therapy degree. The demand for Dental Therapists is particularly strong in rural settings. Federally Qualified Healthcare Centers (FQHC), tribal clinics, and similar types of clinics will benefit from dental therapists who will be able to take the burden of routine procedures off dentists and increase their ability to see patients in a timely manner. The dental therapist's supervisory capability provides opportunities for satellite settings as well as in-home visits in rural settings.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).
It is not anticipated that the project is eligible for Direct Pay.

Is there additional information you would like decision makers to know when evaluating this request?
This project will allow the continued and sustainable growth of the program to flourish and take advantage of other strategic relationships that would not otherwise be possible. While supporting and nurturing students, the facility also serves a vital role in the community by providing care that would not likely happen without the program. Funding this project will create compounding ripples of success throughout the region.

REAPPROPRIATION: If the project was originally funded prior to the2021-23 biennium, describe the project and each subproject, including theoriginal appropriation year, status of the project and an explanation why are appropriation is needed.
NA

Location
City: Spokane **County:** Spokane **Legislative District:** 003

Project Type
Lease

Growth Management impacts
None - Located in an existing facility

New Facility: No

How does this fit in master plan
See description narrative

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
057-1	State Bldg Constr-State	10,498,000				10,498,000
	Total	**10,498,000**	**0**	**0**	**0**	**10,498,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:40PM

Project Number: **40000157**
Project Title: **Dental Therapy Lab and Clinic**

Operating Impacts

No Operating Impact

Narrative

Existing program that is moving.

Capital Project Request

2025-27 Biennium

*

Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000157	40000157
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Dental Therapy Lab and Clinic
OFM Project Number	40000157

Contact Information	
Name	Kris Jeske
Phone Number	(509) 359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	25,076	MACC per Gross Square Foot	$139
Usable Square Feet	25,076	Escalated MACC per Gross Square Foot	$139
Alt Gross Unit of Measure			
Space Efficiency	100.0%	A/E Fee Class	A
Construction Type	Medical office and clinics	A/E Fee Percentage	13.84%
Remodel	Yes	Projected Life of Asset (Years)	20
Additional Project Details			
Procurement Approach	DB-Criteria	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	9.10%	Location Used for Tax Rate	Spokane, WA
Contingency Rate	10%		
Base Month (Estimate Date)	August-26	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start		Predesign End	
Design Start	August-25	Design End	February-26
Construction Start	March-26	Construction End	December-26
Construction Duration	9 Months		

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Project Cost Summary

Total Project	$10,489,423	Total Project Escalated	$10,497,710
		Rounded Escalated Total	$10,498,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$10,498,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$557,932		
Extra Services	$53,000		
Other Services	$250,781		
Design Services Contingency	$86,171		
Consultant Services Subtotal	**$947,884**	**Consultant Services Subtotal Escalated**	**$947,885**

Construction			
Maximum Allowable Construction Cost (MACC)	$3,492,139	Maximum Allowable Construction Cost (MACC) Escalated	$3,492,139
DB-Criteria Risk Contingencies	$0		
DB-Criteria Management	$0		
Owner Construction Contingency	$674,860		$674,860
Non-Taxable Items	$90,916		$90,916
Sales Tax	$379,197	Sales Tax Escalated	$387,483
Construction Subtotal	**$4,637,112**	**Construction Subtotal Escalated**	**$4,645,398**

Equipment			
Equipment	$4,200,000		
Sales Tax	$382,200		
Non-Taxable Items	$0		
Equipment Subtotal	**$4,582,200**	**Equipment Subtotal Escalated**	**$4,582,200**

Artwork			
Artwork Subtotal	**$52,227**	**Artwork Subtotal Escalated**	**$52,227**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$270,000		
Project Administration Subtotal	**$270,000**	**Project Administration Subtotal Escalated**	**$270,000**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$10,489,423**	Total Project Escalated	**$10,497,710**
		Rounded Escalated Total	**$10,498,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$947,885		$947,885		**$0**
Construction					
Construction Subtotal	$4,645,398		$4,645,398		**$0**
Equipment					
Equipment Subtotal	$4,582,200		$4,582,200		**$0**
Artwork					
Artwork Subtotal	$52,227		$52,227		**$0**
Agency Project Administration					
Project Administration Subtotal	$270,000		$270,000		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$10,497,710**	**$0**	**$10,497,710**	**$0**	**$0**
	$10,498,000	**$0**	**$10,498,000**	**$0**	**$0**
		Percentage requested as a new appropriation	**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Design and construction of tenant improvement space
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
NA
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$397,932			69% of A/E Basic Services
Other - DB Design Fee	$160,000			
Sub TOTAL	**$557,932**	**1.0000**	**$557,932**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$45,000			
Site Survey				
Testing	$8,000			
LEED Services				
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)				
Landscape Consultant				
Other				
Insert Row Here				
Sub TOTAL	**$53,000**	**1.0000**	**$53,000**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$178,781			31% of A/E Basic Services
HVAC Balancing	$8,000			
Staffing				
Other - Site Supervision	$64,000			
Bid/Construction/Closeout Auto-Populate Correction				
Sub TOTAL	**$250,781**	**1.0000**	**$250,781**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$86,171			
Other				
Insert Row Here				

Sub TOTAL	**$86,171**	**1.0000**	**$86,172**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$947,884**		**$947,885**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0000**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction	$550,000			
C20 - Stairs				
C30 - Interior Finishes	$800,000			
D10 - Conveying				
D20 - Plumbing Systems	$120,000			
D30 - HVAC Systems	$450,000			
D40 - Fire Protection Systems	$55,000			
D50 - Electrical Systems	$325,000			
F10 - Special Construction	$250,000			
F20 - Selective Demolition	$95,000			
General Conditions				
Other Direct Cost - Controls	$140,800			
Other Direct Cost - Lighting & Lighting Controls	$655,970			
ODCs & Bond	$50,369			
Insert Row Here				
Sub TOTAL	**$3,492,139**	**1.0000**	**$3,492,139**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$3,492,139**		**$3,492,139**	
	$139		*$139 per GSF*	
	This Section is Intentionally Left Blank			
7) Owner Construction Contingency				
Allowance for Change Orders	$349,214			
OH&P	$325,646			
Insert Row Here				
Sub TOTAL	**$674,860**	**1.0000**	**$674,860**	
8) Non-Taxable Items				
Other - WSST on Professional Services	$28,416			
DES Fee	$62,500			
Insert Row Here				
Sub TOTAL	**$90,916**	**1.0000**	**$90,916**	
9) Sales Tax				
Sub TOTAL	**$379,197**		**$387,483**	
CONSTRUCTION CONTRACTS TOTAL	**$4,637,112**		**$4,645,398**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings					
F10 - Special Construction	$4,200,000				
Other					
Insert Row Here					
Sub TOTAL	**$4,200,000**		**1.0000**	**$4,200,000**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0000**	**$0**	
3) Sales Tax					
Sub TOTAL	**$382,200**			**$382,200**	
EQUIPMENT TOTAL	**$4,582,200**			**$4,582,200**	

Green cells must be filled in by user

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$52,227				0.5% of total project cost for new and renewal construction
Other					
	$0				
ARTWORK TOTAL	**$52,227**		**NA**	**$52,227**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$0				
Additional Services					
Other - DB Construction Mgmt	$145,000				
Agency Project Management (2.5%)	$125,000				EWU Project Management
Subtotal of Other	*$270,000*				
PROJECT MANAGEMENT TOTAL	**$270,000**		**1.0000**	**$270,000**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0000**	**$0**	

Green cells must be filled in by user

C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

Availability of Space/Campus Utilization Template

Project name:	Dental Therapy Lab and Clinic	CBS/OFM Project #:	40000157
Institution:	Eastern Washington University	Category:	Renovation - Major
Campus/Location:	Spokane, WA		

Enrollment

2023 fall on-campus student FTE:	8,680	Expected 2024 fall on-campus student FTE:	8,246
		% increase budgeted:	-5.00%

Enter the average number of hours per week each for (a) classroom seat and (b) classroom lab is expected to be utilized in Fall 2024 for the campus where the project is located.

(a) General University Classroom Utilization	
Fall 2023 Weekly Contact Hours	60,425
Multiply by % FTE Increase Budgeted	-5.00%
Expected Fall 2024 Contact Hours	57,404
Expected Fall 2024 Classroom Seats	6,415
Expected Hours per Week Utilization	**8.9**
HECB utilization standard (hours/GUC seat)	22.0
Difference in utilization standard	-59.3%

(b) General University Lab Utilization	
Fall 2023 Weekly Contact Hours	11,565
Multiply by % FTE Increase Budgeted	-5.00%
Expected Fall 2024 Contact Hours	10,987
Expected Fall 2024 Class Lab Seats	996
Expected Hours per Week Utilization	**11.0**
HECB utilization standard (hour/GUL seat)	16.0
Difference in utilization standard	-31.1%

If the campus does not meet the 22 hours per classroom seat and/or the 16 hours per class lab HECB utilization standards, describe any institutional plans for achieving the utilization standard.

Eastern Washinton University finds itself in a similar situation as so many other Universities around the nation in a post-pandemic environment. During this time while the focus needs to remain on increasing enrollment, it is vitally important to invest in current facilities so that they continue to serve students, do not fall into disrepair, and are designed to meet future demands, technologies, and teaching pedagogies. In order to achieve this, EWU has embarked on a number of studies to best determine future actions which may range from strategic investment in facilities and/or contracting in others. Some of that work is summarized below.

SRA - In 2022, the University began a Strategic Resource Allocation (SRA) process which entailed a systematic, collaborative, and transparent process to examine the ways resources are being invested. As a regional comprehensive university, it is EWU's goal to ensure that academic programs are best aligned to meet regional workforce needs, and university services aligned in such a manner as to ensure the student experience is meaningful and campus resources are efficient, effective, and sustainable. The process culminated in 2024 and measures are being put into place to make the University as efficient as possible, including physical improvements, consolidation, and/or reductions where facilities are no longer effectively serving the University.

Strategic Planning – Eastern Washington University is in the process of a Strategic Planning effort to guide the direction and growth of Eastern Washington University. By systematically assessing strengths, weaknesses, opportunities, and threats, EWU will articulate a clear vision for the future and establish well-defined goals. This process enables the University to align its resources, expertise, research endeavors, and educational programs effectively.

CCMP – EWU has just started the process to develop a Comprehensive Campus Master Plan (CCMP) to replace the previous plan that was completed in 2014. Recognizing the unique character, current physical and financial conditions, program and space needs, and growth during the past 10 years and projected into the future, the CCMP will be a guiding document to inform decisions for the next 10 years regarding development, growth, consolidation, etc. This document will include and be informed by numerous other studies that are recently completed or underway: SRA, Strategic Plan, Decarbonization Plan, Climate Resiliency and Sustainability, CCMP, Geothermal Studies, Housing Plan, Currently Planned Construction and Renovation Projects, and Predesign Studies.

Reasonableness of Cost Template

Project name:	Dental Therapy Lab and Clinic	CBS/OFM Project #:	40000157
Institution:	Eastern WA University	Category:	Renovation - Major
Campus/Location:	Spokane, WA		

	Construction Begin	Construction End	Construction mid-point	Escalation Multiplier
Construction mid-point:	March-26	December-26	July-26	1.4390

MACC from C-100: $10,489,000

	Expected MACC/GSF in 2019	Expected MACC/GSF	GSF by type	Expected MACC
Classrooms	$405	$689	4,500	$3,098,250
Instructional labs	$397	$675	17,000	$11,473,300
Research labs	$545	NA		
Administration	$406	NA		
Libraries	$340	NA		
Athletic	$385	NA		
Assembly, exhibit and meeting rooms	$428	$616	3,500	$2,155,622
				$16,727,172

C-100 to expected MACC variance: 63%

Efficiency of space allocation. For each major function in the proposed facility (classroom, instructional labs, offices), identify whether space allocations will be consistent with the Facility Evaluation and Planning Guide (FEPG) assignable square feet standards. If any proposed allocations exceed FEPG standards, explain the alternative standard that has been used and why.

Response: The facility is being planned based on FEPG and other industry standards. Below is a possible scenario for reference:

EWU Dental Hygiene Space Requirements

Use	# of Rooms	Area per Room	SF	Comments
Reception	1	350	350	~20-25 chairs for ~40 patients arriving simultaneously that are quickly moved to the dental clinic
Front Office / Billing / Student Call	1	200	200	2 Staff + 4 Student Call Stations
Private Front Office	1	100	100	Directly connected to Front Office
Dental Operatories	1	8,550	8,550	42 Dental Operatories - provide podium
X-ray Rooms	7	100	700	Adjacent to operatories
Sterilization	1	200	200	one way processing layout
Student Changing Rooms	0	0	0	If on Health Peninsula, may be shared with Nursing's locker rooms
Mother's Room	0	0	0	If on Health Peninsula, may be shared with Nursing
80 Student Lockers	*			Need to review location for student lockers - assume lockers are integrated into common hallways
12 Person Conference Room	1	200	200	
Faculty Break Room / Grading Room	1	200	200	
Closet off Break Room	1	100	100	
Equipment / Storage Rooms	2	150	300	
Lab / Modeling Room	1	150	150	
Faculty Private Offices	11	100	1,100	
40 Person Classroom	1	980	980	operable wall between classrooms with white board -
40 Person Classroom	1	980	980	provide eye wash @ sinks - provide lockable casework for manikins & other items
Student Lounge	1	500	500	
Mechanical Room	1	150	150	
Bio Hazard Storage Room	1	100	100	
Subtotal			**14,860**	
Interior Circulation Factor	0.25		3,715	
Tenant Dedicated			**18,575**	
Building Load Factor	0.35		6,501	
RSF			**25,076**	

Instructions:
Provide the facility's condition score (1 superior – 5 marginal functionality) from the 2016 Comparable Framework study, and summarize the major structural and systems conditions that resulted in that score. Provide selected supporting documentation in appendix, and reference them in the body of the proposal.

Narrative Response:
NA

Instructions:
Identify the estimated number of additional FTE students the project is expected to enable the institution to serve when the space is fully occupied. Describe the method by which additional FTEs are calculated, including an analysis of probable student enrollment demand from project completion to full occupancy. Also provide an estimate of the number of additional FTE enrollments in high-demand fields and the fields in which such growth is expected to occur.

Per RCW 43.88D.010(1)(a), growth projects must also demonstrate that they can more cost- effectively provide enrollment access than alternatives such as university centers and distance learning.

Narrative Response:

The undergraduate Dental Hygiene program currently enrolls 130 annualized FTES (see definitions below) on average. This is a cohort-based program that runs at full capacity, so we anticipate no enrollment changes in the undergraduate degree with the new facility.

The new MS in Dental Therapy will enroll an additional 36 graduate students per year at full capacity. Assuming that these will be full-time graduate students taking 10 credits per semester (full-time by EWU's definition), this will add another 36 FTES, bringing the total enrollment in the Department of Dental Hygiene to 166 FTES (annualized). We anticipate that the FTES will grow as follows:

Expected Students	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
BS Dental Hygiene FTES	130	130	130	130	130	130
MS Dental Therapy Headcount	0	12	24	36	36	36
MS Dental Therapy FTES	0	12	24	36	36	36
Total FTES	0130	142	154	166	166	166

These FTES are all in high-demand health fields.

Definitions:
for undergraduate students, Student Semester Credit Hours/12 = FTES
for graduate students, Student Semester Credit Hours/10 = FTES

OFM

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Capital Project Request

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/9/2024 3:00AM

Project Number: **40000156**
Project Title: **Civil Engineering Building - Applied Engineering**

Description

Project Phase Title: Design
Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 4

Project Summary

Eastern Washington University requests funding to create a state-of-the-art facility that will significantly expand and enhance the university's engineering education capabilities. The project involves constructing an 82,522 gross square feet (GSF) building connected to the existing Computing and Engineering Building (CEB). The project will also modify 42,411 GSF of existing space in CEB to integrate with the new structure, optimizing existing facilities for non-laboratory courses and operational efficiencies. Designed to address the growing demand for engineers in Washington State, the new facility will provide modern, flexible, and pedagogically appropriate spaces to support enrollment growth, including a new Civil Engineering program.

Project Description

What is theproblem/opportunity? Identify: priority, underserved people/communities,operating budget savings, public safety improvements & clarifying details.Preservation projects: include information about the current condition of thefacility/system.

Problem/OpportunityIdentification:
EasternWashington University (EWU) faces a critical opportunity to enhance itsengineering programs, which are currently hindered by outdated and inadequatefacilities. The university's high-tech, hands-on engineering pedagogy hasoutgrown its existing laboratory spaces, originally designed to train highschool shop teachers. These facilities are no longer sufficient to meet thedemands of contemporary engineering education, particularly as EWU seeks toexpand its offerings to include a Civil Engineering (CE) program. Thisexpansion is vital to addressing the statewide shortage of civil engineers andleveraging EWU's existing strengths in mechanical engineering, geosciences, andconstruction management.

Priority andUnderserved Communities:
This project isa high priority for EWU, as it directly supports the university's mission toprovide an inclusive, equitable, and transformative learning experience. Thenew Engineering Building will play an important role in increasing enrollmentin high-demand STEM programs, particularly benefiting rural and underservedpopulations. EWU has developed successful outreach programs to thesecommunities, creating a strong pipeline for future students. By providingmodern, flexible, and safe facilities, the university will be better positionedto serve these populations and meet the workforce needs of Washington State,where there is a 65% gap in the supply of engineering graduates.

Public SafetyImprovements:
The currentteaching laboratories in the Computing and Engineering Building (CEB) andCheney Hall pose significant safety concerns. Due to overcrowding and poordesign, instructors lack proper sightlines to monitor all students duringlaboratory activities, increasing the risk of accidents. The proposed newEngineering Building will address these safety issues by providingpurpose-built spaces that allow for better supervision, safer equipmentplacement, and compliance with safety standards. This improvement is crucialfor ensuring the well-being of students and faculty, while also aligning withthe university's commitment to providing a safe and supportive learningenvironment.

FacilityPreservation and Existing Deficiencies:
The existingfacilities, primarily the CEB and Cheney Hall, are outdated for modernengineering education. The CEB, designed in 2005 as a classroom and officebuilding, has only one area (the basement) equipped with the necessarymechanical, electrical, and plumbing systems for hands-on training. However,even this space is inadequate, with low overhead clearances, insufficientelectrical services, and inadequate infrastructure for advanced experiments. InCheney Hall, the technological infrastructure is obsolete, with outdated dataconnectivity and an original electrical system from 1967 that cannot

Description

supporttoday's educational technology needs.

OperatingBudget and Cost Efficiency:
Investing in anew Engineering Building will also lead to long-term operating budget savings.The current piecemeal adaptations of CEB and Cheney Hall are inefficient andcostly to maintain. By consolidating engineering programs into a single,purpose-built facility, EWU can reduce ongoing maintenance expenses, improveenergy efficiency, and eliminate the need for costly temporary fixes toexisting deficiencies. Additionally, the new building will be designed withsustainability in mind, serving as a living laboratory for environmentalstewardship and reducing operational costs through energy-efficienttechnologies.

In summary, theconstruction of a new Engineering Building at EWU is essential to overcomingcurrent facility deficiencies, improving safety, and expanding high-demandengineering programs that will serve both the university's mission and thebroader needs of Washington State. This project will not only enhance theeducational experience for students but also support underserved communitiesand contribute to the state's economic development by addressing the criticalshortage of qualified engineers.

What will therequest produce or construct (predesign/design of a building, additional space,etc.)? When will the project start/end? Identify if the project can be phased,and if so, which phase is included in the request. Provide detailed cost backup.

The budgetrequest for Eastern Washington University's (EWU) new Engineering Building aimsto produce a state-of-the-art facility that will significantly expand andenhance the university's engineering education capabilities. The project willinvolve the construction of an 82,522 gross square feet (GSF) building,connected to the existing Computing and Engineering Building (CEB). Additionally,42,411 GSF of space within the CEB and Cheney Hall will be modified tointegrate with the new structure, optimizing the use of existing facilities fornon-laboratory courses and operational efficiencies.

The project isdesigned to address the growing demand for engineers in Washington State, wherethere is a projected 65% gap in the supply of engineering graduates needed tomeet workforce demands over the next five years. By providing modern, flexible,and pedagogically appropriate spaces, the new building will support enrollmentgrowth, particularly with the introduction of a new Civil Engineering program.Conservative estimates forecast a 76% increase in engineering enrollment withinthe first four years of the building's occupancy.

The timelinefor the project anticipates an immediate start upon securing funding, with agoal to complete the construction within a set timeframe that aligns with EWU'sstrategic goals and the urgent need for expanded engineering capacity. Specificdetails regarding the start and end dates will depend on the final approval andfunding allocation.

Constructionbegins: July of 2027 (Mid-point 11/28)
ConstructionEnds: March of 2030

The project canbe phased to align with available funding and construction logistics. Theinitial phase, which is the focus of the current budget request, includes thepredesign, design, and early construction activities necessary to begin theproject. Detailed cost backups will provide a comprehensive breakdown ofexpenses associated with each phase, ensuring transparency and alignment withEWU's financial planning and state funding requirements.

This phasedapproach allows for flexibility in managing the project while ensuring thatcritical milestones, such as the expansion of instructional spaces and theintroduction of the Civil Engineering program, are prioritized to meet theincreasing demand for engineering graduates in Washington State.

Project Number: 40000156
Project Title: Civil Engineering Building - Applied Engineering

Description

See EWU'ssubmitted Predesign report for detailed cost breakdown.

How would therequest address the problem or opportunity identified in question 1? What wouldbe the result of not takir action?

Design andconstruction of a new engineering building and targeted renovation of existingspace in CEB and Cheney Hall to provide contemporary, pedagogically appropriatefacilities. The project will Provide sufficient high quality teachinglaboratories to flexibly serve multiple degree programs over time, Providesstate-of-the-art engineering research facilities for faculty and industrycollaboration,
Directconnection to CEB takes advantage of CEB's strengths, creating efficienciessuch as shared instructionalresources, direct access to faculty and administrative offices, and sharedstudent amenities.

Not TakingAction
Theconsequences of taking no action would be a negative impact on EWU students,the engineering programs, the University, the region, and the State. No actionwould maintain substandard,pedagogically inappropriate facilities and makes it impossible for EWU to offer new,high-demand STEM degree programs such as civil engineering. Student success inEWU's engineeringprograms could not be ensured. Theresult would be that EWU would not be able to produce moregraduates in high demand engineering professions and this would undermine the policies of theWashington Student Achievement Council and the Office of Financial Management.

Additionally,the current Engineering Building would continue to have significantdeficiencies in buildingsystems, technology, student spaces and general quality. The current facilities would also continue toexperience high maintenance and repair costs, which if deferred will result infacilities that are notcapable of supporting even the current student load.

Whatalternatives were explored? Why was the recommended alternative chosen? Beprepared to provide detailed cost backup. If this project has an associatedpredesign, please summarize the alternatives the predesign considered.

Alternative 1:Preferred Alternate - New Engineering Building on the Existing Campus
Alternative 2: Renovation of Existing Engineering Facilities
Alternative 3:No Action

Alternative 1:Preferred Alternate - New Engineering Building on the Existing Campus
Satisfaction ofthe program requirements can readily be achieved through construction of a new building on theCheney campus providing the contemporary, pedagogically appropriate facilities needed toflexibly serve multiple hands-on degree programs including the existing MENTand prospective CEprograms. It will improve the quality and safety of laboratories, increasefaculty researchopportunities, support community and prospective student outreach activities,and encouragestudent engagement with each other and the regional engineering industry.

The newstructure will be designed to provide desired health, safety and functionalitywithout compromise. The new building will connect to CEB, takingadvantage of CEB's strengths, creating efficienciessuch as shared departmental and instructional resources, direct access tofaculty and administrativeoffices, and shared student amenities. The building will be a student centered environmentthat provides a high-quality engineering teaching and research environment thatis responsive tothe needs of engineering education and the engineering industry.

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Alternative2: Renovation of Existing EngineeringFacilities
An alternativefor addressing the deficiencies of the existing facilities would be a majorrenovation of CEB andCheney Hall. The alternative falls short in serious ways: it is not onlysimilar in cost to a new building, it results in substandard teaching andresearch laboratories and continued operational and systems inefficiencies, andit eliminates eight good quality, general use classrooms and two computer labs.Additional costs would be incurred to relocate the entire EngineeringDepartment and others from both buildings during construction.

CEB wascompleted in 2005, is currently in good condition for its primary purpose as aclassroom, computer laband office building. However, the existing structure and systems of CEB are not compatible withthe needs of engineering education. Theventilation demands and laboratory support systemsin a engineering facility require above-average floor-to-floor heights thatallow clear ceiling space for large duct work and laboratory plumbing andelectrical systems. The existing CEBmechanical, engineering and plumbing systems are suited only for office,classroom and computer lab space. They are not adequate for engineering andcannot be made so without substantialdemolition and reconstruction of the superstructure. Resulting labs would still be substandard insize and quality due to restricted dimensions and existing low ceiling heights.

Cheney Hall wascompleted in 1966 and many of the components are approaching end of expectedlife cycles. It currently houses a portion of the athletics department andswing space for the sciences. Both buildings do not meet current ADA,structural and energy codes.

Alternative 3:No Action
See statementin #3 What would be the result of not taking action?

Which clientelewould be impacted by the budget request? Where and how many units would beadded, people or communities served, etc.

The budgetrequest for the new Engineering Building at Eastern Washington University (EWU)will significantly impact a wide range of clientele, including students,faculty, regional industries, and the broader Washington State community. Theprimary beneficiaries will be students enrolled in the Department of MechanicalEngineering & Technology (MENT) and the proposed Civil Engineering (CE)program. These students will gain access to modern, high-tech, hands-onteaching and research laboratories, which are crucial for their education andfuture careers. The new facilities will replace the current substandard spacesthat have long hindered the department’s ability to provide contemporaryengineering education and meet safety and accessibility standards.

The projectwill add an 82,522 GSF building dedicated to advanced engineering education,with 42,411 GSF of the existing Computing and Education Building (CEB) andCheney Hall being modified to integrate with the new space. This expansion isexpected to drive significant growth in engineering enrollment, withprojections indicating a 76% increase within the first five years of occupancy.This growth will allow EWU to produce more graduates in mechanical engineeringand the newly proposed civil engineering program, directly addressing thestatewide shortage of civil engineers.

The broadercommunity, including regional civil engineering firms and the Spokane and WestPlains mechanical engineering marketplace, will benefit from the increasednumber of highly trained graduates. These firms often rely on EWU for qualifiedprofessionals, and the expansion will help meet the growing demand forengineers across Washington State. The new building will also enhance the university'sability to conduct engineering research and foster on-campus industrycollaboration, further serving the community and the state by tackling some ofthe 21st century’s most pressing challenges.

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Project Title: Civil Engineering Building - Applied Engineering

Description

Listed beloware the degree options, within the Department of Mechanical Engineering &Technology. Key to the project is in the integrated labs and support spacesthat allow for community outreach programs and activities with rural andunderserved populations. The new facility will encourage student engagementwith the regional engineering industry, the Engineering Department and eachother.

Current programs/degrees associated with this project are as follows:
-Mechanical Engineering / Mechanical EngineeringTechnology (Bachelor of Science)
-Manufacturing Technology: DFM Option (Bachelor ofScience)
-Manufacturing Technology: Process Option(Bachelor of Science)
-Construction Management Technology (Bachelor ofScience)
-Applied Technology (Bachelor of Science)

Future programs/degrees associated with thisproject are as follows:
-Civil Engineering (Bachelor of Science)

Does this project or program leverage non-state funding? If yes, howmuch by source? If the other funding source requires cost share, also includethe minimum state (or other) share of project cost allowable and the supportingcitation or documentation.

This projectdoes not leverage non-state funding.

Describe howthis project supports the agency's strategic master plan or would improveagency performance. Reference feasibility studies, master plans, spaceprogramming and other analyses as appropriate.

EWU's Mission& Vision:
The proposedEngineering Building will support EWU's mission and vision by providingfacilities which willencourage enrollment, support community and prospective student outreachactivities with rural andunderserved populations, improve the quality and safety of laboratories, andencourage student engagement with each other, the engineering programs and theregional engineeringindustry.

EWU Mission: EasternWashington University provides an inclusive, equitable, and transformative learningexperience, driving the pursuit of knowledge with affordable academicexcellence.

EWU Vision: EasternWashington University provides an education rooted in the liberal arts, designed toaddress the unique challenges and opportunities facing the region.Characterized by astudent-centered focus and opportunities for applied learning in high demandfields, this educationcreates upward social mobility and intellectual growth for our students thatsupports a healthy,sustainable, and economically successful region.

EWU Values:
AcademicExcellence. As a community of learners, we pursue truth and advance knowledgethrough creative works, research, and scholarship. Our student-centerededucation provides excellent teaching, dynamic conversations, and a robustintellectual experience both inside and outside the classroom. We provideapplied learning opportunities to prepare students for future success, investin our workforce and create opportunities for professional growth for students, faculty, andstaff.
Engineering Building's Role: The Engineering Building's contemporary, hands-on teaching laboratoriesand collaboration

Description

spaces will support innovative instruction and exchange ofideas. Increased enrollment through a contemporary facility that celebratesapplied learning will allow the department to add a civil engineering degreeand graduate programs which will result in additional FTE faculty hires.

Accessibility. EasternWashington University strives to create a more inclusive, obtainable, and equitablecollege education.
EngineeringBuilding's Role: The Engineering Building will increase access to high demand degreesand provide critical space for communityengagement with prospective rural and underserved students.

Belongingthrough Justice, Equity, Diversity and Inclusion. We arecommitted to building an inclusive,supportive, and equitable university community. We strive to integrate theprinciples of justice,equity, diversity, and inclusion into all university operations, fostering anenvironment that nurtures a sense of belonging among all members of thecommunity. Students, staff, and faculty are seen, understood, and appreciatedfor the talents they bring to our educational community.
Engineering Building's Role: The Engineering Building will be a place to practice inclusive practicesthrough the hands-on nature of the teaching laboratories, the transparency intostudent project laboratories, ample space to assemble and display student work,and visible spaces for team collaboration and student clubs. A central spacefor internal and outreach events and celebrations welcomes and invites studentsand faculty to participate in the larger engineering community.

Regional Impactand Regional Contribution. We promote economic vitality and regional success throughscholarly research, dedicated service, and educational programs that meetregional workforce needs in high demand fields. When combined with ourcommitment to a liberal arts education, we enhance social mobility,inclusivity, and the well-being of our community while remaining nimble to itsever-changing demands.
EngineeringBuilding's Role: Not only will the Engineering Building contribute meaningfully to theregional engineering workforce demand through increased enrollment, it willincrease student and faculty interaction with the cutting-edge mechanical andcivil engineering industries in the region through contemporary researchlaboratories and flexible space for departmental outreach.

StudentSuccess. We embrace all students. Students' needs are complex, and studentsuccess requiresstudent engagement and positive outcomes. We are committed to supporting allour students with a focus on creating conditions informed by the needs of ourfirst-generation, low-income, and other structurally marginalized students
EngineeringBuilding's Role: The Engineering Building will be a student-centered environment. Itshigh quality, hands-on teaching and project laboratories, flexible work areasand student interaction spaces will inspire and fully support their uniqueengineering interests and ideas through degree completion.

Sustainability. We are leaderscommitted to sustainability as a balance between the needs of the environment,the needs of the economy, and equitable outcomes for current and future generations.
EngineeringBuilding's Role: The Engineering Building will be a living laboratory for sustainablefacility design, with building systems on display for faculty and students. Acivil engineering program helps to sustain the local economy andinfrastructure.

Does thisproject include IT related costs, including hardware, software, cloud basedservices, contracts or staff? If yes, attach IT Addendum.

This projectdoes not fund the development or acquisition of new or enhanced software orhardware systems or service. This facility will use already establishedsoftware and hardware platforms that are currently on campus.

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Description

If the projectis linked to the Puget Sound Action Agenda, describe the impacts on the ActionAgenda, including expenditure and FTE detail. See Chapter 14 Puget SoundRecovery) in the 2025-27 Operating Budget Instructions.

Not applicablefor this project.

How does thisproject contribute to meeting the greenhouse gas emissions limits establishedin RCW 70A.45.050, Clean Buildings performance standards in RCW 19.27A.210, orother statewide goals to reduce carbon pollution and/or improv efficiency?

SustainableDesign
Sustainablestrategies to reduce and enhance the project's impact on the environment andlower its energydemand will ultimately have a beneficial effect on its longevity andoperational cost. Reusing andupgrading existing buildings is the most important greenhouse gas reductionstrategy in the builtenvironment, reducing air pollution, eliminating waste, and reducing the demandfor newmaterials. There are numerousregulations and plans that point this project towards highly energyefficient and low-carbon building strategies listed below, along with manysustainability strategies thatcan be advanced in the next phase.

HighPerformance Buildings: EasternWashington University has a proven track dating back to 2008 ofdesigning and constructing high-performance buildings using the LEED ratingsystem. This projectwill select design consultants who embody EWU's sustainability objectives. This project will bedesigned, constructed, and certified to the LEED Silver Standard, as a minimum,in accordance withRCW 39.35D. A LEED Checklist, outlininga preliminary approach to silver, has been includedin the Appendix. EWU has had a historyof achieving LEED silver or higher and will strive toachieve LEED gold or platinum on this project.

StateEfficiency and Environmental Performance: TheGovernor's Executive Order 20-01 mandates highperformance buildings for reduction of greenhouse gases, reduction ofpollutants from fossilfuels, and the use of clean energy when technically and economically feasible.Eastern WashingtonUniversity acknowledges that the costs of constructing zero energy or zeroenergy capablebuildings are nearing parity with conventional buildings. Consequently, theuniversity will furtherprogress its building construction endeavors toward this directive, employinglife-cycle cost analysistools to inform decision-making throughout the design process. The life-cycle cost analysisperformed as part of this predesign included the evaluation of a net zerobuilding. In studying theuse of photovoltaic (PV) solar panels for on-site renewable energy generation, the requiredarea of PV panels exceeded the available roof area and would require additional dedicated sitearea. PV panels required by the Washington State Energy Code will be installed.

State EnergyStandards for Clean Buildings: TheDepartment of Commerce, through RCW 19.27A.210, hasdeveloped standards for reducing greenhouse gas emissions from the building sector aspublished in the Washington State Clean Buildings Performance Standard(2021). The Clean BuildingPerformance Standard has established energy use intensity targets. This building is anticipated toexceed the 50,000 square feet threshold for Tier 1 Buildings, mandatingcompliance on the buildinglevel. EWU monitors their Energy UseIntensity (EUI) as a campus and has been evaluatingtheir overall EUI in relation to the Washington State Clean BuildingPerformance Standard, witha target campus EUI of 112.2. Thepreferred building option of this predesign is anticipated toreduce the entire campus' EUI from the current value of 118.4 closer tocompliance with the CleanBuilding Performance Standard EUI requirement.

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Capital Project Request

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Version: 24 EWU Capital Budget

Report Number: CBS002
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Project Number: **40000156**
Project Title: **Civil Engineering Building - Applied Engineering**

Description

As of March 15,2024, the 2021 Edition of the Washington State Energy Code has been implemented.Washington State Energy Codes are on a path towards 70% energy use reduction and theelimination of fossil fuels from buildings by 2031. With progressively moreaggressive energyrequirements, facilities will progress towards reducing energy consumption andassociated greenhouse gasemissions, as outlined in the Greenhouse Gas Emissions Policy. The 2021 codeincludes a requirement for photovoltaics panels on site. The project will bepermitted under the code in effectat the time of permit which may be the 2021 codes or the 2024 codes, which are expected to bein effect November of 2026.

Requiredvehicle charging capabilities: Per RCW 19.27.540, where new parking isprovided at the building,electric vehicle charging stations and infrastructure shall be provided incompliance with WAC51-50-0429. The electric vehicle charging stations and infrastructure shallmeet Level

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
New Facilities/Additions (Major Projects)

Growth Management impacts
None - Located on existing EWU campus

New Facility: No

How does this fit in master plan
Growth in the STEM fields directly aligns with Eastern's 2014 Master Plan. This will also serve local industries as well as the design and engineering community. In addition, EWU is in the process of updating the Master Plan which will be completed in 2025.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057-1	State Bldg Constr-State	127,500,000				7,500,000
	Total	**127,500,000**	**0**	**0**	**0**	**7,500,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State	120,000,000			
	Total	**120,000,000**	**0**	**0**	**0**

Operating Impacts

Total one time start up and ongoing operating costs

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Project Title: Civil Engineering Building - Applied Engineering

Operating Impacts

Acct Code	Account Title	FY 2028	FY 2029	FY 2030
FTE	Full Time Employee	1.0	2.0	2.0

Narrative

Additional FTE's will be required to operate, maintain, and clean the additional building area.

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000156	40000156
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Civil Engineering Building - Applied Engineering
OFM Project Number	40000156

Contact Information	
Name	Troy Bester
Phone Number	509-359-2204
Email	tbester@ewu.edu

Statistics			
Gross Square Feet	124,933	MACC per Gross Square Foot	$648
Usable Square Feet	79,629	Escalated MACC per Gross Square Foot	$739
Alt Gross Unit of Measure			
Space Efficiency	63.7%	A/E Fee Class	A
Construction Type	Other Sch. A Projects	A/E Fee Percentage	7.08%
Remodel	No	Projected Life of Asset (Years)	30
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, Wa
Contingency Rate	5%		
Base Month (Estimate Date)	September-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	March-24	Predesign End	June-24
Design Start	November-25	Design End	January-27
Construction Start	July-27	Construction End	March-30
Construction Duration	32 Months		

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Project Cost Summary

Total Project	$111,877,496	Total Project Escalated	$127,131,079
		Rounded Escalated Total	$127,131,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$7,500,000**
Next Biennium	**$119,631,000**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$4,174,615		
Extra Services	$2,224,200		
Other Services	$1,969,052		
Design Services Contingency	$418,393		
Consultant Services Subtotal	**$8,786,260**	**Consultant Services Subtotal Escalated**	**$9,506,208**

Construction			
Maximum Allowable Construction Cost (MACC)	$80,908,889	Maximum Allowable Construction Cost (MACC) Escalated	$92,340,229
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$4,545,444		$5,205,898
Non-Taxable Items	$0		$0
Sales Tax	$7,605,493	Sales Tax Escalated	$8,681,671
Construction Subtotal	**$93,059,826**	**Construction Subtotal Escalated**	**$106,227,798**

Equipment			
Equipment	$5,100,000		
Sales Tax	$453,900		
Non-Taxable Items	$0		
Equipment Subtotal	**$5,553,900**	**Equipment Subtotal Escalated**	**$6,360,882**

Artwork			
Artwork Subtotal	**$632,493**	**Artwork Subtotal Escalated**	**$632,493**

Agency Project Administration			
Agency Project Administration Subtotal	$3,845,016		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$3,845,016**	**Project Administration Subtotal Escalated**	**$4,403,698**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$111,877,496**	Total Project Escalated	**$127,131,079**
		Rounded Escalated Total	**$127,131,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$9,506,208		$7,500,000	$2,006,208	**$0**
Construction					
Construction Subtotal	$106,227,798			$106,227,798	**$0**
Equipment					
Equipment Subtotal	$6,360,882			$6,360,882	**$0**
Artwork					
Artwork Subtotal	$632,493			$632,493	**$0**
Agency Project Administration					
Project Administration Subtotal	$4,403,698			$4,403,698	**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$127,131,079**	**$0**	**$7,500,000**	**$119,631,079**	**$0**
	$127,131,000	**$0**	**$7,500,000**	**$119,631,000**	**$0**
	Percentage requested as a new appropriation		**6%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Design
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
Remaining consultant services, construction, equipment, artwork, agency project administration
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	NA				
Appraisal and Closing	NA				
Right of Way	NA				
Demolition	NA				
Pre-Site Development	NA				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0382**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$4,174,615			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$4,174,615**	**1.0583**	**$4,417,996**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$90,000			
Geotechnical Investigation	$30,000			
Commissioning	$180,000			
Site Survey	$28,500			
Testing				
LEED Services	$90,000			
Voice/Data Consultant	$60,300			
Value Engineering	$35,000			
Constructability Review	$31,400			
Environmental Mitigation (EIS)	$30,000			
Landscape Consultant	$150,000			
Electronic Security Consultant	$20,000			
Audiovisual Consultant	$40,000			
Lighting Consultant	$58,000			
Laboratory Planning Consultant	$450,000			
Acoustical Consultant	$34,000			
Interior Design	$400,000			
Elevator Consultant	$20,000			
Hardware Consultant	$7,500			
Code Consultant	$8,900			
Building Envelope Consultant	$80,000			
Value Engineering Support	$35,000			
Energy Life Cycle Cost Analysis (ELCCA)	$80,000			
Life Cycle Cost Analysis (LCCA)	$30,000			
Energy Modeling	$65,600			
Models & Renderings	$25,000			
Full Fire Protection Design	$15,000			
Reimbursible Expenses	$130,000			

Sub TOTAL	**$2,224,200**	**1.0583**	**$2,353,871**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,875,552			31% of A/E Basic Services
HVAC Balancing	$20,000			
Staffing				
Commissioning Support	$33,500			
Record Drawings	$40,000			
Sub TOTAL	**$1,969,052**	**1.1453**	**$2,255,155**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$418,393			
Other				
Insert Row Here				
Sub TOTAL	**$418,393**	**1.1453**	**$479,186**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$8,786,260**		**$9,506,208**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$1,743,564			
G20 - Site Improvements	$726,364			
G30 - Site Mechanical Utilities	$285,700			
G40 - Site Electrical Utilities	$670,000			
G60 - Other Site Construction	$137,500			
Design Contingency	$641,363			18%.
Contractor Markup	$294,314			7%.
Sub TOTAL	**$4,498,805**	**1.0963**	**$4,932,040**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other	$2,128,177			
Insert Row Here				
Sub TOTAL	**$2,128,177**	**1.0963**	**$2,333,121**	
3) Facility Construction				
A10 - Foundations	$1,267,643			
A20 - Basement Construction	$575,940			
B10 - Superstructure	$5,812,905			
B20 - Exterior Closure	$3,681,412			
B30 - Roofing	$1,168,398			
C10 - Interior Construction	$4,277,407			
C20 - Stairs	$175,000			
C30 - Interior Finishes	$4,793,566			
D10 - Conveying	$525,000			
D20 - Plumbing Systems	$4,029,990			
D30 - HVAC Systems	$12,963,877			
D40 - Fire Protection Systems	$610,792			
D50 - Electrical Systems	$10,165,295			
F10 - Special Construction				
F20 - Selective Demolition	$365,452			
General Conditions	$3,680,000			
CFCI Equipment	$3,500,000			
CFCI Casework & Furnishings	$1,246,390			
Design Contingency	$10,824,025			18%.
Contractor Mark Up	$4,618,816			7%.
Sub TOTAL	**$74,281,907**	**1.1453**	**$85,075,068**	

4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$80,908,889**		**$92,340,229**	
	$648		*$739 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$4,045,444			
Additional Allowance for Renovation Portion of Project	$500,000			
Sub TOTAL	**$4,545,444**	**1.1453**	**$5,205,898**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1453**	**$0**	
9) Sales Tax				
Sub TOTAL	**$7,605,493**		**$8,681,671**	
CONSTRUCTION CONTRACTS TOTAL	**$93,059,826**		**$106,227,798**	

Green cells must be filled in by user

Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment	$3,600,000				
E20 - Furnishings	$1,500,000				
F10 - Special Construction					
Other					
Insert Row Here					
Sub TOTAL	**$5,100,000**		**1.1453**	**$5,841,030**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.1453**	**$0**	
3) Sales Tax					
Sub TOTAL	**$453,900**			**$519,852**	
EQUIPMENT TOTAL	**$5,553,900**			**$6,360,882**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$632,493				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$632,493**		**NA**	**$632,493**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$3,845,016				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$3,845,016**		**1.1453**	**$4,403,698**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0963**	**$0**	

Green cells must be filled in by user

C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

Availability of Space/Campus Utilization Template

Project name:	Civil Engineering Building - Applied Eng.	CBS/OFM Project #:	40000156
Institution:	Eastern Washington University	Category:	Growth - Standalone
Campus/Location:	Cheney		

Enrollment

2023 fall on-campus student FTE:	8,680	Expected 2024 fall on-campus student FTE:	8,246
		% increase budgeted:	-5.00%

Enter the average number of hours per week each for (a) classroom seat and (b) classroom lab is expected to be utilized in Fall 2024 for the campus where the project is located.

(a) General University Classroom Utilization		(b) General University Lab Utilization	
Fall 2023 Weekly Contact Hours	60,425	Fall 2023 Weekly Contact Hours	11,565
Multiply by % FTE Increase Budgeted	-5.00%	Multiply by % FTE Increase Budgeted	-5.00%
Expected Fall 2024 Contact Hours	57,404	Expected Fall 2024 Contact Hours	10,987
Expected Fall 2024 Classroom Seats	6,415	Expected Fall 2024 Class Lab Seats	996
Expected Hours per Week Utilization	**8.9**	**Expected Hours per Week Utilization**	**11.0**
HECB utilization standard (hours/GUC seat)	22.0	HECB utilization standard (hour/GUL seat)	16.0
Difference in utilization standard	-59.3%	Difference in utilization standard	-31.1%

If the campus does not meet the 22 hours per classroom seat and/or the 16 hours per class lab HECB utilization standards, describe any institutional plans for achieving the utilization standard.

Eastern Washinton University finds itself in a similar situation as so many other Universities around the nation in a post-pandemic environment. During this time while the focus needs to remain on increasing enrollment, it is vitally important to invest in current facilities so that they continue to serve students, do not fall into disrepair, and are designed to meet future demands, technologies, and teaching pedagogies. In order to achieve this, EWU has embarked on a number of studies to best determine future actions which may range from strategic investment in facilities and/or contracting in others. Some of that work is summarized below.

SRA - In 2022, the University began a Strategic Resource Allocation (SRA) process which entailed a systematic, collaborative, and transparent process to examine the ways resources are being invested. As a regional comprehensive university, it is EWU's goal to ensure that academic programs are best aligned to meet regional workforce needs, and university services aligned in such a manner as to ensure the student experience is meaningful and campus resources are efficient, effective, and sustainable. The process culminated in 2024 and measures are being put into place to make the University as efficient as possible, including physical improvements, consolidation, and/or reductions where facilities are no longer effectively serving the University.

Strategic Planning – Eastern Washington University is in the process of a Strategic Planning effort to guide the direction and growth of Eastern Washington University. By systematically assessing strengths, weaknesses, opportunities, and threats, EWU will articulate a clear vision for the future and establish well-defined goals. This process enables the University to align its resources, expertise, research endeavors, and educational programs effectively.

CCMP – EWU has just started the process to develop a Comprehensive Campus Master Plan (CCMP) to replace the previous plan that was completed in 2014. Recognizing the unique character, current physical and financial conditions, program and space needs, and growth during the past 10 years and projected into the future, the CCMP will be a guiding document to inform decisions for the next 10 years regarding development, growth, consolidation, etc. This document will include and be informed by numerous other studies that are recently completed or underway: SRA, Strategic Plan, Decarbonization Plan, Climate Resiliency and Sustainability, CCMP, Geothermal Studies, Housing Plan, Currently Planned Construction and Renovation Projects, and Predesign Studies.

Reasonableness of Cost Template

Project name:	Civil Engineering Building - Applied Eng.	CBS/OFM Project #:	40000156
Institution:	Eastern WA University	Category:	Growth - Standalone
Campus/Location:	Cheney		

	Construction Begin	Construction End	Construction mid-point	Escalation Multiplier
Construction mid-point:	July-27	March-30	November-28	1.5521

MACC from C-100: $80,909,899

	Expected MACC/GSF in 2019	Expected MACC/GSF	GSF by type	Expected MACC
Classrooms	$405	$629	1,641	$1,031,523
Instructional labs	$497	$771	78,908	$60,868,543
Research labs	$681	$1,057	11,888	$12,565,257
Administration	$406	$630	14,314	$9,019,917
Libraries	$340	$528		$0
Athletic	$385	$598		$0
Assembly, exhibit and meeting rooms	$428	$664	18,182	$12,078,163
			124,933	$95,563,403

C-100 to expected MACC variance: 85%

Due to their HVAC, plumbing and equipment needs, engineering labs are at the high end of the range indicated in the HEFS Report ALTERNATE USING HIGH END OF LABORATORY RANGE PER TABLE 2 IN HIGHER EDUCATION FACILITY STUDY (Rev 2020)

Efficiency of space allocation. For each major function in the proposed facility (classroom, instructional labs, offices), identify whether space allocations will be consistent with the Facility Evaluation and Planning Guide (FEPG) assignable square feet standards. If any proposed allocations exceed FEPG standards, explain the alternative standard that has been used and why.

EWU Engineering Building & Targeted Renovations of CEB and Cheney Hall

FEPG room classification number	FEPG room classification type	Project ASF per station	FEPG standard	Meets standard (Y/N)	Comments
110	Classroom	20	16-26	Y	
210	Class lab – mechanical engineering	57-290	175 (Range 35-180)	Y/N	Varies based on engineering equipment sizes; see FEPG Standards Appendix A; Wood, Metals, Additive Manuf and Concrete Labs require significant additional ASF/Station for large equipment and working clearances.
215	Class lab – services			N/A	Sized appropriately to class lab needs
230	Computer lab	44	60	N	Falls below FEPG Guidelines but meets programming need
250	Research lab			N/A	Sized for research program needs
255	Research lab – service			N/A	Sized appropriately to research lab needs
311	Faculty office	140	140	Y	
313	Student assistants	70 per 1	140 per 2 min.	Y	
314	Clerical office	140	140	Y	
316 & 317	Staff & other office	113	120	Y	Below standards appropriate for visiting Advising staff
350	Conference room	30	20	N	Sized to allow program flexibility and storage needs
550	Demonstration			N/A	Sized appropriately for departmental needs
651	Nonpublic lounge			N/A	Sized appropriately for departmental needs
680	Meeting room			N/A	Sized appropriately for departmental needs

Identify the (a) assignable square feet in the proposed facility; (b) the gross square feet; and (c) the net building efficiency ("a" divided by "b").

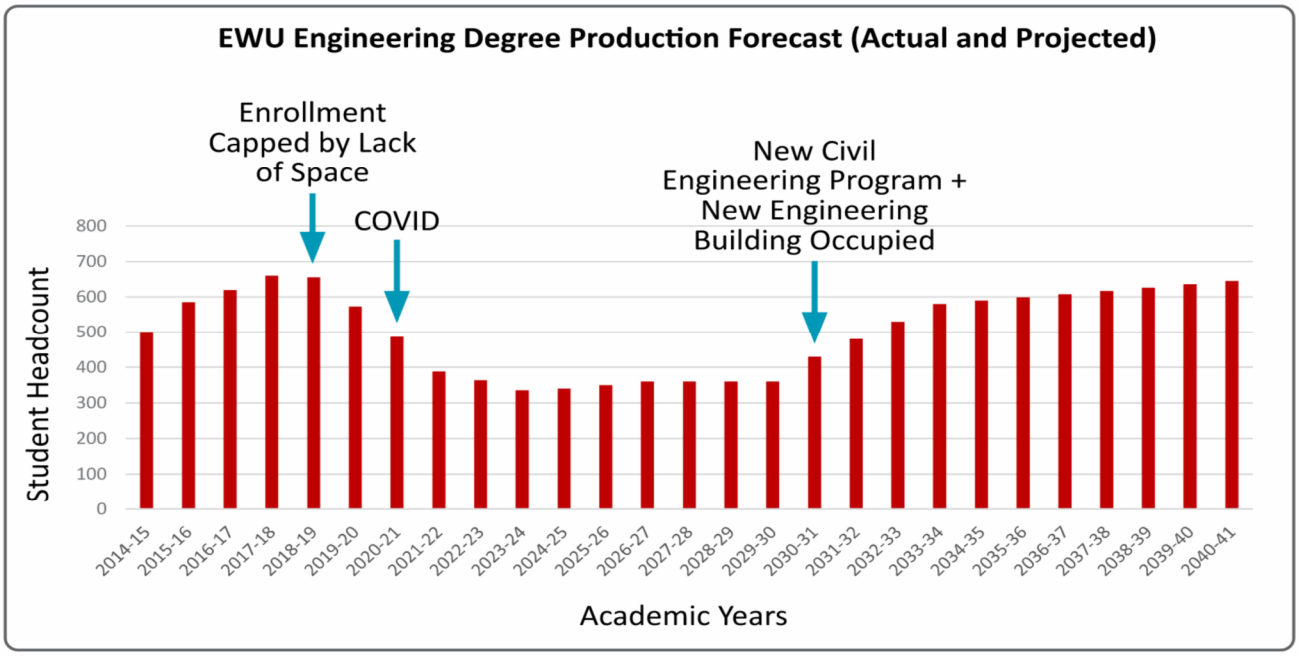
Instructions:
Provide the facility's condition score (1 superior – 5 marginal functionality) from the 2016 Comparable Framework study, and summarize the major structural and systems conditions that resulted in that score. Provide selected supporting documentation in appendix, and reference them in the body of the proposal.

Narrative Response:
Computing and Engineering Building Conditions Deficiencies: CEB was completed in 2005 and soon thereafter lacked any expansion space for program growth. The 2016 Facility Condition Assessment ranks the condition of the facility as "good/excellent" with an **overall 1.6 Facility**
Cheney Hall Building Conditions Deficiencies: Cheney Hall was originally completed in 1966 to house the Industrial Arts program. The building is 50 years old. There have been some minor renovations of the building in 2006 and 2016. The balance of the shell and space is of original construction and condition. **The Overall Facility Condition Score for the building is 2.6**. Many of the components are in the Fair-Systems Approaching End of Expected Life Cycles with some at critical level of Needs Improvement;
Limited Functionality.
• Substructure : 2.0
• Shell : 2.3
• The substructure and the shell of the building rank in the category of "good." The roof and windows on the facility are original installation and do not meet current state energy code. The exterior walls and roof are not insulated and affect the utility cost of heating and cooling the building.
• Interiors: 2.8
• Most the interior walls, floors and ceiling are "worn" due to age with ceiling ranking 4 or "poor".
• Services: 3.0
The systems of the building are what show the most decline. While the Plumbing and Electrical are in the "fair" range, the HVAC and Fire Protection components are at the level of 4 and 5 "poor" equipment marginal or "unsatisfactory" system non-functioning or seriously deficient. The building HVAC system does not meet current Washington State energy code and there are reported indoor air quality issues that can only be address by a new ventilation system.The building has many Americans with Disability Act (ADA) deficits due to the age and the original design. In particular, the elevator does not meet ADA requirements for current square foot or controls location.

Instructions:
Identify the estimated number of additional FTE students the project is expected to enable the institution to serve when the space is fully occupied. Describe the method by which additional FTEs are calculated, including an analysis of probable student enrollment demand from project completion to full occupancy. Also provide an estimate of the number of additional FTE enrollments in high-demand fields and the fields in which such growth is expected to occur.

Per RCW 43.88D.010(1)(a), growth projects must also demonstrate that they can more cost- effectively provide enrollment access than alternatives such as university centers and distance learning.

Narrative Response:
From 2010 through 2020, EWU's Mechanical Engineering and Technology program experienced strong and sustained enrollment growth. Rebuilding post-Covid requires contemporary, inspiring, pedagogically appropriate facilities that can flexibly serve multiple hands-on degree programs in the future. The Engineering Department has built highly successful outreach programs to rural and underserved prospective student populations and continuation programs with community colleges, which have created a strong pipeline for future MENT & CE students. With the introduction of a new Civil Engineering degree, conservative forecasting shows enrollment increasing 76% in the first four years of building occupancy.



OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:45PM

Project Number: **40000071**
Project Title: **Lucy Covington Center**

Description

Starting Fiscal Year: 2022
Project Class: Program
Agency Priority: 5

Project Summary

Eastern Washington University requests funding to construct the proposed Lucy Covington Leadership House, an approximately 15,000-square-foot facility that will serve as a center to support the success of Native American students at the university and beyond. The facility is designed to foster a sense of community and ease students' transition from home to the university setting. It will feature cultural and community gathering areas, event spaces, student collaboration and support spaces, as well as exhibit galleries and performance areas. The project will advance the goals of Eastern Washington University's Lucy Covington Initiative by honoring Lucy Covington's legacy and providing dedicated support for American Indian students, reinforcing the university's commitment to regional tribes.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

The priority of this initiative is to enhance the educational experience for American Indian students at EWU by honoring the legacy of Lucy Covington, a prominent advocate for tribal sovereignty and self-determination. The project seeks to build a space that not only supports the academic and cultural needs of Indigenous students but also serves as a hub for inter-tribal collaboration, cultural exchange, and community engagement. By focusing on these priorities, the Lucy Covington Leadership House aims to create an environment where American Indian students can thrive, develop leadership skills, and connect with their cultural heritage.

In operating budget savings and public safety improvements, the preferred alternative for the Lucy Covington Leadership House represents a strategic investment in physical and cultural infrastructure. The proposed facility, with its focus on student support, community gathering, and cultural exhibitions, will likely lead to long-term savings by reducing the need for ad-hoc support services and interventions that might be required. Moreover, the creation of a space that fosters community and cultural pride can contribute to a safer and more inclusive campus environment, reducing the potential for conflicts and promoting a sense of belonging among all students. The detailed design and planning process, including the consideration of alternative solutions, ensures that the project aligns with EWU's broader strategic goals while maximizing the impact of the available budget.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the projec start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.

The request will produce the design of the Lucy Covington Leadership House, a new15,000-square-foot, one-story building at EWU. The facility is intended to support the goals of the Lucy Covington Initiative, focusing on three primary areas: community gathering, student support, and the celebration of Lucy Covington's life and legacy. Key features of the building will include a300-seat speaking hall, a dedicated American Indian Student Center, a learning commons, a community kitchen and dining area, flexible meeting spaces, and an exhibit hall showcasing the life and cultural contributions of Lucy Covington and other tribal cultures.
The project is scheduled to start with the design phase in November 2026, following the anticipated awarding of design funding in the 2025-27 Capital Budget. If awarded design funding for this coming biennium, construction funds will be requested in the 2027 – 2029 Capital budget with substantial completion expected by November 2028 and ready for occupancy by February 2029. This timeline ensures that the project will be completed efficiently while allowing sufficient time

Description

for thorough design and construction processes.

In the future, the project could be expanded in the future to include additional spaces such as instructional program areas for an expanded American Indian Studies program, a Tribal Government program, and a dedicated Salish Language teaching space, as outlined in Alternative 1. However, this expansion would require additional capital and operational funding, which is not part of this request.

The detailed cost breakdown, included in the June 2024 Predesign Report, for the project estimates a total budget of approximately $20.4 million, with design funding request of $2.4 million in the 2025-27 Biennium and construction funding request of $18 million in the 2027-29 Biennium. This budget estimate covers all aspects of the project, from initial design to final construction, ensuring that the Lucy Covington Leadership House will be a fully functional, state-of-the-art facility upon completion.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?

By constructing a dedicated space that fosters a sense of belonging, cultural awareness, and support, the project aims to create an inclusive and supportive environment for American Indian students. The preferred alternative, which involves building a15,000-square-foot facility, is designed to bring together cultural and community gathering spaces, student support areas, and exhibition spaces that celebrate the life and legacy of Lucy Covington and American Indian cultures.

If no action is taken, the EWU strategic goals of increasing dedicated campus infrastructure to support American Indian Students would take longer to put into effect.

The Lucy Covington Leadership House represents a strategic investment that aligns with EWU’s broader mission of fostering diversity, equity, and inclusion. The preferred alternative effectively addresses the identified problems by creating a physical space that supports the academic and cultural needs of American Indian students, thereby promoting their success and retention. This facility will serve as a hub for inter-tribal collaboration, cultural exchange, and community engagement, all of which are essential for addressing the historical and ongoing challenges faced by Indigenous students in higher education. The project's detailed planning and consideration of alternatives, such as the potential for future expansion, ensure that the initiative is both impactful and financially sustainable, maximizing the benefits to the university and the American Indian communities it serves.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.

The predesign work included engagement with the Project Steering Committee, American Indian EWU students, and EWU American Indian Studies faculty. These teams considered a range of alternatives to meet the needs identified in Section 02.Alternatives that were evaluated include:
Alternative 1: Preferred Alternative: Lucy Covington Leadership House (~15,000 GSF)
Alternative 2:Full Buildout, Preferred Alternative + Future Expansion (~28,000 GSF)
Alternative 3:No Action
PREFERRED PROGRAM:LUCY COVINGTON LEADERSHIP HOUSE (15,000 GSF)
The conceptual program for the Preferred Alternative allocates approximately 10,000 net assignable square feet (NASF) for a total of approximately 15,000 gross square feet (GSF), into a single-story facility that supports the project goals described in

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:45PM

Project Number: **40000071**
Project Title: **Lucy Covington Center**

Description

Section 02, Problem Statement. The proposed Lucy Covington Leadership House brings together cultural/community gathering and event space, student support and collaboration areas, and an exhibit gallery and performance space.

The proposed building concept provides a speaking hall that accommodates up to 300 people for community and cultural events, a learning commons for studying and student collaboration, and an exhibit space featuring the life and legacy of Lucy Covington and American Indian Art and Culture.

Multiple site locations for the project were reviewed as part of the Predesign process, including replacing existing infrastructure (Isle Hall) and a currently vacant site south of Martin and Williamson Hall. The Isle Hall building presents a promising opportunity for the project. Utilizing the Isle site could lead to significant improvements in Campus Energy Use Intensity (EUI) and provide a pathway towards compliance with the Clean Building Performance Standard and HB1390. This aligns with EWU's commitment to sustainability, carbon reduction, and energy efficiency. The forthcoming campus decarbonization and master plan will provide guidance regarding siting optimization and help to determine a final location for the Leadership House. Once the project is funded, further evaluation of this site should be incorporated into the design phase.

The Preferred Alternative achieves many of the project's goals and addresses the identified problem.

ALTERNATIVE 1:FULL BUILDOUT, PREFERRED ALTERNATIVE +
FUTURE EXPANSION (~28,000 GSF)
The full buildout alternative expands the program by about 8,000 NASF for approximately13,000 additional GSF. The full buildout proposes building the 15,000 GSF Preferred Alternative along with a 13,000 GSF expansion for a total buildout of28,000 GSF.

In addition to providing cultural/ community gathering and event spaces, student collaboration and support spaces, and exhibit gallery and performance spaces, the full buildout will have instructional program spaces that expand the American Indian Studies program and introduce potential programs such as a Tribal Government program and dedicated Salish Language teaching space. There will be additional classrooms and faculty offices associated with this expansion.

Alternative 1achieves and expands upon the project's goals. It was not chosen due to the following challenges:
- Requires additional capital funding and therefore would result in a larger capital project funding request.
- Operational funding to expand academic programs as described above has not yet been procured.

ALTERNATIVE 2:NO ACTION
The No Action Alternative would not address the goals of EWU.
American Indian students would continue to use the existing American Indian Education Center building, which houses the American Indian Studies program, for meetings, studying, and socializing. Dedicated campus infrastructure could become a rate limiting factor as EWU continues to increase programming and support for American Indian students.

Additionally, Alternative2 - No Action, does not fulfill EWU's strategic mission in the following ways:
- It does not create additional dedicated space on campus for American Indian students and American Indian culture and could be become a rate limiting factor in achieving EWUs goals for increasing enrollment of students from the regions numerous Tribal nations.
- It does not fulfill one of the primary purposes of the Memoranda of Understandings between EWU and three Tribal Nations: to construct a longhouse-style facility that enhances recruitment and success of American Indian students.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

*

Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:45PM

Project Number: **40000071**
Project Title: **Lucy Covington Center**

Description

The budget request for the Lucy Covington Leadership House primarily impacts American Indian students at EWU, as well as the broader campus community. The proposed facility is designed to address underrepresentation and declining enrollment of American Indian students by providing dedicated spaces that support their cultural, academic, and social needs.

The Preferred Alternative for the Lucy Covington Leadership House includes 15,000 gross square feet (GSF) of space, with approximately 9,690 square feet of assignable area. This facility will feature key program areas, including a Speaking Hall, Learning Commons, dining area with a community kitchen, flexible meeting spaces, and an exhibition gallery celebrating Lucy Covington's life and legacy. These spaces are intended to serve as central hubs for American Indian students, offering a place for community gatherings, academic collaboration, and cultural celebration.
The new facility will significantly enhance the visibility and support for American Indian students on campus by providing a central, accessible location that reflects Indigenous culture. This transformation of campus infrastructure dedicated to American Indian students will not only better accommodate the current student population but also aim to increase enrollment and retention by creating a welcoming and supportive environment.

Net Assignable Square Feet (NASF)
COMMUNITYGATHERING AREAS
Speaking Hall: 5,100 NASF, 52.6% of NASF
AMERICANINDIAN STUDENT CENTER
Learning Commons:1,800 NASF, 18.6%
Dining Area: 1,550 NASF, 16.0%
Flexible Meeting Space: 240 NASF, 2.5%
EXHIBITION AREAS
Lucy Covington Life & Legacy Gallery: 1,000 NASF,10.3%

Unassignable Square Feet (USF)
UNASSIGNABLE AREAS
Learning Commons: 910USF, 6.1% of GSF
Dining Area: 1,200USF, 8.0%
Flexible Meeting Space: 3,200 USF, 21.3%

Total Building Area 15,000 (efficiency 65%)

In summary, the Lucy Covington Leadership House will directly impact the American Indian student community at EWU by adding 15,000 GSF of purpose-built space, thereby helping to address the issue of underrepresentation and supporting the university's broader goals of cultural inclusivity and student success.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state(or other) share of project cost allowable and the supporting citation or documentation.

This project currently does not leverage non-state funding.

At this time The Lucy Covington Leadership House will be a fully State-funded project.

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Project Title: **Lucy Covington Center**

Description

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

CONNECTION TOAGENCY MISSION, GOALS & OBJECTIVES

The Lucy Covington Leadership House and Lucy Covington Initiative are part of EWU's strategic plan to increase graduation rates of underrepresented students(including American Indians).

The Lucy Covington Leadership House will support this endeavor through programs and events within the facility intended to boost enrollment and retention of American Indian students.

The Lucy Covington Leadership House aligns with EWU's mission to foster an inclusive, equitable, and transformative learning environment. American Indian students at EWU often encounter barriers to accessing higher education, have a higher risk of dropping out, and lower retention rates compared to other groups. American Indian students have barriers common to first-generation, low-income, and other structurally marginalized students. EWU strives to integrate the principles of justice, equity, diversity and inclusion into all University operations to foster an environment that nurtures a sense of belonging among all members of the community.

SENSE OFBELONGING
EWU strives to foster a profound sense of belonging, actively promote and sustain equity, dismantle systemic barriers, and embrace the unique perspectives of all individuals. As a desired outcome of this goal, the Lucy Covington Leadership House will create an important space to nurture this sense of belonging for American Indian students who often commute great distances from their reservations to be at Eastern Washington University.

STUDENT SUCCESSAND STUDENT EXPERIENCE
Another important goal is to promote student success and close structural equity gaps through a holistic, people-centered, value-driven approach that prioritizes student well-being in multiple dimensions and supports students' self-exploration and self- understanding of their values, identities, cultural heritages and career paths.

As a facility dedicated to empowering and supporting American Indian students, the Lucy Covington House will be a home for American Indian students and will help them break through the systemic barriers noted above.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.

This project does not fund the development or acquisition of new or enhanced software or hardware systems or services. This facility will use already established software and hardware platforms that are currently on campus.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.

Not applicable for this project.

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW19.27A.210, or other statewide goals to reduce carbon pollution and/or improv efficiency?

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Version: 24 EWU Capital Budget

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Project Number: **40000071**
Project Title: **Lucy Covington Center**

Description

The Lucy Covington Leadership House project is designed with strong alignment to state laws and regulations aimed at reducing carbon emissions and improving energy efficiency. Here's how it contributes to meeting the greenhouse gas emissions limits, clean buildings performance standards, and other statewide goals:

High-Performance Public Buildings (Chapter 39.35D RCW): The project is committed to high-performance building standards by targeting at least LEED Silver certification, with an ambition to achieve LEED Gold. This aligns with Chapter39.35D RCW, which promotes environmental stewardship and sustainability in public buildings. Achieving LEED certification involves using energy-efficient systems, such as energy recovery ventilators (ERVs), which enhance indoor air quality while reducing energy consumption. These measures not only lower operating costs but also support occupant productivity and well-being.

State Efficiency & Environmental Performance Requirements (Executive Order20-01): In compliance with Executive Order 20-01, the Lucy Covington Leadership House will be designed to be zero energy or zero energy capable. This includes the use of electrification technologies, such as heat pumps and solar energy systems, to minimize operational carbon emissions. The project will install a solar energy generation system capable of producing at least 7.5 kW of renewable energy, contributing to Washington State's goal of reducing reliance on fossil fuels and enhancing the sustainability of state-owned buildings.

State Energy Performance Standards for Clean Buildings (RCW 19.27A.210): Although the project is not bound by RCW 19.27A.210 due to its size (less than 50,000 gross square feet), it is still designed to exceed standard energy performance requirements. The design includes a renewable energy generation system and advanced energy-efficient technologies that align with the spirit of these standards.

Electric Vehicle Infrastructure (RCW 12.27.540): While no new parking spaces are required for this project, it will still comply with RCW 19.28 by incorporating electric vehicle charging infrastructure as needed. This infrastructure will meet Level 2 charging capacity requirements, supporting the transition to electric vehicles and reducing overall campus emissions.

Greenhouse Gas Emissions Reduction Policy (RCW 70.235.070): The project supports EWU's ambitious greenhouse gas reduction targets by incorporating strategies to minimize both operational and embodied carbon emissions. Using mass timber products, such as cross-laminated timber (CLT), significantly reduces embodied carbon emissions by up to 80% compared to traditional building materials. The project also aligns with EWU's broader goals of achieving a 45% reduction in emissions by 2030, and further reductions by 2040 and 2050. These efforts are part of a comprehensive decarbonization plan that includes transitioning away from fossil fuels, improving energy efficiency, and exploring innovative technologies.

Overall, the Lucy Covington Leadership House project is designed to significantly contribute to state and institutional goals for reducing greenhouse gas emissions, improving energy efficiency, and promoting sustainable building practices.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?

Impact on Equity in the State
The Lucy Covington Leadership House at EWU is a significant project aimed at addressing the inequities faced by American Indian students in higher education. By creating a space dedicated to the empowerment and visibility of American Indian students and Tribal communities, the project seeks to mitigate the historical issue of invisibility that contributes to low enrollment and retention rates among this demographic. The Leadership House will provide academic advising, student services, and a supportive environment, which are crucial for increasing the representation and success of American Indian students in higher education.

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Project Number: **40000071**
Project Title: **Lucy Covington Center**

Description

Impacted Communities

•□□□□□□□□**Demographic Communities:**
o American Indian Students: The project directly impacts American Indian students, who are often underrepresented in higher education. This demographic faces unique barriers, including those related to first-generation status, low income, and systemic marginalization.
o Non-American Indian Students: The project also aims to engage non-American Indian students and the broader community in understanding and addressing the needs of Indigenous peoples, fostering cross-cultural understanding.

•□□□□□□□□**Geographic Communities:**
o Tribal Communities: The project impacts regional tribes, including the Coeur d'Alene Tribe, Kalispel Tribe, Spokane Tribe Colville Federated Tribes, and other tribes across the state.
o Cheney, Washington: The EWU campus in Cheney will host the Lucy Covington Leadership House, making it a focal point for American Indian students from surrounding tribal lands and reservations who often commute long distances to attend university.

•□□□□□□□□**Disparities in Impacted Communities**
o The project addresses disparities by focusing on the specific needs of American Indian students in higher education across the nation, who have experienced a decline in enrollment by 40-50% over the past 15years, contrasting with significant growth in other ethnic groups. By providing a dedicated space for cultural and academic support, the Leadership House aims to close the equity gap in higher education for American Indian students. It also aligns with EWU's mission to integrate justice, equity, diversity, and inclusion into its operations, thereby fostering a sense of belonging and promoting student success across all dimensions of their university experience.
.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).

This project may be eligible for Direct Pay for the generation of solar electricity and has been included on the attached Direct Pay Form

Is there additional information you would like decision makers to know when evaluating this request?

Lucy Covington, a pivotal figure in tribal rights and American Indian history, played a crucial role in preserving **tribal sovereignty** and **self-determination** through her leadership. Her legacy continues at EWU with the **Lucy Covington Leadership House**, a project designed to address the **underrepresentation** of American Indian students in higher education. This facility aims to foster a **sense of belonging**, improve **student retention**, and serve as a hub for cultural exchange and academic support. The project aligns with EWU's strategic goals and its commitment to regional tribes, reflecting a broader effort to honor Covington's contributions and promote **cross-cultural understanding.**

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.

NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

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Version: 24 EWU Capital Budget

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Project Number: **40000071**
Project Title: **Lucy Covington Center**

Description

Project Type

New Facilities/Additions (Major Projects)

Growth Management impacts

No growth management impacts are associated with this project.

New Facility: No

How does this fit in master plan

The Master Plan is underway and will be finished in 2025. It will be used to inform this project to make sure the best location is determined.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057	State Bldg Constr-Unknown					
057-1	State Bldg Constr-State	20,280,000				2,400,000
061-1	EWU Capital Projects-State	300,000	62,000	168,000	70,000	
	Total	**20,580,000**	**62,000**	**168,000**	**70,000**	**2,400,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057	State Bldg Constr-Unknown				
057-1	State Bldg Constr-State	17,880,000			
061-1	EWU Capital Projects-State				
	Total	**17,880,000**	**0**	**0**	**0**

Operating Impacts

Total one time start up and ongoing operating costs

Acct Code	Account Title	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
FTE	Full Time Employee	1.0	1.0	1.0	1.0	1.0
001-1	General Fund-State	73,000	73,000	73,000	73,000	73,000
	Total	**73,000**	**73,000**	**73,000**	**73,000**	**73,000**

Narrative

Additional support would be required for operating, maintaining, and cleaning new building area.

Capital Project Request

2025-27 Biennium

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000071	40000071
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Lucy Covington Center
OFM Project Number	40000071

Contact Information	
Name	Kris Jeske, Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske@ewu.edu

Statistics			
Gross Square Feet	15,000	MACC per Gross Square Foot	$829
Usable Square Feet	9,690	Escalated MACC per Gross Square Foot	$932
Alt Gross Unit of Measure			
Space Efficiency	64.6%	A/E Fee Class	B
Construction Type	Auditorium without stag	A/E Fee Percentage	8.23%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	5%		
Base Month (Estimate Date)	September-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	January-23	Predesign End	June-24
Design Start	November-26	Design End	November-27
Construction Start	November-27	Construction End	November-28
Construction Duration	12 Months		

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Project Cost Summary

Total Project	$18,375,032	Total Project Escalated	$20,580,140
		Rounded Escalated Total	$20,580,000

Amount funded in Prior Biennia	**$300,000**
Amount in current Biennium	**$2,400,000**
Next Biennium	**$17,880,000**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$285,000		
Design Phase Services	$986,448		
Extra Services	$730,000		
Other Services	$383,114		
Design Services Contingency	$119,228		
Consultant Services Subtotal	**$2,503,790**	**Consultant Services Subtotal Escalated**	**$2,743,626**

Construction			
Maximum Allowable Construction Cost (MACC)	$12,434,902	Maximum Allowable Construction Cost (MACC) Escalated	$13,980,020
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$621,745		$700,645
Non-Taxable Items	$0		$0
Sales Tax	$1,162,115	Sales Tax Escalated	$1,306,662
Construction Subtotal	**$14,218,762**	**Construction Subtotal Escalated**	**$15,987,327**

Equipment			
Equipment	$520,000		
Sales Tax	$46,280		
Non-Taxable Items	$0		
Equipment Subtotal	**$566,280**	**Equipment Subtotal Escalated**	**$638,141**

Artwork			
Artwork Subtotal	**$102,389**	**Artwork Subtotal Escalated**	**$102,389**

Agency Project Administration			
Agency Project Administration Subtotal	$813,811		
DES Additional Services Subtotal	$65,000		
Other Project Admin Costs	$105,000		
Project Administration Subtotal	**$983,811**	**Project Administration Subtotal Escalated**	**$1,108,657**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$18,375,032**	Total Project Escalated	**$20,580,140**
		Rounded Escalated Total	**$20,580,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$2,743,626	$300,000	$2,400,000	$43,626	**$0**
Construction					
Construction Subtotal	$15,987,327			$15,987,327	**$0**
Equipment					
Equipment Subtotal	$638,141			$638,141	**$0**
Artwork					
Artwork Subtotal	$102,389			$102,389	**$0**
Agency Project Administration					
Project Administration Subtotal	$1,108,657			$1,108,657	**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$20,580,140**	**$300,000**	**$2,400,000**	**$17,880,140**	**$0**
	$20,580,000	**$300,000**	**$2,400,000**	**$17,880,000**	**$0**
Percentage requested as a new appropriation			**12%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)

Consultant Services for Design and Construction Documents

Insert Row Here

What has been completed or is underway with a previous appropriation?

Predesign Report was underway and completed in the 2023-2025 Biennium.

Insert Row Here

What is planned with a future appropriation?

Remaining Consultant Services, Construction, Equipment, Artwork and Project Administration.

Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$285,000			
Other				
Insert Row Here				
Sub TOTAL	**$285,000**	**1.0728**	**$305,748**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$741,448			69% of A/E Basic Services
Specialty & Site design	$195,000			New Master Plan coord
Tribal Coordination	$50,000			GEO2102
Sub TOTAL	**$986,448**	**1.0905**	**$1,075,722**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$30,000			
Geotechnical Investigation	$25,000			
Commissioning	$50,000			
Site Survey	$5,000			
Testing	$10,000			
LEED Services	$45,000			
Voice/Data Consultant	$20,000			
Value Engineering	$15,000			
Constructability Review	$10,000			
Environmental Mitigation (EIS)	$5,000			
Landscape Consultant	$65,000			
Lighting Consultant	$30,000			
Audiovisual Consultant	$10,000			
Interior Design	$95,000			
Building Envelope Consultant	$45,000			
Value Engineering Support	$10,000			
Constructability Participation	$5,000			
Energy Life Cycle Cost Analysis	$10,000			
Life Cycle Cost Analysis	$35,000			
Models & Renderings	$15,000			
Full Fire Protection Design	$10,000			
Environmental Consulting	$45,000			
Reimbursable Expenses	$15,000			
Cultural Design Consulting	$125,000			
Sub TOTAL	**$730,000**	**1.0905**	**$796,065**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$333,114			31% of A/E Basic Services
HVAC Balancing	$25,000			

Staffing				
Comissioning Support	$20,000			
Cultural Design Construction Review	$5,000			
Sub TOTAL	**$383,114**	**1.1269**	**$431,732**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$119,228			
Other				
Insert Row Here				
Sub TOTAL	**$119,228**	**1.1269**	**$134,359**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$2,503,790**		**$2,743,626**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$238,960			
G20 - Site Improvements	$441,992			
G30 - Site Mechanical Utilities	$269,400			
G40 - Site Electrical Utilities	$396,000			
G60 - Other Site Construction	$45,000			
Design Cont	$278,270			
OP	$116,874			
Sub TOTAL	**$1,786,496**	**1.1085**	**$1,980,331**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1085**	**$0**	
3) Facility Construction				
A10 - Foundations	$345,147			
A20 - Basement Construction	$0			
B10 - Superstructure	$1,213,750			
B20 - Exterior Closure	$1,227,080			
B30 - Roofing	$577,884			
C10 - Interior Construction	$638,850			
C20 - Stairs	$0			
C30 - Interior Finishes	$617,498			
D10 - Conveying	$0			
D20 - Plumbing Systems	$318,685			
D30 - HVAC Systems	$1,181,064			
D40 - Fire Protection Systems	$75,000			
D50 - Electrical Systems	$875,545			
F10 - Special Construction	$0			
F20 - Selective Demolition	$0			
General Conditions	$900,000			
Built in Equipment/Casework	$521,714			
Design Cont	$1,518,443			
O&P	$637,746			
Sub TOTAL	**$10,648,406**	**1.1269**	**$11,999,689**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$12,434,902**		**$13,980,020**	

	$829		*$932 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$621,745			
Other				
Insert Row Here				
Sub TOTAL	**$621,745**	**1.1269**	**$700,645**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1269**	**$0**	
9) Sales Tax				
Sub TOTAL	**$1,162,115**		**$1,306,662**	
CONSTRUCTION CONTRACTS TOTAL	**$14,218,762**		**$15,987,327**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings	$250,000				
F10 - Special Construction	$150,000				
IT Equip/computers/printers	$120,000				Design & Construction
Sub TOTAL	**$520,000**		**1.1269**	**$585,988**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.1269**	**$0**	
3) Sales Tax					
Sub TOTAL	**$46,280**			**$52,153**	
EQUIPMENT TOTAL	**$566,280**			**$638,141**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$102,389				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$102,389**		**NA**	**$102,389**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$813,811				
Additional Services	$65,000				Tribal Coord.
EWU Tribal Liaison	$55,000				Design & const. support
Specialty construction	$50,000				
Subtotal of Other	*$105,000*				
PROJECT MANAGEMENT TOTAL	**$983,811**		**1.1269**	**$1,108,657**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1085**	**$0**	

Green cells must be filled in by user

C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

Availability of Space/Campus Utilization Template

Project name:	Lucy Covington Center	CBS/OFM Project #:	40000071
Institution:	Eastern Washington University	Category:	Growth - Standalone
Campus/Location:	Cheney, WA		

Enrollment

2023 fall on-campus student FTE:	8,680	Expected 2024 fall on-campus student FTE:	8,246
		% increase budgeted:	-5.00%

Enter the average number of hours per week each for (a) classroom seat and (b) classroom lab is expected to be utilized in Fall 2024 for the campus where the project is located.

(a) General University Classroom Utilization		(b) General University Lab Utilization	
Fall 2023 Weekly Contact Hours	60,425	Fall 2023 Weekly Contact Hours	11,565
Multiply by % FTE Increase Budgeted	-5.00%	Multiply by % FTE Increase Budgeted	-5.00%
Expected Fall 2024 Contact Hours	57,404	Expected Fall 2024 Contact Hours	10,987
Expected Fall 2024 Classroom Seats	6,415	Expected Fall 2024 Class Lab Seats	996
Expected Hours per Week Utilization	**8.9**	**Expected Hours per Week Utilization**	**11.0**
HECB utilization standard (hours/GUC seat)	22.0	HECB utilization standard (hour/GUL seat)	16.0
Difference in utilization standard	-59.3%	Difference in utilization standard	-31.1%

If the campus does not meet the 22 hours per classroom seat and/or the 16 hours per class lab HECB utilization standards, describe any institutional plans for achieving the utilization standard.

Eastern Washinton University finds itself in a similar situation as so many other Universities around the nation in a post-pandemic environment. During this time while the focus needs to remain on increasing enrollment, it is vitally important to invest in current facilities so that they continue to serve students, do not fall into disrepair, and are designed to meet future demands, technologies, and teaching pedagogies. In order to achieve this, EWU has embarked on a number of studies to best determine future actions which may range from strategic investment in facilities and/or contracting in others. Some of that work is summarized below.

SRA - In 2022, the University began a Strategic Resource Allocation (SRA) process which entailed a systematic, collaborative, and transparent process to examine the ways resources are being invested. As a regional comprehensive university, it is EWU's goal to ensure that academic programs are best aligned to meet regional workforce needs, and university services aligned in such a manner as to ensure the student experience is meaningful and campus resources are efficient, effective, and sustainable. The process culminated in 2024 and measures are being put into place to make the University as efficient as possible, including physical improvements, consolidation, and/or reductions where facilities are no longer effectively serving the University.

Strategic Planning – Eastern Washington University is in the process of a Strategic Planning effort to guide the direction and growth of Eastern Washington University. By systematically assessing strengths, weaknesses, opportunities, and threats, EWU will articulate a clear vision for the future and establish well-defined goals. This process enables the University to align its resources, expertise, research endeavors, and educational programs effectively.

CCMP – EWU has just started the process to develop a Comprehensive Campus Master Plan (CCMP) to replace the previous plan that was completed in 2014. Recognizing the unique character, current physical and financial conditions, program and space needs, and growth during the past 10 years and projected into the future, the CCMP will be a guiding document to inform decisions for the next 10 years regarding development, growth, consolidation, etc. This document will include and be informed by numerous other studies that are recently completed or underway: SRA, Strategic Plan, Decarbonization Plan, Climate Resiliency and Sustainability, CCMP, Geothermal Studies, Housing Plan, Currently Planned Construction and Renovation Projects, and Predesign Studies.

Reasonableness of Cost Template

Project name:	Lucy Covington Center	CBS/OFM Project #:	40000071
Institution:	Eastern WA University	Category:	Growth - Standalone
Campus/Location:	Cheney, WA		

	Construction Begin	Construction End	Construction mid-point	Escalation Multiplier
Construction mid-point:	November-27	November-28	May-28	1.5269

MACC from C-100: $12,434,902

	Expected MACC/GSF in 2019	Expected MACC/GSF	GSF by type	Expected MACC
Classrooms	$505	$771	2,770	$2,135,884
Instructional labs	$397	$606		$0
Research labs	$545	$832		$0
Administration	$406	$620	460	$285,161
Libraries	$340	$519		$0
Athletic	$385	$588		$0
Assembly, exhibit and meeting rooms	$497	$759	11,770	$8,931,807
			15,000	$11,352,852

C-100 to expected MACC variance: 110%

Due to specialty of construction for indigenous style construction and detailing.
HIGH END OF RANGE FOR CLASSROOMS AND ASSEMBLY USED PER TABLE 2 IN HIGHER EDUCATION FACILITY STUDY (Rev 2020)

Efficiency of space allocation. For each major function in the proposed facility (classroom, instructional labs, offices), identify whether space allocations will be consistent with the Facility Evaluation and Planning Guide (FEPG) assignable square feet standards. If any proposed allocations exceed FEPG standards, explain the alternative standard that has been used and why.

Example: efficiency of space allocation – FEPG standard

FEPG room classification number	FEPG room classification type	Project ASF per station	FEPG standard	Meets standard (Y/N)	Comments
110	Classroom	25	16-26	Y	
210	Class lab – Maker Space	25	50-75	Y	
314	Staff Offices	120	120	Y	
410	General Study Room	25	20-30	Y	Study Lounge
610	Auditorium/ lecture hall	15	15-16	Y	
620	Exhibit	25	30-40	Y	
630	Dining	25	15	N	Non-retail specialty event dining.
651	Nonpublic lounge			N/A	Sized appropriately for departmental needs

Identify the (a) assignable square feet in the proposed facility; (b) the gross square feet; and (c) the net building efficiency ("a" divided by "b").

Instructions:
Provide the facility's condition score (1 superior – 5 marginal functionality) from the 2016 Comparable Framework study, and summarize the major structural and systems conditions that resulted in that score. Provide selected supporting documentation in appendix, and reference them in the body of the proposal.

Narrative Response:
N/A

Instructions:
Identify the estimated number of additional FTE students the project is expected to enable the institution to serve when the space is fully occupied. Describe the method by which additional FTEs are calculated, including an analysis of probable student enrollment demand from project completion to full occupancy. Also provide an estimate of the number of additional FTE enrollments in high-demand fields and the fields in which such growth is expected to occur.

Per RCW 43.88D.010(1)(a), growth projects must also demonstrate that they can more cost- effectively provide enrollment access than alternatives such as university centers and distance learning.

Narrative Response:
Projecting full-time equivalent enrollments for this type of student support center is challenging. Below is a breakdown of the key impacts that will contribute to an increase in enrollment.

The proposed Lucy Covington Leadership House at Eastern Washington University (EWU) will have a significant impact on increasing enrollment and retention rates of American Indian students by addressing the specific challenges this group faces in higher education. Here's an analysis of the key impacts:

1. Enhanced Sense of Belonging and Cultural Visibility

- **Increased Enrollment**: By creating a dedicated space that fosters a sense of belonging and cultural pride, the Lucy Covington Leadership House would provide American Indian students with a visible and supportive environment. This may attract prospective students from Indigenous communities who otherwise may not have considered EWU due to feelings of cultural invisibility or a lack of representation. A space that celebrates the life of Lucy Covington and tribal sovereignty could help potential students feel that their heritage and identity are valued.
- **Improved Retention**: The presence of a community hub and resources specifically for American Indian students could improve retention rates by addressing cultural, social, and academic needs. Research shows that students who feel connected to their community and supported by their institution are more likely to persist and complete their education.

2. Support Services Tailored to Indigenous Students

- **Academic Support**: The American Indian Student Center, academic advising services, and flexible learning spaces would provide students with the academic resources they need to succeed. Tailored advising and mentorship from faculty who understand the unique challenges faced by Indigenous students can make a substantial difference in helping them navigate the university system.
- **Leadership Development**: The focus on leadership and the legacy of Lucy Covington aligns with cultivating leadership skills in American Indian students, empowering them to take on leadership roles both within their communities and beyond. This aspect may encourage students to enroll at EWU, knowing they will have opportunities to grow both academically and personally in a supportive environment.

3. Community and Cultural Engagement

- **Inter-tribal Collaboration**: The facility would serve as a hub for cultural exchange and collaboration among different Indigenous communities, enhancing the educational and cultural experience of American Indian students. This focus on community engagement could further strengthen relationships with local tribes and encourage members of these communities to pursue higher education at EWU.
- **Cultural Celebrations and Exhibitions**: The exhibit hall showcasing Lucy Covington's legacy and other tribal cultures would create opportunities for students to connect with their heritage and share their culture with the broader campus community. This could reduce feelings of isolation and invisibility, which are common barriers for Indigenous students in higher education.

4. Strategic Alignment with EWU's Goals

- The project aligns with EWU's strategic plan to promote inclusivity, equity, and student success. By addressing the barriers faced by underrepresented students, specifically American Indian students, the Lucy Covington Leadership House directly supports the university's mission to close equity gaps in education.
- This initiative can serve as a model for other institutions looking to create more inclusive environments for Indigenous students, further enhancing EWU's reputation as a leader in promoting diversity and equity.

5. Long-term Impact on Campus Diversity

- **Increased Campus Diversity**: The creation of the Lucy Covington Leadership House could contribute to the overall diversity of EWU's student body. As the university becomes known for its commitment to supporting Indigenous students, it may attract a more diverse student population, which benefits the entire campus by fostering a more inclusive and culturally rich environment.
- **Safer and More Inclusive Campus Environment**: The project's focus on fostering community and reducing the need for ad-hoc interventions will likely lead to a more harmonious and supportive campus, which benefits all students. A safer, more inclusive environment can also contribute to higher retention and satisfaction rates across the student population.

6. Potential for Program Expansion

- Although the current project does not include space for expanded programs, it leaves room for future growth, such as instructional areas for American Indian Studies and Salish language programs. This potential for expansion could enhance the academic offerings at EWU, further attracting students interested in Indigenous studies and language preservation.

Conclusion

The Lucy Covington Leadership House has the potential to make a transformative impact on enrollment and retention of American Indian students at Eastern Washington University. By addressing the cultural, academic, and community needs of Indigenous students, the project would not only reverse declining enrollment trends but also create a more inclusive and supportive environment that fosters long-term student success. Additionally, it aligns with EWU's broader strategic goals and represents a meaningful investment in both the universities and the students' futures.

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Date Run: 9/10/2024 12:45PM

Project Number: **40000071**
Project Title: **Lucy Covington Center**

Description

Starting Fiscal Year: 2022
Project Class: Program
Agency Priority: 5

Project Summary

Eastern Washington University requests funding to construct the proposed Lucy Covington Leadership House, an approximately 15,000-square-foot facility that will serve as a center to support the success of Native American students at the university and beyond. The facility is designed to foster a sense of community and ease students' transition from home to the university setting. It will feature cultural and community gathering areas, event spaces, student collaboration and support spaces, as well as exhibit galleries and performance areas. The project will advance the goals of Eastern Washington University's Lucy Covington Initiative by honoring Lucy Covington's legacy and providing dedicated support for American Indian students, reinforcing the university's commitment to regional tribes.

Project Description

What is the problem/opportunity? Identify: priority, underserved people/communities, operating budget savings, public safety improvements & clarifying details. Preservation projects: include information about the current condition of the facility/system.

The priority of this initiative is to enhance the educational experience for American Indian students at EWU by honoring the legacy of Lucy Covington, a prominent advocate for tribal sovereignty and self-determination. The project seeks to build a space that not only supports the academic and cultural needs of Indigenous students but also serves as a hub for inter-tribal collaboration, cultural exchange, and community engagement. By focusing on these priorities, the Lucy Covington Leadership House aims to create an environment where American Indian students can thrive, develop leadership skills, and connect with their cultural heritage.

In operating budget savings and public safety improvements, the preferred alternative for the Lucy Covington Leadership House represents a strategic investment in physical and cultural infrastructure. The proposed facility, with its focus on student support, community gathering, and cultural exhibitions, will likely lead to long-term savings by reducing the need for ad-hoc support services and interventions that might be required. Moreover, the creation of a space that fosters community and cultural pride can contribute to a safer and more inclusive campus environment, reducing the potential for conflicts and promoting a sense of belonging among all students. The detailed design and planning process, including the consideration of alternative solutions, ensures that the project aligns with EWU's broader strategic goals while maximizing the impact of the available budget.

What will the request produce or construct (predesign/design of a building, additional space, etc.)? When will the projec start/end? Identify if the project can be phased, and if so, which phase is included in the request. Provide detailed cost backup.

The request will produce the design of the Lucy Covington Leadership House, a new15,000-square-foot, one-story building at EWU. The facility is intended to support the goals of the Lucy Covington Initiative, focusing on three primary areas: community gathering, student support, and the celebration of Lucy Covington's life and legacy. Key features of the building will include a300-seat speaking hall, a dedicated American Indian Student Center, a learning commons, a community kitchen and dining area, flexible meeting spaces, and an exhibit hall showcasing the life and cultural contributions of Lucy Covington and other tribal cultures.
The project is scheduled to start with the design phase in November 2026, following the anticipated awarding of design funding in the 2025-27 Capital Budget. If awarded design funding for this coming biennium, construction funds will be requested in the 2027 – 2029 Capital budget with substantial completion expected by November 2028 and ready for occupancy by February 2029. This timeline ensures that the project will be completed efficiently while allowing sufficient time

Description

for thorough design and construction processes.

In the future, the project could be expanded in the future to include additional spaces such as instructional program areas for an expanded American Indian Studies program, a Tribal Government program, and a dedicated Salish Language teaching space, as outlined in Alternative 1. However, this expansion would require additional capital and operational funding, which is not part of this request.

The detailed cost breakdown, included in the June 2024 Predesign Report, for the project estimates a total budget of approximately $20.4 million, with design funding request of $2.4 million in the 2025-27 Biennium and construction funding request of $18 million in the 2027-29 Biennium. This budget estimate covers all aspects of the project, from initial design to final construction, ensuring that the Lucy Covington Leadership House will be a fully functional, state-of-the-art facility upon completion.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?

By constructing a dedicated space that fosters a sense of belonging, cultural awareness, and support, the project aims to create an inclusive and supportive environment for American Indian students. The preferred alternative, which involves building a15,000-square-foot facility, is designed to bring together cultural and community gathering spaces, student support areas, and exhibition spaces that celebrate the life and legacy of Lucy Covington and American Indian cultures.

If no action is taken, the EWU strategic goals of increasing dedicated campus infrastructure to support American Indian Students would take longer to put into effect.

The Lucy Covington Leadership House represents a strategic investment that aligns with EWU’s broader mission of fostering diversity, equity, and inclusion. The preferred alternative effectively addresses the identified problems by creating a physical space that supports the academic and cultural needs of American Indian students, thereby promoting their success and retention. This facility will serve as a hub for inter-tribal collaboration, cultural exchange, and community engagement, all of which are essential for addressing the historical and ongoing challenges faced by Indigenous students in higher education. The project's detailed planning and consideration of alternatives, such as the potential for future expansion, ensure that the initiative is both impactful and financially sustainable, maximizing the benefits to the university and the American Indian communities it serves.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.

The predesign work included engagement with the Project Steering Committee, American Indian EWU students, and EWU American Indian Studies faculty. These teams considered a range of alternatives to meet the needs identified in Section 02.Alternatives that were evaluated include:
Alternative 1: Preferred Alternative: Lucy Covington Leadership House (~15,000 GSF)
Alternative 2:Full Buildout, Preferred Alternative + Future Expansion (~28,000 GSF)
Alternative 3:No Action
PREFERRED PROGRAM:LUCY COVINGTON LEADERSHIP HOUSE (15,000 GSF)
The conceptual program for the Preferred Alternative allocates approximately 10,000 net assignable square feet (NASF) for a total of approximately 15,000 gross square feet (GSF), into a single-story facility that supports the project goals described in

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Project Title: **Lucy Covington Center**

Description

Section 02, Problem Statement. The proposed Lucy Covington Leadership House brings together cultural/community gathering and event space, student support and collaboration areas, and an exhibit gallery and performance space.

The proposed building concept provides a speaking hall that accommodates up to 300 people for community and cultural events, a learning commons for studying and student collaboration, and an exhibit space featuring the life and legacy of Lucy Covington and American Indian Art and Culture.

Multiple site locations for the project were reviewed as part of the Predesign process, including replacing existing infrastructure (Isle Hall) and a currently vacant site south of Martin and Williamson Hall. The Isle Hall building presents a promising opportunity for the project. Utilizing the Isle site could lead to significant improvements in Campus Energy Use Intensity (EUI) and provide a pathway towards compliance with the Clean Building Performance Standard and HB1390. This aligns with EWU's commitment to sustainability, carbon reduction, and energy efficiency. The forthcoming campus decarbonization and master plan will provide guidance regarding siting optimization and help to determine a final location for the Leadership House. Once the project is funded, further evaluation of this site should be incorporated into the design phase.

The Preferred Alternative achieves many of the project's goals and addresses the identified problem.

ALTERNATIVE 1:FULL BUILDOUT, PREFERRED ALTERNATIVE +
FUTURE EXPANSION (~28,000 GSF)
The full buildout alternative expands the program by about 8,000 NASF for approximately13,000 additional GSF. The full buildout proposes building the 15,000 GSF Preferred Alternative along with a 13,000 GSF expansion for a total buildout of28,000 GSF.

In addition to providing cultural/ community gathering and event spaces, student collaboration and support spaces, and exhibit gallery and performance spaces, the full buildout will have instructional program spaces that expand the American Indian Studies program and introduce potential programs such as a Tribal Government program and dedicated Salish Language teaching space. There will be additional classrooms and faculty offices associated with this expansion.

Alternative 1achieves and expands upon the project's goals. It was not chosen due to the following challenges:
- Requires additional capital funding and therefore would result in a larger capital project funding request.
- Operational funding to expand academic programs as described above has not yet been procured.

ALTERNATIVE 2:NO ACTION
The No Action Alternative would not address the goals of EWU.
American Indian students would continue to use the existing American Indian Education Center building, which houses the American Indian Studies program, for meetings, studying, and socializing. Dedicated campus infrastructure could become a rate limiting factor as EWU continues to increase programming and support for American Indian students.

Additionally, Alternative2 - No Action, does not fulfill EWU's strategic mission in the following ways:
- It does not create additional dedicated space on campus for American Indian students and American Indian culture and could be become a rate limiting factor in achieving EWUs goals for increasing enrollment of students from the regions numerous Tribal nations.
- It does not fulfill one of the primary purposes of the Memoranda of Understandings between EWU and three Tribal Nations: to construct a longhouse-style facility that enhances recruitment and success of American Indian students.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

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Project Title: **Lucy Covington Center**

Description

The budget request for the Lucy Covington Leadership House primarily impacts American Indian students at EWU, as well as the broader campus community. The proposed facility is designed to address underrepresentation and declining enrollment of American Indian students by providing dedicated spaces that support their cultural, academic, and social needs.

The Preferred Alternative for the Lucy Covington Leadership House includes 15,000 gross square feet (GSF) of space, with approximately 9,690 square feet of assignable area. This facility will feature key program areas, including a Speaking Hall, Learning Commons, dining area with a community kitchen, flexible meeting spaces, and an exhibition gallery celebrating Lucy Covington's life and legacy. These spaces are intended to serve as central hubs for American Indian students, offering a place for community gatherings, academic collaboration, and cultural celebration.
The new facility will significantly enhance the visibility and support for American Indian students on campus by providing a central, accessible location that reflects Indigenous culture. This transformation of campus infrastructure dedicated to American Indian students will not only better accommodate the current student population but also aim to increase enrollment and retention by creating a welcoming and supportive environment.

Net Assignable Square Feet (NASF)
COMMUNITYGATHERING AREAS
Speaking Hall: 5,100 NASF, 52.6% of NASF
AMERICANINDIAN STUDENT CENTER
Learning Commons:1,800 NASF, 18.6%
Dining Area: 1,550 NASF, 16.0%
Flexible Meeting Space: 240 NASF, 2.5%
EXHIBITION AREAS
Lucy Covington Life & Legacy Gallery: 1,000 NASF,10.3%

Unassignable Square Feet (USF)
UNASSIGNABLE AREAS
Learning Commons: 910USF, 6.1% of GSF
Dining Area: 1,200USF, 8.0%
Flexible Meeting Space: 3,200 USF, 21.3%

Total Building Area 15,000 (efficiency 65%)

In summary, the Lucy Covington Leadership House will directly impact the American Indian student community at EWU by adding 15,000 GSF of purpose-built space, thereby helping to address the issue of underrepresentation and supporting the university's broader goals of cultural inclusivity and student success.

Does this project or program leverage non-state funding? If yes, how much by source? If the other funding source requires cost share, also include the minimum state(or other) share of project cost allowable and the supporting citation or documentation.

This project currently does not leverage non-state funding.

At this time The Lucy Covington Leadership House will be a fully State-funded project.

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Description

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

CONNECTION TOAGENCY MISSION, GOALS & OBJECTIVES

The Lucy Covington Leadership House and Lucy Covington Initiative are part of EWU's strategic plan to increase graduation rates of underrepresented students(including American Indians).

The Lucy Covington Leadership House will support this endeavor through programs and events within the facility intended to boost enrollment and retention of American Indian students.

The Lucy Covington Leadership House aligns with EWU's mission to foster an inclusive, equitable, and transformative learning environment. American Indian students at EWU often encounter barriers to accessing higher education, have a higher risk of dropping out, and lower retention rates compared to other groups. American Indian students have barriers common to first-generation, low-income, and other structurally marginalized students. EWU strives to integrate the principles of justice, equity, diversity and inclusion into all University operations to foster an environment that nurtures a sense of belonging among all members of the community.

SENSE OFBELONGING
EWU strives to foster a profound sense of belonging, actively promote and sustain equity, dismantle systemic barriers, and embrace the unique perspectives of all individuals. As a desired outcome of this goal, the Lucy Covington Leadership House will create an important space to nurture this sense of belonging for American Indian students who often commute great distances from their reservations to be at Eastern Washington University.

STUDENT SUCCESSAND STUDENT EXPERIENCE
Another important goal is to promote student success and close structural equity gaps through a holistic, people-centered, value-driven approach that prioritizes student well-being in multiple dimensions and supports students' self-exploration and self- understanding of their values, identities, cultural heritages and career paths.

As a facility dedicated to empowering and supporting American Indian students, the Lucy Covington House will be a home for American Indian students and will help them break through the systemic barriers noted above.

Does this project include IT related costs, including hardware, software, cloud based services, contracts or staff? If yes, attach IT Addendum.

This project does not fund the development or acquisition of new or enhanced software or hardware systems or services. This facility will use already established software and hardware platforms that are currently on campus.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 14 Puget Sound Recovery) in the 2025-27 Operating Budget Instructions.

Not applicable for this project.

How does this project contribute to meeting the greenhouse gas emissions limits established in RCW 70A.45.050, Clean Buildings performance standards in RCW19.27A.210, or other statewide goals to reduce carbon pollution and/or improv efficiency?

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The Lucy Covington Leadership House project is designed with strong alignment to state laws and regulations aimed at reducing carbon emissions and improving energy efficiency. Here's how it contributes to meeting the greenhouse gas emissions limits, clean buildings performance standards, and other statewide goals:

High-Performance Public Buildings (Chapter 39.35D RCW): The project is committed to high-performance building standards by targeting at least LEED Silver certification, with an ambition to achieve LEED Gold. This aligns with Chapter39.35D RCW, which promotes environmental stewardship and sustainability in public buildings. Achieving LEED certification involves using energy-efficient systems, such as energy recovery ventilators (ERVs), which enhance indoor air quality while reducing energy consumption. These measures not only lower operating costs but also support occupant productivity and well-being.

State Efficiency & Environmental Performance Requirements (Executive Order20-01): In compliance with Executive Order 20-01, the Lucy Covington Leadership House will be designed to be zero energy or zero energy capable. This includes the use of electrification technologies, such as heat pumps and solar energy systems, to minimize operational carbon emissions. The project will install a solar energy generation system capable of producing at least 7.5 kW of renewable energy, contributing to Washington State's goal of reducing reliance on fossil fuels and enhancing the sustainability of state-owned buildings.

State Energy Performance Standards for Clean Buildings (RCW 19.27A.210): Although the project is not bound by RCW 19.27A.210 due to its size (less than 50,000 gross square feet), it is still designed to exceed standard energy performance requirements. The design includes a renewable energy generation system and advanced energy-efficient technologies that align with the spirit of these standards.

Electric Vehicle Infrastructure (RCW 12.27.540): While no new parking spaces are required for this project, it will still comply with RCW 19.28 by incorporating electric vehicle charging infrastructure as needed. This infrastructure will meet Level 2 charging capacity requirements, supporting the transition to electric vehicles and reducing overall campus emissions.

Greenhouse Gas Emissions Reduction Policy (RCW 70.235.070): The project supports EWU's ambitious greenhouse gas reduction targets by incorporating strategies to minimize both operational and embodied carbon emissions. Using mass timber products, such as cross-laminated timber (CLT), significantly reduces embodied carbon emissions by up to 80% compared to traditional building materials. The project also aligns with EWU's broader goals of achieving a 45% reduction in emissions by 2030, and further reductions by 2040 and 2050. These efforts are part of a comprehensive decarbonization plan that includes transitioning away from fossil fuels, improving energy efficiency, and exploring innovative technologies.

Overall, the Lucy Covington Leadership House project is designed to significantly contribute to state and institutional goals for reducing greenhouse gas emissions, improving energy efficiency, and promoting sustainable building practices.

How does this project impact equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in communities impacted?

Impact on Equity in the State
The Lucy Covington Leadership House at EWU is a significant project aimed at addressing the inequities faced by American Indian students in higher education. By creating a space dedicated to the empowerment and visibility of American Indian students and Tribal communities, the project seeks to mitigate the historical issue of invisibility that contributes to low enrollment and retention rates among this demographic. The Leadership House will provide academic advising, student services, and a supportive environment, which are crucial for increasing the representation and success of American Indian students in higher education.

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Project Title: **Lucy Covington Center**

Description

Impacted Communities

•□□□□□□□□**Demographic Communities:**
o American Indian Students: The project directly impacts American Indian students, who are often underrepresented in higher education. This demographic faces unique barriers, including those related to first-generation status, low income, and systemic marginalization.
o Non-American Indian Students: The project also aims to engage non-American Indian students and the broader community in understanding and addressing the needs of Indigenous peoples, fostering cross-cultural understanding.

•□□□□□□□□**Geographic Communities:**
o Tribal Communities: The project impacts regional tribes, including the Coeur d'Alene Tribe, Kalispel Tribe, Spokane Tribe Colville Federated Tribes, and other tribes across the state.
o Cheney, Washington: The EWU campus in Cheney will host the Lucy Covington Leadership House, making it a focal point for American Indian students from surrounding tribal lands and reservations who often commute long distances to attend university.

•□□□□□□□□**Disparities in Impacted Communities**
o The project addresses disparities by focusing on the specific needs of American Indian students in higher education across the nation, who have experienced a decline in enrollment by 40-50% over the past 15years, contrasting with significant growth in other ethnic groups. By providing a dedicated space for cultural and academic support, the Leadership House aims to close the equity gap in higher education for American Indian students. It also aligns with EWU's mission to integrate justice, equity, diversity, and inclusion into its operations, thereby fostering a sense of belonging and promoting student success across all dimensions of their university experience.
.

Is this project eligible for Direct Pay? If yes, include this project in the Direct Pay Form for inclusion to capital budget request submittal (see Chapter 1.7 of the capital budget instructions for additional instructions).

This project may be eligible for Direct Pay for the generation of solar electricity and has been included on the attached Direct Pay Form

Is there additional information you would like decision makers to know when evaluating this request?

Lucy Covington, a pivotal figure in tribal rights and American Indian history, played a crucial role in preserving **tribal sovereignty** and **self-determination** through her leadership. Her legacy continues at EWU with the **Lucy Covington Leadership House**, a project designed to address the **underrepresentation** of American Indian students in higher education. This facility aims to foster a **sense of belonging**, improve **student retention**, and serve as a hub for cultural exchange and academic support. The project aligns with EWU's strategic goals and its commitment to regional tribes, reflecting a broader effort to honor Covington's contributions and promote **cross-cultural understanding.**

REAPPROPRIATION: If the project was originally funded prior to the 2021-23 biennium, describe the project and each subproject, including the original appropriation year, status of the project and an explanation why a reappropriation is needed.

NA

Location
City: Cheney **County:** Spokane **Legislative District:** 009

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:45PM

Project Number: 40000071
Project Title: Lucy Covington Center

Description

Project Type

New Facilities/Additions (Major Projects)

Growth Management impacts

No growth management impacts are associated with this project.

New Facility: No

How does this fit in master plan

The Master Plan is underway and will be finished in 2025. It will be used to inform this project to make sure the best location is determined.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	2025-27 Fiscal Period New Approps
057	State Bldg Constr-Unknown					
057-1	State Bldg Constr-State	20,280,000				2,400,000
061-1	EWU Capital Projects-State	300,000	62,000	168,000	70,000	
	Total	**20,580,000**	**62,000**	**168,000**	**70,000**	**2,400,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057	State Bldg Constr-Unknown				
057-1	State Bldg Constr-State	17,880,000			
061-1	EWU Capital Projects-State				
	Total	**17,880,000**	**0**	**0**	**0**

Operating Impacts

Total one time start up and ongoing operating costs

Acct Code	Account Title	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
FTE	Full Time Employee	1.0	1.0	1.0	1.0	1.0
001-1	General Fund-State	73,000	73,000	73,000	73,000	73,000
	Total	**73,000**	**73,000**	**73,000**	**73,000**	**73,000**

Narrative

Additional support would be required for operating, maintaining, and cleaning new building area.

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Capital Project Request

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000071	40000071
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:46PM

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

Description

Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 15

Project Summary

Minor Works - Program - 057 State Bonded funds - Eastern Washington University is requesting funding in this category to improve academic and student services programmed spaces and buildings. This will allow improved access and better outcomes for students at the university.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Program projects primarily achieve academic and student support goals. This group of projects include updating and improving spaces that are needed to improve program delivery. Included are items that improve access to,and the quality of the program spaces in which instruction takes place.

Eastern Washington University is requesting $6,150,000 in this category to address those areas that will increase the life of building system and invest in state facilities. Subprojects consist of Academic Program Enhancements (classroom upgrades), Teaching Laboratory Improvements, Sports and Recreation program upgrades, and Renewal of restrooms in the Communication Building.

These projects will significantly improve the spaces and their functionality. The also address compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations. These projects were identified through evaluation of our current systems by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for improvements.Once staff had captured the needs and budgetary costs to respond, we prioritized these projects to improve and extend the lifecycle of our systems and equipment and to reduce the maintenance and operating cost for the university.

Eastern’s facilities are complex and costly resources to maintain and operate. These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs’ student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University’s Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.

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Project Title: **Minor Works - Program - 057**

Description

Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature the are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This will request will scope design and construction implementation many subprojects that will improve campus facilities systems and building. There are no predesign studies required for this level of minor works program projects. These projects reflect the need of upgrading existing spaces, equipment, or systems to extend the useful lifecycle of portions of or the entire facility. In most cases the only new square feet added would be determined by local jurisdiction have authority requiring addition space.

These projects will start as soon as the appropriations are approved (approximately July 2023) with the intent of completing the project prior to the end of the biennium (June 2025). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
The primary goal of program projects is to improve the ability for student instruction and student activity support through renewal of those spaces. Better delivery methods and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority.

As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
The process for developing these projects requests a based up campus and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since

Description

funding is continually a challenge, the alternate below are considered and we work through the problem solving process.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time. Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

Description

3) Align facilities with academic purpose and need
4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report

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Capital Project Request

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:46PM

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

Description

> Americans with Disabilities Act - 2010 Design Standards
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

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Version: 24 EWU Capital Budget

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Project Number: 40000119
Project Title: Minor Works - Program - 057

Description

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rate and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Program (Minor Works)

Growth Management impacts
Not Applicable

New Facility: No

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
057-1	State Bldg Constr-State	5,300,000				5,300,000
	Total	**5,300,000**	**0**	**0**	**0**	**5,300,000**

		Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
These projects are in existing facilities and replace and upgrade existing equipment and systems. There are already operation funds in place in these locations.

SubProjects

SubProject Number: 40000139
SubProject Title: Minor Works Program - Academic Support Space Improvements

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Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000139**
SubProject Title: **Minor Works Program - Academic Support Space Improvements**

Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 15

Project Summary

Minor Works Program - Academic Support Space Improvements - This request primarily focus on instruction classroom (FICM 110). The project is to develop of better classroom utilization program and improve those space that need improvement to assist better and more comprehensive class scheduling.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Many of the academic spaces in buildings that have not been renovated in the past 20 years and lack the necessary tools to be effective in a modern university education environment. Deficiencies include inadequate lighting, Heating, Ventilation and Air Conditioning (HVAC) and temperature controls, audio/visual equipment, acoustical treatments, functional furnishings, and upgrading finishes. Selected academic spaces require certain features that were not common or possible in the year that their locations were built, such as marker boards versus chalkboards, video projection systems versus overhead projectors, and Internet-driven computer systems versus photo slides and map displays. Pursuant to the University's goals of providing the highest quality education to its students, these enhancements would change the most updated learning environments on our campus to be state-of-the-art. Not only would it serve our current student population but would also assist in both student and faculty recruitment.

This request is to improve academic program instructional spaces, 110 Classrooms, on Eastern's Cheney campus. This request is for $2,000,000.

The improvements made to the spaces over the years were only of portion of the needs so, many no longer meeting a current standard for safety, operational efficiency, or educational functionality. The building systems needed for state-of-the-art instruction is simply lacking in our classrooms that have not received upgrades in the last decade.

These projects will significantly improve academic instructional spaces and their functionality. The also address compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations. These projects were identified through evaluation of our current systems by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for improvements.

A portion of the project will also evaluate the classroom inventory and campus capacity. Eastern's needs to improve its classroom utilization rates to meet and exceed the state standards. Size, configuration, and quality of the instruction spaces will be evaluated and those spaces that cannot meet the minimums for utilization rates will be remove from the scheduling inventory to be used for other non-academic use. Eastern's facilities are complex and costly resources to maintain and

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000139**
SubProject Title: **Minor Works Program - Academic Support Space Improvements**

operate.

These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature they are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc.

This will request will scope design and construction implementation many subprojects that will improve campus facilities systems and building. There are no predesign studies required for this level of minor works program projects. These projects reflect the need of upgrading existing spaces, equipment, or systems to extend the useful lifecycle of portions of or the entire facility. In most cases the only new square feet added would be determined by local jurisdiction have authority requiring addition space.

When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
Receiving approval of this request would result in the renovation of key academic spaces in a number of buildings on our campus. Many of these improvements would require upgrades to the infrastructure systems serving the buildings that the spaces are located in. Such systems include but not limited to HVAC, electrical, data and telecommunications.

Upon receiving funding approval, programming and design would be conducted to identify the greatest areas of need and the maximum benefits derived from remodeling. Depending upon the results of the studies, designs would be created prior to

SubProjects

SubProject Number: 40000139
SubProject Title: Minor Works Program - Academic Support Space Improvements

the implementation of construction.
The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Constructing the necessary improvements would not only correct the deficiencies identified above but would also improve the learning environment to a degree that enhances the academic careers of our students and faculty. Taking no action places our degree programs at a disadvantage in the competition for highly sought-after students and qualified faculty, not to mention that it perpetuates a less-than-optimum learning environment. he primary goal of program projects is to improve the ability for student instruction and student activity support through renewal of those spaces. Better delivery methods and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority.

As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. Academic spaces that do not meet minimums for academic instruction degrade the learning environments and reduce the utilization rates for the entire campus. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
The process for developing these projects requests are based on campus and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since funding is continually a challenge, the alternate below are considered and we work through the problem-solving process.

Program projects primarily achieve a programmatic goal, such as changing or improving an existing space to meet program requirements or creating a new facility or asset through construction. In most cases the systems and equipment addressed in these requests are at the end or past then end of their lifecycle and are in need of upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goal

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000139**
SubProject Title: **Minor Works Program - Academic Support Space Improvements**

that could cause other high-cost damage.

Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.

Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.

Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?

There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives

1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles

Project Number: 40000119
Project Title: Minor Works - Program - 057

SubProjects

SubProject Number: 40000139
SubProject Title: Minor Works Program - Academic Support Space Improvements

The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> Americans with Disabilities Act - 2010 Design Standards
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:46PM

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000139**
SubProject Title: **Minor Works Program - Academic Support Space Improvements**

> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
High quality facilities are "key" to positive student outcomes. These project are directly related to improving student outcomes for the university. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region

OFM

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
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Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000139**
SubProject Title: **Minor Works Program - Academic Support Space Improvements**

We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion ratee and building community.

Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 15

Project Summary

Minor Works Program - Teaching Laboratories - FICM 210 Teaching Laboratories provide critical specialty instruction space for labs that support academic programs and degree production. This request will prioritized those area that need significant improvements to support our academic strategic plan.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Many of the teaching laboratories at Eastern (FICM 210) are lacking the features and infrastructure necessary to support the pedagogical and program needs of the departments they serve. Many of these such facilities were constructed over 40 years ago, more than a generation before the advent of the technology currently available for teaching. Most of our facilities are not even constructed to the standards that the high schools from which our students came from.

Many of these spaces in buildings that have not been renovated in the past 20 years and lack the necessary tools to be effective in a modern university education environment. Deficiencies include inadequate lighting, Heating, Ventilation and Air Conditioning (HVAC) and temperature controls, audio/visual equipment, acoustical treatments, functional furnishings, and upgrading finishes. Selected academic spaces require certain features that were not common or possible in the year that their locations were built, such as marker boards versus chalkboards, video projection systems versus overhead projectors, and Internet-driven computer systems versus photo slides and map displays. Pursuant to the University's goals of providing the highest quality education to its students, these enhancements would change the most updated learning environments on our campus to be state-of-the-art. Not only would it serve our current student population but would also assist in both student and faculty recruitment.

This request is to improve and upgrade teaching labs (FICM 210) on Eastern's Cheney campus. This request is for $1,300,000.

The improvements made to the spaces over the years were piecemeal at best, many no longer meeting a current standard for safety, operational efficiency, or educational functionality. The infrastructure systems needed for state-of-the-art instruction

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000140**
SubProject Title: **Minor Works Program - Teaching Labortories**

is simply lacking in our classrooms that have not received upgrades in the last decade. This request will be directed to laboratory spaces defined by FICM (Postsecondary Education Facilities Inventory and Classifications Manual) Teaching Laboratory 210.

A space used primarily for formally or regularly scheduled instruction (including associated mandatory, but non-credit earning laboratories) that require special purpose equipment or a specific space configuration for student participation, experimentation, observation, or practice in and academic discipline. A space is scheduled if the activities generate weekly student contact hours (WSCHs), the activities fulfill course requirements, and/or there is formal convener present.

These projects will significantly improve academic teaching laboratory spaces and their functionality. Projects also address compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations. These projects were identified through evaluation of our current systems by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for improvements.

A portion of the project will also evaluate the 210-teaching laboratory inventory and campus capacity (Utilization Rates). Eastern's needs to improve its laboratory utilization rates to meet and exceed the state standards. Size, configuration, and quality of the instruction spaces will be evaluated and those spaces that cannot meet the minimums for utilization rates will be remove from the scheduling inventory to be used for other non-academic use.

Eastern's facilities are complex and costly resources to maintain and operate. These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic

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SubProject Title: Minor Works Program - Teaching Labortories

programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature they are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc.
This will request will scope design and construction implementation of many projects that will improve campus facilities systems and building. These projects reflect the need of upgrading existing spaces, equipment, or systems to extend the useful lifecycle of portions of or the entire facility. In most cases the only new square feet added would be determined by local jurisdiction have authority requiring addition space.

There are no predesign studies required for this level of minor works program projects.

When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
Receiving approval of this request would result in the renovation of key academic spaces in several buildings on our campus. Many of these improvements would require upgrades to the building systems serving the spaces they are located in. Such systems include but not limited to HVAC, electrical, data and telecommunications.

Upon receiving funding approval, studies would be conducted to identify the greatest areas of need and the maximum benefits derived from remodeling. Depending upon the results of the studies, designs would be created prior to the implementation of construction.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Improving the FICM 210 teaching laboratories would greatly aid in our recruitment of both students and faculty, help maintain our accreditations, and enhance the educational experience for all students. Current conditions are deterrent to all those points listed above, the adverse effects of which continue to be greater as the demands for higher technology increase with time.

The result of taking no action will decrease the effectiveness of our instruction, general student spaces to meet our strategic needs, and cause the cause some upgrades related to accessibility and inclusion to not be completed. Some spaces that are deteriorating will continue to do so and their operating costs will continue to rise. This includes regular preventative action as well as demand maintenance. Most of the facilities and space upgrades would include more cost-effective system and

SubProjects

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SubProject Title: Minor Works Program - Teaching Labortories

equipment upgrades. If this was to be deferred, the level of utility cost reduction that could be achieved wouldn't be attained. Deferring will also impact the ability to provide a safe, comfortable, and accessible campus for all that use it.
As is the case with reduction of approved funding, the university will prioritize the highest needed project and defer other as required. In many cases it will be an additional burden on our operation budgets.

Constructing the necessary improvements would not only correct the deficiencies identified above but would also improve the learning environment to a degree that enhances the academic careers of our students and faculty. Taking no action places our degree programs at a disadvantage in the competition for highly sought-after students and qualified faculty, not to mention that it perpetuates a less-than-optimum learning environment. he primary goal of program projects is to improve the ability for student instruction and student activity support through renewal of those spaces. Better delivery methods and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
The process for developing these projects requests is based on campus and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since funding is continually a challenge, the alternate below are considered and we work through the problem-solving process.

Program projects primarily achieve a programmatic goal, such as changing or improving an existing space to meet program requirements or creating a new facility or asset through construction. In most cases the systems and equipment addressed in these requests are at the end or past then end of their lifecycle and need upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. The response is based upon review of many alternates and proactively addressing the needs of the university and its academic and student-based programs to continue to succeed and meet the goal
.
Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

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Capital Project Request

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Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000140**
SubProject Title: **Minor Works Program - Teaching Labortories**

Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

Project Number: **40000119**
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SubProjects

SubProject Number: **40000140**
SubProject Title: **Minor Works Program - Teaching Labortories**

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> Americans with Disability Act - 2010 Design Standards
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially

SubProjects

SubProject Number: 40000140
SubProject Title: Minor Works Program - Teaching Labortories

committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
Minor Works Program projects allow for providing rapid response to programmatic changes and the dynamic needs of the university. While major projects are years in development, these smaller projects offer the opportunity to make changes that positively affect students and the college environment in a shorter time frame. These projects also put in place improvements that will bridge department and programs until major project funding is available.

Good planning, system renewal, and minor capital improvements allow for long term reduction of operating costs, emergency or catastrophic failures and extend the lifecycle of mission critical systems for the university. The university continues to capture and prioritize Minor Works so that when funds become available, we can assign them to projects that are most critical to our operation and complete them in a timely manner. Continual deferring of the critical projects could cause premature, catastrophic, and costly failures. Minor projects reduce the frequency of emergencies and cost less on a long-term basis.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000140**
SubProject Title: **Minor Works Program - Teaching Labortories**

and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion ratee and building community.

Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 15

Project Summary

Minor Works Program - Sports and Recreations Center - This preservation project is to correct energy management deficiencies in the Sport and Recreation Center on Eastern's Cheney Campus.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Eastern Washington University includes an athletic facility known as the Sports and Recreation Center (SRC) as it was constructed in several phases in the late 1960's through the early 70's. The SCR consists of an Aquatics Facility, Jim Thorpe Fieldhouse, P.E. Activities building, P.E. Classroom building and the Pavilion (Reese Court), totaling approximately 305,000 square feet. A substantial portion of the Phase has never undergone any upgrades and still operates with 1960-70's HVAC equipment, electrical lighting, and electrical systems.

EWU's priority request is a significant opportunity to both programmatic space and improve energy performance and reduce both energy costs and emissions. Each building is unique, and only an energy audit can determine the most effective measures to save electricity and gas. EWU is currently performing the energy audit in support of this capital request and the energy modeling is to be completed summer of 2022. EWU is directing emphasis at implementing high performance HVAC, LED Lighting, lighting control systems, building automation, energy management system, utility metering and building envelopes, such as insulation, windows, doors, and roofs.

EWU is requesting $2,000,000 for the Programmatic and Energy Improvement for the Sports and Recreation Center. Bringing our buildings current conditions into compliance with the Washington state requirements in energy efficiency, natural gas preservation & reduction of GHG green-house gas emissions is a key strategic goal

Problem or opportunity - This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of

Project Number: **40000119**
Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000141**
SubProject Title: **Minor Works Program - Sports and Recreations Center**

failure. This is an opportunity for EWU to move in the direction of the university's sustainability goals. Preservation projects maintain, preserve, and extend the life of existing state facilities and assets and do not significantly change the facility and building footprint to address current or anticipated program changes

These projects will significantly improve the spaces and their functionality. The also address compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations. These projects were identified through evaluation of our current systems by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for improvements.

Operation Budget Savings – Energy Savings. EWU's priority request for the Phase Energy Savings Improvements project will provide, tenant comfort, HVAC and lighting control, LED lighting, utility and end use metering, energy & systems analytics, energy reporting, HVAC optimization, fault detection & diagnosis, predictive maintenance, reporting, measurement & verification of building efficiencies.

Once staff had captured the needs and budgetary costs to respond, we prioritized these projects to improve and extend the lifecycle of our systems and equipment and to reduce the maintenance and operating cost for the university.

Eastern's facilities are complex and costly resources to maintain and operate. These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

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Project Title: Minor Works - Program - 057

SubProjects

SubProject Number: 40000141
SubProject Title: Minor Works Program - Sports and Recreations Center

Although requested projects are programmatic, in nature, they are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This request will scope design and construction implementation of HVAC retrofit or replacement, high efficiency LED lighting, lighting controls, building automation systems, energy management systems, modernize buildings envelopes. There are no predesign studies required for this level of minor works projects as EWU is currently conducting an Energy Audit & Building Energy Modeling strategy of the Sports and Recreation facility.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
Not acting in the modernization and integration will affect the reliability of maintaining and monitoring older buildings that have not yet been upgraded and will hinder operations and energy management, moreover EWU's commitment to state regulations compliance, campus efficiency and sustainability goals will not have been met.

This is an opportunity for EWU to move nearer to sustainability commitments, reduce energy consumption and GHG green-house gases. The primary goal of program projects is to improve the ability for student instruction and student activity support through renewal of those spaces. Better delivery methods and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority.

As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
The process for developing these projects requests based upon building and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since funding is continually a challenge, the alternate below are considered and we work through the problem-solving process.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to

SubProjects

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extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.

Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.

Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.

Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.

Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Minor works projects this size do not require a predesign study.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.

This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?

There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives

Project Number: **40000119**
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1) Represent the “DNA of EWU”—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their

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effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> Americans with Disabilities Act (ADA) - 2010 Design Standards
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
High quality facilities are "key" to positive student outcomes. These project are directly related to improving student outcomes for the university. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation

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Capital Project Request

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Project Title: **Minor Works - Program - 057**

SubProjects

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SubProject Title: **Minor Works Program - Sports and Recreations Center**

We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region

We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion ratee and building community.

Location

City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009

Project Type

Program (Minor Works)
Program (Minor Works)
Program (Minor Works)

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Project Title: Minor Works - Program - 057

SubProjects

SubProject Number: 40000139
SubProject Title: Minor Works Program - Academic Support Space Improvements

Growth Management impacts
Not Applicable

New Facility: No

Growth Management impacts
Not Applicable

New Facility: No

Growth Management impacts
Not Applicable

New Facility: No

Funding

Acct Code	Account Title	Expenditures: Estimated Total	Prior Biennium	Current Biennium	2025-27 Fiscal Period: Reapprops	New Approps
057-1	State Bldg Constr-State	2,000,000				2,000,000
057-1	State Bldg Constr-State	1,300,000				1,300,000
057-1	State Bldg Constr-State	2,000,000				2,000,000
	Total	**5,300,000**	**0**	**0**	**0**	**5,300,000**

Acct Code	Account Title	Future Fiscal Periods: 2027-29	2029-31	2031-33	2033-35
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
057-1	State Bldg Constr-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

No Operating Impact

No Operating Impact

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Project Title: **Minor Works - Program - 057**

SubProjects

SubProject Number: **40000139**
SubProject Title: **Minor Works Program - Academic Support Space Improvements**

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

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Capital Project Request

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000119	40000119
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:46PM

Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

Description

Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 16

Project Summary

Minor Works - Program - 061 - Local Capital funds - Eastern Washington University is requesting the use of local capital funds to make improvement and renewals and academic and student support areas of the Cheney Campus.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

Program projects primarily achieve academic and student support goals. This group of projects include updating and improving spaces that are needed to improve program delivery. Included are items that improve access to and the quality of the program spaces in which instruction takes place.

Eastern Washington University is requesting $6,000,000 in this category to address those areas that will increase the life of building system and invest in state facilities. Subprojects consist of Campus Americans with Disabilities Act (ADA) improvments, Classroom Technology Upgrades, Emergent needs and Program Remodels.

These projects will significantly improve the spaces and their functionality. The also address compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations. Projects were identified through evaluation of our current systems by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for improvements.

Once staff had captured the needs and budgetary costs to respond, we prioritized these projects to improve and extend the lifecycle of our systems and equipment and to reduce the maintenance and operating cost for the university.

Eastern's facilities are complex and costly resources to maintain and operate. These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high

Description

quality, student-centered education to a diverse population of almost 11,000 students. Almost 35% of the student population is first-generation university students and almost 32% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature the are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This request will scope design and construction implementation for many projects that will improve campus facilities systems and buildings. There are no predesign studies required for this level of minor works program projects. These projects reflect the need of upgrading existing spaces, equipment, or systems to extend the useful lifecycle of portions of or the entire facility. In most cases the only new square feet added would be determined by local jurisdiction have authority requiring addition space.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
The primary goal of program projects is to improve student outcomes by improving instructional and student activity spaces by renewal. Better delivery methods and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority.

As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
The process for developing these projects requests a based up campus and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since funding is continually a challenge, the alternate below are considered and we work through the problem solving process.

Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

Description

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need

Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

Description

4) Promote a campus environment that “feels like home” for EWU student
5) Coordinate with funding— “the plan must make sense”

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern’s commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU’s neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> Americans with Disabilities Act (ADA) - 2010 Design Standards
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems

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Version: 24 EWU Capital Budget

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Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

Description

> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
High quality facilities are "key" to positive student outcomes. Easter ern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

OFM

370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
Date Run: 9/10/2024 12:46PM

Project Number: 40000201
Project Title: Minor Works: Program 061 2025-27

Description

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion rates and building community.

Location
City: Cheney **County:** Spokane **Legislative District:** 009

Project Type
Program (Minor Works)

Growth Management impacts
Not Applicable

New Facility: No

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
061-1	EWU Capital Projects-State	4,000,000				4,000,000
	Total	**4,000,000**	**0**	**0**	**0**	**4,000,000**

Acct Code	Account Title	Future Fiscal Periods 2027-29	2029-31	2031-33	2033-35
061-1	EWU Capital Projects-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

Narrative
These project are replacement and upgrade to existing facilities and systems that already have funds assigned to their operations.

SubProjects

SubProject Number: 40000202
SubProject Title: Minor Works Program - Classroom Improvements

Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

SubProjects

SubProject Number: **40000202**
SubProject Title: **Minor Works Program - Classroom Improvements**

Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 16

Project Summary

Minor Works Program - Classroom Renewal - High quality student outcomes are enhance by high quality instructional and programmatic spaces. This request is to renew and update program spaces provide the best "access" to our students to meet our strategic goals.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

High quality instructional space are necessary for modern student instruction. Some of our auditorium style classrooms were upgraded in the late 1990s. Although they included many new electronic features, they have all fallen out of date because of the rapid evolution of the technology equipment industry. Other classroom issues also need improving and renovation such as lighting, sound attenuation, furnishings, flooring, and classroom specialties. To keep pace with the changes of our times, Eastern must constantly be changing the amenities offered in our classrooms. A great number of students come from high schools whose classrooms are better equipped than those at our university. The academic success of our students is, in many ways, tied to the facilities they are instructed in. This is never truer than in the area of technology.

This request is to design, improve and remodel existing classroom technology on Eastern's Cheney campus. This request is for $1,000,000.

This request is a priority due to the significant percentage of our classrooms that still have antiquated technology such as old projectors, overhead projectors mounted on carts utilizing wall-mounted pulldown projector screens. Room lighting, lighting controls, acoustics, HVAC. This all factors into the equation when designing spaces for modern technology. These deficiencies are intended to be addressed as well as purchasing and installing new equipment. Other amenities such as surface finishes, flooring, acoustical treatment and window treatment would be addressed as the budget allows.

These projects will significantly improve the spaces and their functionality. The also address compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations.

Projects were identified through evaluation of our current systems by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for improvements.

Once staff had captured the needs and budgetary costs to respond, we prioritized these projects to improve and extend the lifecycle of our systems and equipment and to reduce the maintenance and operating cost for the university.

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370 - Eastern Washington University
Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

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Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

SubProjects

SubProject Number: **40000202**
SubProject Title: **Minor Works Program - Classroom Improvements**

Eastern's facilities are complex and costly resources to maintain and operate. These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature they are developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
Following a survey of our existing facilities, we have gone through classrooms having the greatest priority for improvement and in the greatest need of deficiencies to correct. These spaces will be remodeled and retrofitted to utilize state-of-the-art instructional technology. Classroom equipment, infrastructure upgrades, and furnishings systems will comprise the majority of the project.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?

Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

SubProjects

SubProject Number: **40000202**
SubProject Title: **Minor Works Program - Classroom Improvements**

Technology is a substantial component of the current higher education learning environment. The university must keep pace with the educational market to recruit and retain quality students for programs and degrees. Without implementing these improvements Eastern will lose the opportunity for high degree production, reduce time to degree completion and have impacts to our enrollment.

System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluates all alternatives including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goal of our strategic plans.

As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
The process for developing these projects requests a based up campus and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since funding is continually a challenge, the alternate below are considered and we work through the problem solving process.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

Project Number: 40000201
Project Title: Minor Works: Program 061 2025-27

SubProjects

SubProject Number: 40000202
SubProject Title: Minor Works Program - Classroom Improvements

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 – Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

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SubProjects

SubProject Number: 40000202
SubProject Title: Minor Works Program - Classroom Improvements

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> Americans with Disabilities Act (ADA) - 2010 Design Standards
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

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370 - Eastern Washington University
Capital Project Request

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Project Number: 40000201
Project Title: Minor Works: Program 061 2025-27

SubProjects

SubProject Number: 40000202
SubProject Title: Minor Works Program - Classroom Improvements

Is there additional information you would like decision makers to know when evaluating this request?
High quality facilities are "key" to positive student outcomes. Easter ern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change
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We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion ratee and building community.

Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 16

Project Summary
Minor Work Program - Emergent Needs - These are projects that are emergency in nature our that surface with opportunities to be dynamic and flexible in supporting items that appear but that are not forecasted.

Project Description

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Capital Project Request

2025-27 Biennium

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Version: 24 EWU Capital Budget

Report Number: CBS002
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Project Number: 40000201
Project Title: Minor Works: Program 061 2025-27

SubProjects

SubProject Number: 40000204
SubProject Title: Minor Work Program - Emergent Needs

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.

This request addresses the situations where university needs arise that are unanticipated and unforeseen. Every biennium, careful planning and consideration goes into each request for funding but the dynamics of managing the entire campuses facilities cannot account for those needs that arise sometimes past the time of capital requests. Looking back at each of the past five biennia, Eastern Washington University has found itself in situations where needs arise that were not foreseen. Often the needs do not align with specific requested minor work funds, but the opportunity is critical to take advantage of. The other item is the fact that unforeseen catastrophic conditions impact the university and one or more of its facilities that needs to be addressed to continue normal operations. Those are the type of projects that fall under Emergent Need.

This request is for Emergent and non-planned needs on Eastern's Cheney campus. This request is for $1,500,000.

In other instances, there have been shifts in instructional programs that require minor remodeling. In modern languages, for example, there was a recent change from audio cassette learning stations to computer-driven systems. Where the change was obviously beneficial to the programs initiating it, it placed an undue burden on our facilities infrastructure that required significant additions and alterations to accommodate.

Even though these issues are unplanned they still significantly improve the spaces and their functionality or respond to emergency situations. The also address compliance issues that are required due to the age of these facilities. The responses are priority based identification of on-going needs, review and prioritization of campus programs and the needs to support academic instruction and university operations These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces.
Once staff had captured the needs and budgetary costs to respond, we would assign emergent need resources to the project and move ahead to repair or construction implementation.

Eastern's facilities are complex and costly resources to maintain and operate. These program request enhance facilities and allow us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:
Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional

SubProjects

SubProject Number: 40000204
SubProject Title: Minor Work Program - Emergent Needs

college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature, once identified, they will be developed and a designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
Where these changes are unforeseen, specific details of what will be produced cannot be given. What can be anticipated is that these needs will arise and there will need to be funds in place to meet them. The projects that we would address sometimes surface in between the time of our request and the start of the biennium giving the University time to structure a plan for execution. Phasing will be a matter of the number and types of projects the University will undergo. It is not likely that the entire requested amount will go towards a single project (although there is always that potential). It is most likely that several projects will be addressed in this category and will be constructed across the entire time span of the 2023-2025 biennium.

This will request will scope design and construction implementation many subprojects that will improve campus facilities systems and building. There are no predesign studies required for this level of minor works program projects. These projects reflect the need of upgrading existing spaces, equipment, or systems to extend the useful lifecycle of portions of or the entire facility. In most cases the only new square feet added would be determined by local jurisdiction have authority requiring addition space.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction will be identified and prioritized and phased so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
By funding these types of program contingencies, the University is positioned to meet the changing needs of our educational and support departments. It enables us to keep pace with emerging technologies, pedagogical shifts, increasing enrollments, and successes in marketing. It would avoid the situation where opportunities to support the University's mission and to enhance the education experience would be missed or delayed due to lack of funding.

The results of not acting on these items increase emergency funding required for catastrophic system failures and continue to raise the cost of regular maintenance on critical systems and equipment. The primary goal of program projects is to improve the ability for student instruction and student activity support through renewal of those spaces. Better delivery methods and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university

SubProjects

SubProject Number: 40000204
SubProject Title: Minor Work Program - Emergent Needs

leadership priority.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Emergent program needs are non-planned and unforeseen projects that occur after priorities are set and detailed project requests are already requested. Even so when these needs emerge the university still would review the alternates and make the best decision for use of the resources allowed.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

Although evaluated at the time alternative 5 would be the likely response to keep operations open and working and to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Project Number: 40000201
Project Title: Minor Works: Program 061 2025-27

SubProjects

SubProject Number: 40000204
SubProject Title: Minor Work Program - Emergent Needs

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
No.

Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
No.

If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes,

Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

SubProjects

SubProject Number: **40000204**
SubProject Title: **Minor Work Program - Emergent Needs**

please elaborate.

Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

This project is designed to address the necessary replacement of infrastructure systems and components that are past their effective lifecycle, are costly to operate because of age and technology, and are at risk of failure. Completion of these projects will update compliance with a variety of state and local jurisdictional requirements including:
> House Bill 1257 Clean Building Act
> State of Washington Energy Code
> Americans with Disabilities Act (ADA) - 2010 Design Standards
> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both demographic and geographic communities. How are disparities in the communities impacted?

At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?

Quality buildings and spaces are critical to provide positive outcomes for Eastern students. Emerging needs are a fact of operating a facility like Eastern Washington University. Having the ability to respond quickly to minor equipment and systems failures responds to the students needs to instruction and keeps the university from disruption their educational journey.

Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning. Student outcomes are clearly a response to the strategy of:

We ignite change

Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

OFM

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Capital Project Request

2025-27 Biennium

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We embrace equity and social justice
We are recognized as a model diversity-serving institution. We embrace changing demographics and changing societal needs. Through culturally responsive curricula and campus activities, we work tirelessly to promote understanding and reduce disparity and inequity. Communities flourish when multiple perspectives converge to create a powerful vision for all. EWU fosters a campus life that is vibrant, welcoming, and supportive of all. We provide opportunities for open thought and dialogue. As the state's premier public diversity-serving institution, we are committed to catalyzing an equitable and inclusive climate on our campuses and in our communities.

We drive innovation
We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

We transform our Region
We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in preparing students, improving completion ratee and building community.

Starting Fiscal Year: 2026
Project Class: Program
Agency Priority: 16

Project Summary

Minor Work Program - Program Remodels - Academic spaces that support degree production and higher graduation rates are as critical. This request is for improvements to those programmatic spaces to support the university strategic plan.

Project Description

Identify the problem or opportunity addressed. Why is the request a priority? This narrative should identify unserved/underserved people or communities, operating budget savings, public safety improvements or other backup necessary to understand the need for the request. For preservation projects, it is helpful to include information about th current condition of the facility or system.
Eastern Washington University runs over 50 academic related programs each year. Because of new pedagogical means, methods and technologies, changes are necessary in several programs. In the cases where the requirements for accreditation change due to new methods of instruction or new findings based on recent research, remodeling of program space is necessary to maintain our accreditations and certifications. Classroom (FICM 110) and Teaching Labs (FICM 210) are addressed on other requests. These area are related to student research, generals non-class and laboratory functions,

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meeting and offices spaces that provide access to university students.

This request is to improve and renovate Programmatic Space on Eastern's Cheney campus. This request is for $1,500,000.

Keeping pace with peer institutions by offering programs that are on par with the higher education standards makes this request a high priority. In most cases, the students served are upperclassman close to achieving undergraduate degrees. In the programs involving engineering and technology, specialized equipment, and the infrastructure necessary to support it is ever-changing. These programs affect a large percentage of our student population pursuing degrees in those areas. In most cases these programmatic updates are in old buildings that are not slated for major upgrades for many years. Academic buildings identified are Kingston Hall, Showalter Hall, Isle Hall, Cheney Hall and Cadet Hall.

Current Facilities Condition Assessment (FCA)
1 - Superior
2 - Adequate
3 - Fair; System approaching end of expected lifecycle
4 - Needs Improvement, Limited Functionality
5 - Needs Improvement, Marginal Functionality

Buildings under consideration
Cadet Hall – Overall 2.7; Services 3.8; HVAC/Controls 4 ;Fire Protection 5; Electrical 4
Cheney Hall – Overall 2.6; Services 3.0; HVAC/controls 3.5 ;Fire Protection 5; Electrical 3
Isle Hall – Overall 3.4; Services 3.7; HVAC/controls 4; Fire Protection 4.5; Electrical 4
Kingston Hall – Overall 2.5; Services 3.1; HVAC/controls 3.75; Fire Protection 4; Electrical 3
Showalter Hall – Overall 2.6; Services 3.6; HVAC/controls 4; Fire Protection 3; Electrical 4

These projects will significantly improve the program spaces and their functionality. The also address compliance issues that are required due to the age of these facilities. The requests are priority based upon on-going assessment, review and prioritization of campus programs and the needs to support academic instruction and university operations. Projects were identified through evaluation of our current spaces by architectural engineering consultants, academic program departments and plant staff. From these assessments, we compiled a list of projects and budgetary estimated costs for review and approval. These projects are the highest priority to align facilities improvement with the current and future needs of departments and general campus spaces. In most cases, the evaluation of these requests shows the deteriorating condition of some of the spaces, systems, and equipment and how the backlog of accessibility requirements that need to be in place in our public facilities. We captured the costs to maintain and operate these facilities through our computerized maintenance management systems (CMMS) and identify those that have the highest need for improvements.

Eastern's facilities are complex and costly resources to maintain and operate. These program enhancing projects enable us to defer major capital expenditures through creative preservation measures that extend the lifecycle of our facilities and systems. We work continually to find innovative ways to maintain our facilities and manage the long-term costs of the university and state. We designed these projects to respond to the programs' student and staff needs and their ability to be maintained at a cost-effective level. These types of projects allow us to meet programmatic and current code need without major project resources.

Eastern Washington University's Core Themes include:

Project Number: **40000201**
Project Title: **Minor Works: Program 061 2025-27**

SubProjects

SubProject Number: **40000205**
SubProject Title: **Minor Work Program - Program Remodels**

Access - EWU strives to provide the opportunity for traditional college-bound students, non-traditional students, and students from underserved populations in the Inland Northwest and beyond to obtain a high-quality education and earn a marketable degree.
Learning - EWU strives to equip students with the skills and knowledge needed for them to be informed citizens of the world and successful in their chosen careers.
Completion - EWU strives to support our students to earn undergraduate and graduate degrees. EWU provides a high quality, student-centered education to a diverse population of over 12,000 students. Almost half of the student population is first-generation university students and 31% of students are from historically underrepresented ethnic backgrounds.

Eastern enhances access to higher education in the Inland Northwest and beyond by recruiting and supporting traditional college-bound students, non-traditional students and those from underserved populations; Delivering high-quality academic programs that undergo regular, rigorous review informed by data and assessment of student learning; Delivering a high-quality co-curriculum designed to develop the intellectual, cultural, personal and practical aspects of students' lives; and Promoting student success by supporting student engagement and timely degree completion.

Although requested projects are programmatic, in nature they are additionally developed and designed to address reductions in energy and operation costs, bring systems to current building code compliance, reduce any pending safety and compliance issue, and improve the operation conditions of the systems and there provide high quality instructional, research and student engagement areas on the university campus.

What will the request produce or construct (i.e., predesign or design of a building, construction of additional space, etc. When will the project start and be completed? Identify whether the project can be phased, and if so, which phase is included in the request. Be prepared to provide detailed cost backup.
This request supports the design and construction of the renewal existing academic and program support spaces for new and renovated space intended to enhance specific academic programs. Where the individual projects have yet to be identified, in detail, each biennium department provide more requests than the funding levels can support. The amount of our request is the approximate average of several past biennium's requests.

This will request will scope design and construction implementation many subprojects that will improve campus facilities systems and building. There are no predesign studies required for this level of minor works program projects. These projects reflect the need of upgrading existing spaces, equipment, or systems to extend the useful lifecycle of portions of or the entire facility. In most cases the only new square feet added would be determined by local jurisdiction have authority requiring addition space.

The project will start as soon as the appropriations are approved (approximately July 2025) with the intent of completing the project prior to the end of the biennium (June 2027). The areas of construction listed in this request have been prioritized by areas and phase so the if approved funding is less than requested a portion or smaller scope can be accomplished with resources approved. All minor works projects are structured to be completed in this manner. Current estimates are based upon unit and historic square foot cost of design and construction. A detail budget for each area or project will be developed when design in undertaken and that information is available for review as necessary.

How would the request address the problem or opportunity identified in question 1? What would be the result of not taking action?
As needs arise, this request would enable the University to respond to those needs on a case-by-case basis, upholding our commitment to quality education through our course offerings and special programs. In some cases, it would result in

SubProjects

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SubProject Title: Minor Work Program - Program Remodels

remodeling space, in other cases providing the infrastructure necessary to support new equipment sometimes obtained through outside funding sources (i.e., grants, donations, etc.).

The primary goal of program projects is to improve the ability for student instruction and student activity support through renewal of those spaces. Better delivery methods and quality spaces result in better student outcomes. These outcomes are part of our strategic plan and university leadership priority.

As is objectively the case, to not take actions will continue the degradation system and building conditions and operations. The costs for operations, including energy costs will continue to increase. Systems that can exceed their designed lifecycle become prime candidates for catastrophic failures that can substantially impact university student and staff. Strategic planning for upgrades, improvements and replacements can avoid many problems that negative impact university offering and operating costs.

What alternatives were explored? Why was the recommended alternative chosen? Be prepared to provide detailed cost backup. If this project has an associated predesign, please summarize the alternatives the predesign considered.
Program projects achieve a programmatic goal, such as changing or improving an existing space to meet program requirements or creating a new facility or asset through construction. In most cases the systems and equipment addressed in these requests are at the end or past then end of their lifecycle and need upgrading or replacement. System and equipment failure is not a productive alternative. Continuing to apply restricted operating funds to failing equipment and systems is not good use of state resources. Other more cost-effective alternatives are always considered due to the lack of available resources. The university evaluate all alternative including deferring the projects to a later date. The analysis is based upon the needs of the university and its academic and student-based programs to continue to succeed and meet the goal of our strategic plan.

The process for developing these projects requests is based upon campus and program needs to have improved student outcomes. A variety of consideration are examined to develop the best return on the investment in these areas. Since funding is continually a challenge, the alternate below are considered and we work through the problem-solving process.

Alternative 1) Renovation of the entire facility- major project renovation. The goal of minor works projects like these are to extend building and systems lifecycles so that major project with major cost is not necessary now. Also, if systems in the facilities have lifecycle left it is more cost effective to preserve the system with value rather than demolish them in a major renovation. This is good stewardship of state assets and resources.
Alternative 2) Defer the work – Deferring the work can mitigate capital costs, but older less efficient system and facilities cost more to operate and maintain than newer more efficient facilities. There is also risk of catastrophic breakdowns or failures that could cause other high-cost damage.
Alternative 3) Taking the space or system off-line until funding is available. – The spaces/system listed in this request are high priority in nature to the safety, security, and operations of this institute of higher education. In most cases shutting down parts of structures in not an alternative to the university.
Alternative 4) Do nothing – This alternative is the worst-case scenario because it combines the downside of items 2 and 3. Space is not available, can become unusable, may be a safe and security issue or failure could cause more damage to other system and building operations.
Alternative 5) Renewal or replacement of a portion of the system or facility. This alternative is selected because it meets the short term needs of the students and the university, it will increase the life expectancy of systems and equipment in this facility, reduce cost of maintenance, reduce the cost of energy by replacing equipment with higher efficiency equipment. This alternative meets the needs and intent of minor works projects.

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Alternative number 5 has been considered and will proceed as the best-case scenario to balance high capital costs, potential reduction is instructional delivery, risking catastrophic failure and increasing the value and lifecycle of university facilities.

At this point in the planning process the budgets have been established on historical cost per square foot analysis. More detailed programming and budget modeling will be completed when funding is approved. Those detail budgets will be available for review at that time.

Which clientele would be impacted by the budget request? Where and how many units would be added, people or communities served, etc.
This budget request would most likely provide a positive impact to our upper-level courses that utilize special spaces and equipment in Kingston Hall, Communications, Art, Theatre, Digital Media, Music, Cadet and Cheney Hall.

Programs such as math, engineering, technology, fine arts, modern languages, and physical education are heavily dependent upon uniquely equipped facilities.

This project serves the university community. That include our customers, students, as well as the faculty and staff that serve the student on their scholastic career. Because Eastern is a public university our campus also supports the local and region community. As stated under the problem or opportunity to be addressed, the university core themes are improved, and we improve our facilities. Since these projects are improvements, replacement, and upgrades there would be no new units added but the opportunities for growth and increasing the access for people will increase.

Will other funding be used to complete the project? How much, what fund source, and could the request result in matching federal, state, local or private funds?
There are not matching federal, state, local or private funds associate with this request.

Describe how this project supports the agency's strategic master plan or would improve agency performance. Reference feasibility studies, master plans, space programming and other analyses as appropriate.

Strategic Plan – University core themes are listed above.

Facilities Master Plan 2014 - Objectives
1) Represent the "DNA of EWU"—supporting student access, opportunity, and personal transformation
2) Be flexible—able to respond to changes in technology, pedagogy, and student demographics
3) Align facilities with academic purpose and need
4) Promote a campus environment that "feels like home" for EWU student
5) Coordinate with funding— "the plan must make sense"

Facilities Planning Principles
The analysis of the campus, past planning studies, and input from EWU students, faculty, and staff identified the following principles to guide the master plan:
1) Carefully evaluate each project regarding renovation vs. replacement opportunities.
2) Plan and implement to optimize utilization and efficiency of buildings/facilities square footage.
3) All projects, major or minor reflect Eastern's commitment to reduction of the campus carbon footprint, reducing energy

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costs, reducing maintenance and operations commitments, and increasing the lifecycle of related systems and of the facility in its entirety.
4)Improve the overall character of the campus with the implementation of each project.
5) Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries.
6) Reinforce and improve the overall cohesion of campus, specifically linkages across campus.

For IT-related costs: Does this project fund the development or acquisition of a new or enhanced software or hardware system or service?
This project does not fund the development or acquisition of new or enhanced software or hardware system or service. This facility will use already established software and hardware platforms on campus.

Does this decision package (DP) fund the acquisition or enhancements of any agency data centers? (See OCIO Policy 184 for definition.)
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Does this DP fund the continuation of a project that is, or will be, under OCIO oversight? (See OCIO Policy 121.) If the answer to any of these questions is yes, continue to the IT Addendum and follow the directions to meet the requirement for OCIO review.
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If the project is linked to the Puget Sound Action Agenda, describe the impacts on the Action Agenda, including expenditure and FTE detail. See Chapter 12 (Puget Sound Recovery) in the 2011-21 Operating Budget Instructions.
This project is not linked to the Puget Sound Action Agenda.

Does this project contribute to statewide goals to reduce carbon pollution and/or improve energy efficiency? If yes, please elaborate.
Yes, when systems or equipment is upgraded, Eastern addresses the efficiency of the new equipment or system upgrades to reduce carbon emissions, conserve energy, and reduce overall operating costs. Planning and design for these projects will meet or exceed current Washington State Energy Code WAC 51-11C. We also review design and implementation against our Climate Action Plan and Washington State requirements for reduction of greenhouse gas emissions RCW 70.235.

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> RCW 39.35D High Performance Public Buildings – high efficiency components and systems
> RCW 43.19.668; 669; 670; 682 Energy Conservation – high efficiency components and systems
> EWU Energy Efficiency Sustainability Report
> EWU Climate Action Plan
> EWU Campus Infrastructure Renewal Plan
> Americans with Disabilities Act (ADA) 2010 version

How is your proposal impacting equity in the state? Which communities are impacted by this proposal? Include both

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demographic and geographic communities. How are disparities in the communities impacted?
At Eastern Washington University, we are committed to a campus climate that welcomes and respects diversity. These efforts are championed by our campus leadership and the Office for Diversity and Inclusion. EWU is a microcosm of society reflecting diversity of people, ideas, beliefs, and philosophies.

Expanding opportunity for all students by providing critical access to first generation students, underserved populations, place-bound students, and other students who may not have the opportunity for higher education. We are especially committed to educating first-generation college students and those from underserved communities. One of our strategic planning initiatives is to work toward the federal designation of a Hispanic Serving Institution (HSI). For an institution to qualify as an HSI, it must have at least a 25% Latinx/Hispanic student population. Our strategic goal is to be designated an HSI by 2023.

Is there additional information you would like decision makers to know when evaluating this request?
High quality program and support spaces are critical to exception outcomes for our students. Eastern encourages student to explore their futures though experimental, multidisciplinary, impact-oriented learning.
Student outcomes are clearly a response to the strategy of:

We ignite change
Eastern Washington University engages a diversity of students and ignites generational transformation. We inspire students through engaged learning experiences that encourage pathways to graduation. We collaborate with families, employers, and communities to solve complex issues and improve quality of life. Created as the public higher education institution for this region, EWU is committed to meeting current and emerging needs. We recognize the evolution of our communities, and we lead collaborative efforts for sustainable growth and development.

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We invest in the faculty and staff—as well as the tools, resources, and opportunities—that promote interdisciplinary collaboration and innovative instruction. We celebrate faculty and staff who make extraordinary contributions to our students and our mission. EWU drives the change that promotes social and technological advancement, environmental and economic sustainability, and community health. Our curricula and our collaborations are designed strategically to create a prosperous future.

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We develop curricula that meet changing needs of students, employers, and communities. We commit to applied research and community partnerships that engage and inspire while preparing students for success after graduation. We develop the professional workforce and strengthen our economy through strategic and creative programming.

Eastern's curricula and experiences inspire and engage. The facilities on the Cheney campus are a key component in

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preparing students, improving completion ratee and building community.

Location

City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009
City: Cheney	**County:** Spokane	**Legislative District:** 009

Project Type
Program (Minor Works)
Program (Minor Works)
Program (Minor Works)

Growth Management impacts
Not Applicable

New Facility: No

Growth Management impacts
Not Applicable

New Facility: No

Growth Management impacts
Not Applicable

New Facility: No

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Current Biennium	2025-27 Fiscal Period Reapprops	New Approps
061-1	EWU Capital Projects-State	1,000,000				1,000,000
061-1	EWU Capital Projects-State	1,500,000				1,500,000
061-1	EWU Capital Projects-State	1,500,000				1,500,000
	Total	**4,000,000**	**0**	**0**	**0**	**4,000,000**

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SubProjects

SubProject Number: 40000202
SubProject Title: Minor Works Program - Classroom Improvements

		Future Fiscal Periods			
		2027-29	2029-31	2031-33	2033-35
061-1	EWU Capital Projects-State				
061-1	EWU Capital Projects-State				
061-1	EWU Capital Projects-State				
	Total	**0**	**0**	**0**	**0**

Operating Impacts

No Operating Impact

No Operating Impact

No Operating Impact

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

Narrative

These projects are upgrades and replacements of existing equipment and building systems that already have operating resources assigned.

Narrative

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Parameter	Entered As	Interpreted As
Biennium	2025-27	2025-27
Agency	370	370
Version	24-A	24-A
Project Classification	*	All Project Classifications
Capital Project Number	40000201	40000201
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

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2025-23 Biennial Capital Budget Request

Tab F – Direct Pay Form

Direct Pay Form

Purpose: To collect a list of capital project request that may qualify for direct pay. Please refer to Section 1.7 of the OFM Capital Budget Instructions for more information. If you have questions about these instructions or capital project eligibility, contact your assigned OFM budget advisor.

Agency Name: Eastern Washington University

Budget (Capital, Transportation, Operating)	Program/Subprogram Name	Item/Project #	Project Title	Eligible for Direct Pay (Yes/No)	If Column E = No -- stop here	Identify Portion Eligible	Amount of Eligible Portion	Tax Credit Category (select option)	Planned Completion Date	Notes
Capital		40000113	Martin-Williamson Hall	Yes		TBD			2029 for Ph-1 2031 for Ph-2	Portions of builidng infrastructure related to the use of new ground source heat pump energy and solar electricity generation may be eligible. Eliligibility will be detemined during design.
Capital		40000158	EWU Geothermal Plant - Node 1	Yes		TBD			2027	Project will generate new renewable energy from ground source heat pumps for campus heating. Total project eligibitliy/benefit will be determined during design.
Capital		40000156	CEB - Applied Engineering	Yes		TBD			2029	Portions of builidng infrastructure related to the use of new ground source heat pump energy and solar electricity generation may be eligible. Eliligibility will be detemined during design.
Capital		40000071	Lucy Convington Center	Yes		TBD			2029	Portions of builidng infrastructure related to solar electricity generation may be eligible. Eliligibility will be detemined during design.
Capital		40000159	CEB - Decarbonization	Yes		TBD			2027	Portions of builidng infrastructure related to the use of new ground source heat pump energy may be eligible. Eliligibility will be detemined during design.
Capital		40000161	Art Complex - Decarbonization	Yes		TBD			2027	Portions of builidng infrastructure related to the use of new ground source heat pump energy may be eligible. Eliligibility will be detemined during design.
Capital		40000163	JFK Library - Decarbonization	Yes		TBD			2027	Portions of builidng infrastructure related to the use of new ground source heat pump energy may be eligible. Eliligibility will be detemined during design.
Capital		40000165	Sutton Hall - Decarbonization	Yes		TBD			2027	Portions of builidng infrastructure related to the use of new ground source heat pump energy may be eligible. Eliligibility will be detemined during design.
Capital		40000167	Huston Hall - Decarbonization	Yes		TBD			2027	Portions of builidng infrastructure related to the use of new ground source heat pump energy may be eligible. Eliligibility will be detemined during design.

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Attachments for Reference – Ref 1

EWU Hydro-Geological (Geothermal) Feasibility Study

EWU Ground Source Heat Pump Evaluation

EWU Decarbonization Plan – Prelim Capital Request Report

EWU Campus Hydro-Geological Assessment

Open-Loop Ground-Source Heat Pump Feasibility Study

Eastern Washington University

Cheney, WA

January 08, 2024

FINAL REPORT

LANDAU ASSOCIATES

WNR GROUP

MSI ENGINEERS

Background

PURPOSE

This report provides the technical, economic, environmental and regulatory assessment of utilizing the existing Grande Ronde aquifer, present deep below the Eastern Washington University campus in Cheney, WA, for the feasibility and economic viability of converting the university's district heating and cooling system to Ground-Source based Heat Pump systems (GSHPs).

GOAL

The primary goal of this report is to provide EWU with information on one possible pathway to reducing fossil fuel use at the existing campus central heating (and cooling) plant, with the ultimate goal of achieving an Energy Efficient, Zero-Carbon campus.

"HYDRO-GEOLOGICAL" vs "GEOTHERMAL" ASSESSMENT

What's the difference?

The primary distinction between the term "hyrdo-geological" and "geothermal" is mostly semantics, in that, even though more commonly used in these sorts of studies, the term "geothermal" suggests fairly warm, if not very hot, ground water is present and available. The term "thermal", suggests abundant heat from the earth for direct heating of buildings (or electric generation) is possible. This, however, is not normally the case, except in certain special and isolated areas, such as Yellowstone Park, areas of California and some other select areas in the West, as well as certain parts of Iceland, Indonesia and the Philippines. Most of these readily available geothermal sources have already been identified and utilized to produce fossil fuel free heating or electrical generation, or both. In the case of EWU, there is really no geothermal, meaning very hot, ground water present or available, which, if it were, would make the transition away from traditional fossil fuel based heating, much more economically viable.

So, for the purposes of this report, the more appropriate term that will be used is "hydro-geological" assessment. As such it will be looking at the availability of, and characteristics of, the existing aquifer (hydro) ground (geological) water that is present in the earth beneath the EWU campus. The feasibility of using this ground water for the purpose of heating and/or cooling the EWU campus buildings, as this aquifer acts as a heat-source or heat-sink for efficient operation of ground-source heat pump systems, will be analyzed in detail.

REPORT INDEX

This document was prepared by, or under the direct supervision of, the technical professional noted below:

Report Prepared by:

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MSI Engineers

Report Reviewed by:

Aaron Donnely, PE – Principal,
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Background

WHAT IS A GROUND-SOURCE HEAT PUMP SYSTEM?

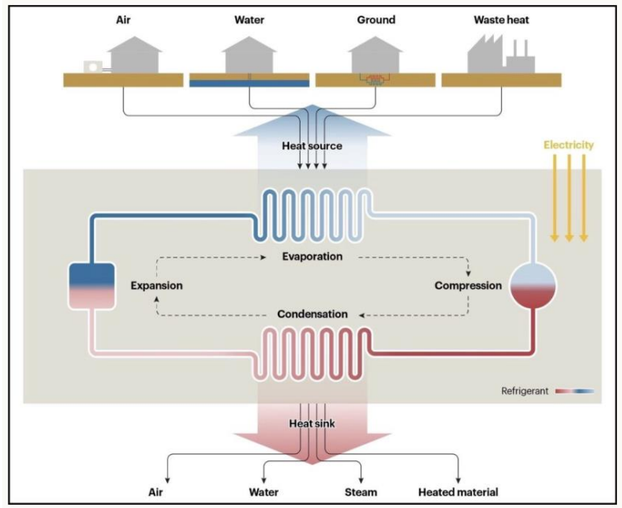
A ground-source heat pump system is an electric energy based heating and cooling system, rather than a fossil fuel based system, that uses the earth as a source of stable “energy” for extracting or rejecting heat to (i.e. heat sink or heat source), for the purpose of heating or cooling buildings. Although there are other possible heat pump based systems that utilize the ambient outdoor air, rather than the earth, as the heat source or heat sink, using the earth is considered more efficient, since the thermal mass is much more dense than air, and the typical 50 to 60 deg. F ground temperatures are also more stable than the air, which can vary well over 100 deg. F throughout the seasons.

WHY STUDY A GROUND-SOURCE HEAT PUMP SYSTEM?

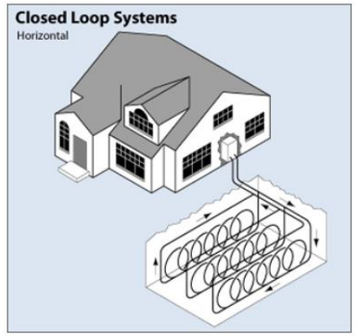
Because ground-source heat pump systems are powered by electricity, and are considered highly efficient, more so than alternative air-source type heat pumps, they can greatly reduce or eliminate completely, the combustion of fossil fuels on site for the purpose of heating buildings. This, therefore, allows for a potential significant reduction in the emission of greenhouse gases (GHGs) at the campus level.

WHAT IS THE DIFFERENCE BETWEEN OPEN-LOOP AND CLOSED-LOOP WELLS?

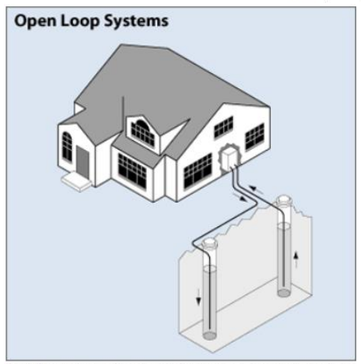
Closed-loop heat pump systems circulate water through buried piping to exchange heat with the ground, whereas open-loop type systems pump water directly in and out of the earth, from an available aquifer source. The nature of heat transfer requires closed-loop type systems to utilize a significant number of expensive vertical wells, or large open fields for shallow horizontal loops, whereas open-loop type systems, which use water directly, instead of relying on heat transfer to the earth, only required a few wells. This allows for an economy of both scale and space constraints, especially in the context of a college campus, where open space for multiple wells or heat transfer fields is extremely limited.



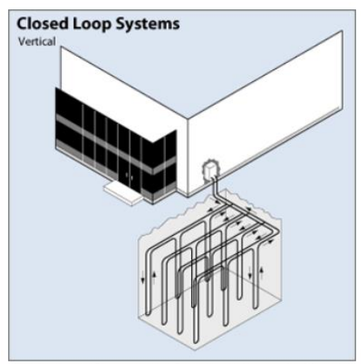
Heat pumps use electricity to compress a refrigerant, raising its temperature. IEA



Horizontal configuration of a ground-coupled heat pump system



Configuration of a groundwater heat pump system



Vertical configuration of a ground-coupled heat pump system

Process and Findings

ASSESSMENT PROCESS

- The groundwater aquifer below the EWU campus, was investigated and characterized by the consulting firms of Landau Associates and WNR Group, Inc, with hydrogeologists having expertise and experience in the nature of Eastern Washington aquifers and water rights.
- Existing literature, available aquifer testing data, and well logs from the Cheney area were used to develop estimates of the aquifer properties, potential well yield, and preliminary well design.
- Based on three theoretical well water use scenarios for the campus GSHP systems, the viability of water extraction and reinjection was estimated, along with possible thermal degradation/migration impacts, in order to establish reasonable well sizes, depths, spacing and pumping requirements.
- The complete and detailed Hydro-Geological Assessment can be found in the Appendix of this report:
    - *Eastern Washington University Ground Source Heat Pump Evaluation, by Landau Associates and WNR Group, dated January 08, 2024.*
- Using the open-loop well design requirements from the above assessment, cost estimates for the three campus system scenarios were developed, in order to help quantify the environmental impact and economic viability of these systems.
- The various well costs were then coupled with cost estimates for installing and operating ground-source heat pump systems in the three campus scenarios that were analyzed. These were then compared against traditional district heating (fossil fuel based) and cooling systems, from the existing Rozell Energy Plant, in order to determine potential reductions greenhouse gas emissions and energy cost savings for GSHP systems.

ASSESSMENT SUMMARY, FINDINGS and CHALLENGES

- The Grande Rhonde aquifer has sufficient capacity to support open-loop type ground source heat pumps for the purpose of heating and cooling the EWU campus.
- The campus footprint is large enough to accommodate the development of enough extraction and reinjection wells, to transition the entire campus to GSHP based systems.
- Carbon savings could be significant compared to the existing fossil fuel-based district steam heating systems.
- Energy savings for GSHP systems, compared to the existing central energy plant, are tempered by the added, parasitic pumping energy needed for the open-loop well operations.
- Well costs, interconnecting infrastructure costs, and building HVAC retrofit costs required to utilize GSHP systems, will be considerable.
- Transitioning away from a single centralized energy production energy plant to decentralized, multiple, micro-district plants, will have added management, operational and maintenance costs, that are not included in this study.
- Prior to the design and installation of such GSHP systems as discussed in this report, other alternative HVAC systems, such as air-source heat pumps (which have been discussed in other studies) may provide more economical solutions for reducing carbon emissions on the EWU campus, since the costs to develop expensive well fields can be avoided. It is therefore recommended that more detailed analysis of potential GHG reducing HVAC systems and technologies be further evaluated, which compare life cycle costs vs. energy and carbon savings, prior to a final solution being selected.

Next Steps and Other Considerations

RECOMMENDED NEXT STEPS

- Review and discuss findings presented in this evaluation.
- Review possible alternative approaches or opportunities for carbon reductions on campus.
- Determine if the findings are compelling enough to justify additional, more detailed study, economics evaluation and likely environmental benefits and trade-offs.
- Develop a roadmap/playbook for implementing carbon reduction opportunities, with timelines and cost/budget estimates.
- Identify funding opportunities, including State capital monies, grants, incentives, and rebates.
- Develop a test well in order to validate preliminary hydro-geology expectations and to help better understand costs and challenges for future scalability.
- Develop alternative energy models for the planned Martin-Williamson Complex upgrade, to better understand the cost-benefits of alternative HVAC systems, such as air-source heat pumps, hybrid systems, etc.

GENERAL COMMENTARY ON GROUND SOURCE HEAT PUMP (GSHP) SYSTEMS

- The application of ground source heat pump (GSHP) systems for building HVAC applications, is attractive from both an energy efficiency and carbon reduction standpoint. Because it can eliminate the use of fossil fuel for building heating, it can achieve the ideal goal of zero-carbon operation.
- Although the costs to drill and develop the required water well networks are significant, the considerable social and environment benefits to such a system, in addition to the current regulatory requirements, make such GSHP systems attractive for further consideration, as a serious and viable option for a significant campus Greenhouse Gas (GHG) reduction strategy.

OTHER POSSIBLE CARBON REDUCTION STRATEGIES TO STUDY

- Air-Source Heat Pumps: Similar efficiencies to GSHPs most of the time. May requires supplemental heat in extreme weather. Possibly a more economical option.
- Hybrid Systems: Consider adapting/leveraging existing Central Energy Steam and Chilled water systems with building heat pumps, to optimize energy efficiency and cover the extreme weather periods, without oversizing the heat pumps.
- Green Fuels – Bio-diesel, Renewable Natural Gas & Green Hydrogen: Although so-called “Green Fuels” are not commercially viable for EWU, it may be worthy to consider advances in the development of these fuels for future applications.
- Existing Chiller Plant Optimization: Continue ongoing efforts to optimize the performance of the existing central chilled water plant, due to the fact that it is already carbon zero for campus building cooling duty, and is similar in efficiency to the proposed GSHP systems for air conditioning purposes, but without the added costs of developing the expensive well network. Consider the installation of a Thermal Energy Storage Tank, for added efficiency, and to take advantage of likely future time-of-day electric rates.
- Future Zero-Carbon Steam Production Technologies: High Temperature Heat Pumps, tied into ground-source wells as discussed in this report, combined with new generation Steam Compressors, may make it possible in the future to generate high pressure steam, using zero-carbon electric heat pumps, instead of traditional fossil fuels. Europe is leading the way in these technologies, for heavy industries that are looking for carbon-free steam for process uses. Such technologies may provide a possible bridge, as the campus transitions away from district steam heating to distributed heat pumps, but at the present time, these technologies are not widely used or available in the U.S.

GSHP System Case Studies

CASE STUDY SELECTION CRITERIA

Three (3) discrete GSHP system options were chosen for this feasibility study. These varied from one facility, to a group of several buildings, to the entire campus. The several scenarios were selected based on the idea of scaling-up the assessment from an individual building and system, as a starting point to determine viability, to a somewhat larger system, comprising a network of several nearby buildings, to the theoretical eventual conversion of the entire campus to a GSHP system.

Proposed well locations were selected to allow for the general NW to SE ground water flow direction in the Grande Rhonde aquifer, so that the reinjection wells were located “down stream” from the extraction wells, so as to minimize thermal break-through (short circuiting) over time.

CASE STUDY – 1: MARTIN-WILLIAMSON HALL GSHP SYSTEM

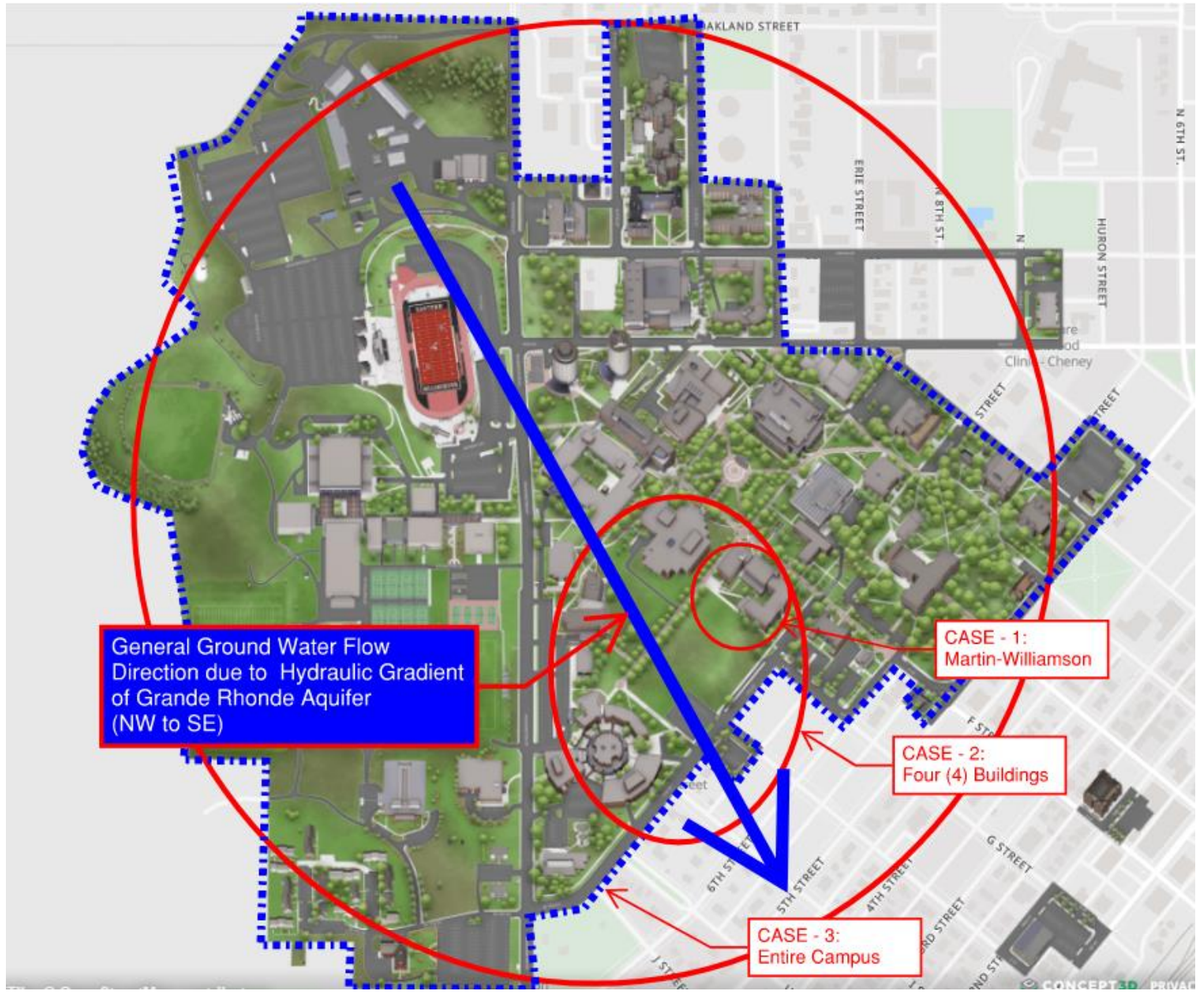
The first case to be study is based around the upcoming project involving the remodel and retrofit of the existing Martin-Williamson Hall facility. Because the existing, aging, HVAC system in Martin-Williamson Hall will be replaced with an entirely new, modern HVAC system, the application of a possible GSHP based system is a practical strategy.

CASE STUDY – 2: FOUR (4) BUILDINGS – MICRO-DISTRICT GSHP SYSTEM

Then, considering the initial M-W case as a likely starting point for the campus transition to GSHP based systems, the nearby buildings that include the JFK Library, the Computing and Engineering Building (CEB) and the Art-Theater-Music (ART) complex, were chosen as part of a so-called Micro-District Heat Transfer Center, under the second case study. This would be a facility where the proposed several open-loop system source wells would deliver the ground water to heat exchangers for the building heat pump systems, before the ground water was returned to the ground via the reinjection wells.

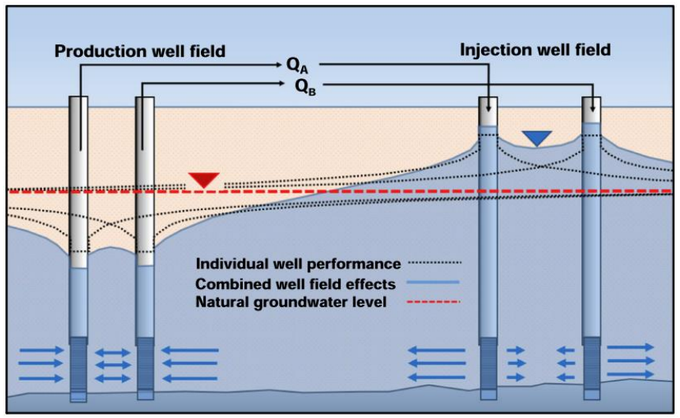
CASE STUDY – 3: ENTIRE CAMPUS – GSHP SYSTEMS

The third, and final, case study would provide a large network of source and reinjection wells, serving multiple micro-district heat transfer centers sprinkled around the campus, to support the entire campus using GSHP systems. This would be the upper boundary case in converting the whole campus to be conditioned by open-loop ground-source type heat pump systems.



Hydro-Geological Assessment | Columbina River Basalt Group (CRBG)

HYDRAULIC MODELING



GRANDE RONDE AQUIFER | EXISTING CONDITIONS

Based on analysis by Landau Associates the CRBG aquifer below EWU campus consists of two units, the Wanapum basalt unit and the Grande Ronde basalt unit. The Grande Ronde is the more productive aquifer and is the focus of the hydrogeologic assessment. The following generalizations can be made.

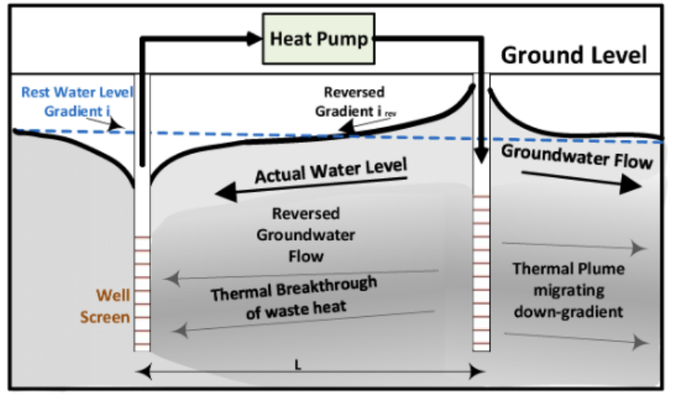
- The CRBG aquifer is present at a depth of approximately 50 to at least 1,300 ft deep.
- It is one of the primary sources for EWU and the City of Cheney.
- The Grande Rhonde portion of the CRBG aquifer is assumed to be confined or semi-confined.
- General regional groundwater flow direction is south.
- Assumed hydraulic gradient: 0.001 to 0.01.
- Estimated transmissivity 9,900 to 1,400 SF/day (Grande Rhonde unit).
- The storage coefficient is assumed to be about 0.0002.

Water rights and impacts to neighboring water users has been reviewed by WNR group. Impairment does not appear to be a project constraint. New water rights for non-consumptive use are therefore likely to be approved.

HYDRAULIC MODELING RESULTS | DESIGN FACTORS

- The aquifer can supply sufficient water to support each of the three case study scenarios proposed.
- Estimated source well pumping rates: 600 gpm to 1,500 gpm.
- Estimated pumping depths: 650 ft deep.
- Estimated draw-down: 16 ft to 87 ft.
- Recommended well spacing: 600 ft.
- Reinjection pressure: 9 to 41 psi.
- Case-1 can be supported by 1-extraction well and 1-injection well.
- Case-2 can be supported by 3-extraction wells and 3-injection wells.
- Case-3 can be supported by 10-extraction wells and 10-injection wells.

THERMAL MODELING | THERMAL BREAKTHROUGH ANALYSIS



- Simulated well-field operation over time indicates no significant thermal breakthrough of waste heat for the proposed well head spacing and seasonal usages.

GSHP Case Study Results Summary | Economic & Environmental Metrics

	BASELINE CASE **EXISTING ROZELL CENTRAL ENERGY PLANT** • HEATING: HP Steam produced by natural gas or oil-fired Boilers. • COOLING: Chilled Water produced by Water-Cooled Chillers • HEAT REJECTION: Open DT Cooling Towers	**CASE STUDY-1** **ONE BUILDING – GSHP SYSTEM: MARTIN-WILLIAMSON HALL** • Open-Loop GSHP System for Heating and Cooling • Building HVAC Retrofit/Upgrade for M-W is Already in the Planning Stages	**CASE STUDY-2** **FOUR BUILDINGS – GSHP SYSTEM: (M-W), (JFK), (CEB) & (ART)** • Open-Loop GSHP System for Heating and Cooling • Micro-District Heat Transfer Center • Building HVAC Systems would need to be Retrofit for GSHP duty	**CASE STUDY-3** **ENTIRE CAMPUS – GSHP SYSTEMS: 45 BUILDINGS, 2.5M SF** • Open-Loop GSHP System for Heating and Cooling • Multiple Micro-District Heat Transfer Centers • Most Campus Building HVAC Systems would need to be Retrofit for GSHP duty	Comments And Notes
ROM HVAC Retrofit Costs ($)		**$2.7M to $3.5M***	**$16.0M to $20.0M**	**$70.0M to $90M**	Rough Order of Magnitude Costs are conceptual in nature.
ROM Well & Infrastructure Costs ($)		**$3.2M to $3.8M**	**$9.0M $12.0M**	**$25.0M to $35.0M**	Well costs run approx. $1.5M per well, plus Elec., HT Center & distribution piping costs.
Total Costs (Avg) ($)		**$6.6M**	**$28.5M**	**$110.0M**	Prices without escalation.
Utility Cost Savings ($/yr)		**$8,000 to $12,000/yr**	**$50,000 to $75,000/yr**	**$500,000 to $700,000/yr**	Compared to Existing Central Utility Plant Services.
Heating EUI Reduction (Kbtu/SF/yr)		**~25**	**~30**	**~45**	
GHG Reduction (tons of CO2e)		**170 tons/yr = 34 gas cars**	**800 tons/yr = 160 gas cars**	**7,700 tons/yr = 1,540 gas cars**	
Zero Carbon Heating and Cooling?		**Yes**	**Yes**	**Yes**	Zero Carbon at campus usage. Grid is not yet carbon zero.
Number of Wells Required		**1 - 16” Extraction** **1 - 16” Injection**	**3 - 16” Extraction** **3 - 16” Injection**	**10 - 16” Extraction** **10 - 16” Injection**	
Well Depth/Pumping Depth (ft)		**1,050 ft/650 ft**	**1,050 ft/650 ft**	**1,050 ft/650 ft**	
Building Area Served (SF)		**87,000 SF**	**~515,000 SF**	**~2,600,000 SF**	
Target System Capacity (ton/gpm)		**200 tons / 600 gpm**	**1,200 tons / 3,600 gpm**	**4,800–6,000 tons/12K to 15K gpm**	Nominal 2.5 – 3.0 gpm per ton.
Comments		*** M-W Hall is already scheduled for Remodel, making it a good candidate for HVAC Upgrades. (Costs already included in Capital Project Funds).** **- A good opportunity for a test case project.** **- Heating EUI Reduction Potential is Substantial.** **- Grant Monies, Rebates and Incentives may be available to reduce first costs.**	**- Good economy of scale for shared Micro-District Heat Transfer Center usage.** **- Aging Building HVAC Systems are good candidates for future upgrades to GSHP systems.** **- Heating EUI Reduction Potential is Substantial.** **- Grant Monies, Rebates and Incentives may be available to reduce first costs.**	**- Good economy of scale. Campus-wide Zero Carbon Heating achievable over time.** **- Upgrading Building HVAC Systems for GSHP duty will be a phased process over several years.** **- Campus Heating EUI Reduction Potential is Substantial.** **- Grant Monies, Rebates and Incentives may be available to reduce first costs.**	

BASELINE CASE | Existing Rozell Central Energy Plant - District Heating & Cooling

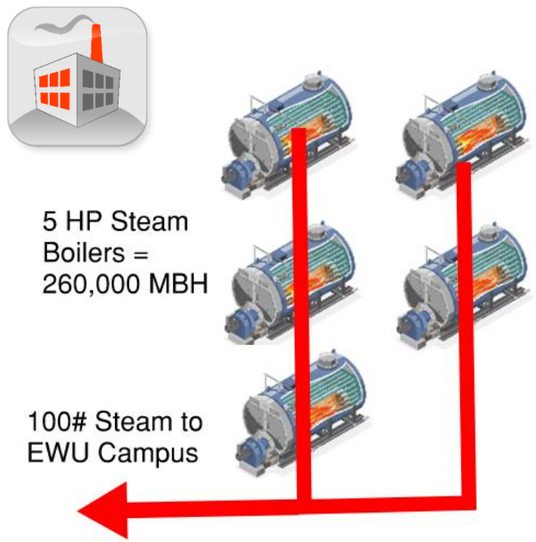
EXISTING ROZELL CENTRAL ENERGY PLANT

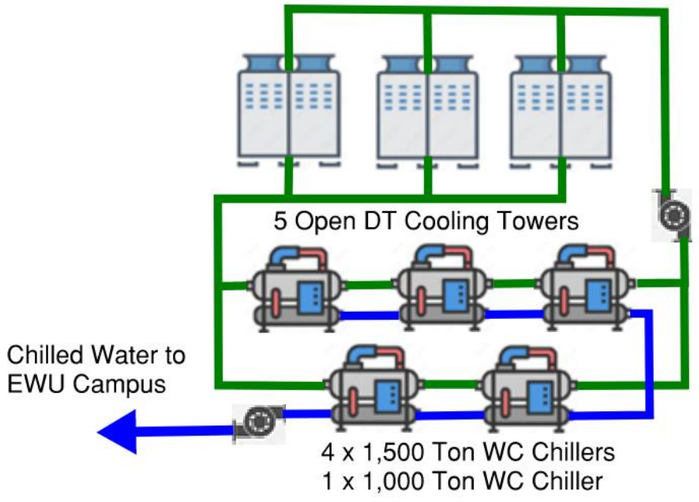
Campus Heating:

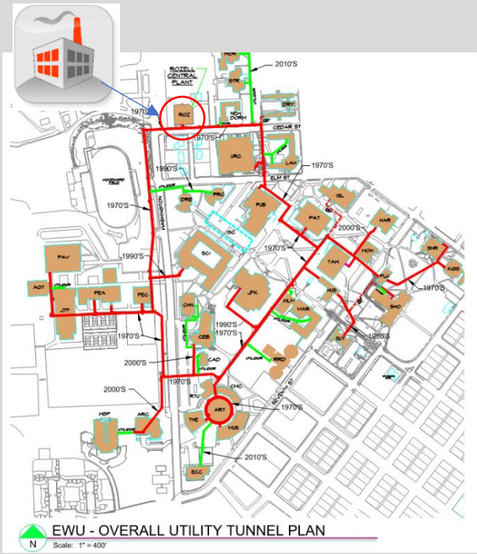
- Five (5) Gas & Oil-Fired High Pressure (100#) Steam Boilers
- 260 Klb/Hr Steam Capacity
- Assumed Efficiency – 85%

Campus Cooling:

- Five (5) Water-Cooled Chillers & Open Draw-Thru Cooling Towers
- 7,000 Tons CHW Capacity
- Calculated Efficiency – 0.61 kW/Ton







2022 EWU Utility Rates

- Electricity (City of Cheney): Consumption Rate: $0.064/kWh
- Natural Gas (AVISTA): Consumption Rate: $0.994/Therm

E-GRID WA STATE CO_2E FACTORS

- Electricity CO_2e = 0.44 lb/kWh
- Natural Gas CO_2e = 11.7 lb/Therm

CAMPUS HEATING

Heating for the EWU campus is provided by steam produced at the Central Rozell Energy Plant. High Pressure (100 psig) Steam is distributed through a campus-wide network of underground utility tunnels, which then feeds steam into each building.

Steam pressure is typically reduced to about 15 psig, for space heating needs and domestic hot water production. Some buildings convert the steam to hot water, for hydronic heating, but most facilities use the steam directly. The steam condensate is pumped back to the central plant to be reused in the heating cycle.

Campus heating, due to the cold winter months in eastern Washington, accounts for about 74% of the total central plant energy usage, and about 95% of the carbon emissions. As such the primary focus of this study is to explore opportunities to reduce carbon impacts from the heating plant.

CAMPUS COOLING

Cooling for the EWU campus is provided by chilled water that is produced at the Central Rozell Energy Plant. Five water-cooled chillers and open-type cooling towers produce chilled water at approximately 45 deg. F, which is pumped around the campus through the utility tunnel network.

The chiller plant is in the process of several modernization and energy upgrades, including water-side economizers and variable speed chillers and pumps. Winter cooling, when needed for process cooling needs, is provided by a separate dry-cooler unit, with glycol anti-freeze protection.

The majority of the campus buildings are cooled (air-conditioned) from the chiller plant, except for most of the residence halls, which are not air conditioned. Chilled water from the plant is typically fed directly into the building's HVAC air handling units, without losses due to intervening heat exchangers.

EXISTING CENTRAL PLANT METRICS

Fuel Costs:

Natural Gas/Oil - $1,988,000/yr
Electricity - $ 241,432/yr

Emissions (GHG equivalents):

Natural Gas/Oil – 2,340 Gas Cars/yr
Electricity – 152 Gas Cars/yr

Overall Campus Energy Density:

Heating EUI – 77 kBtu/sf/yr
Cooling EUI – 33 kBtu/sf/yr

CENTRAL ENERGY PLANT AREAS SERVED

Heating ~ 2,600,000 SF
Cooling ~ 2,100,000 SF

CARBON REDUCTION OPPORTUNITIES

- Transition Campus Heating to Heat Pumps (ground or air-source).
- Explore hybrid heating systems, such as air-source heat pumps with steam back-up for cold spells.
- Add/Expand use of Steam Micro-Turbine Electric Generators (Phase 1 is already being implemented) for "free" site produced power.
- Transition to evolving "Green" Fuels, if and when available, such as Renewable Diesel or Renewable Natural Gas. Allows continued use of existing infrastructure.
- Explore eventual transition of the Plant to High-Temperature (LP Steam) Heat Pumps and/or Steam Compressors, as these technologies continue to develop. Allows continued use of existing infrastructure.

CARBON REDUCTION OPPORTUNITIES

- Transition Campus Cooling to Heat Pumps (maximize building heat recovery/sharing opportunities with heating-side operation).
- Explore hybrid cooling systems, using building-level heat pumps with simultaneous heat recovery operation, to maximize efficiency during moderate weather, with chiller plant use during peak summer cooling season. Allows continued use of existing infrastructure and highly efficient chiller plant.
- Explore opportunities to continue maximize existing chiller plant efficiencies, such as Thermal Energy Storage, Steam-Powered Chillers, etc.

CARBON REDUCTION CHALLENGES

- Carbon Reduction Costs are very high for these case studies.
- Transitions and upgrades/retrofits will take time and be disruptive.
- Future costs of energy are uncertain.
- Alternative GHG reduction technologies are still emerging. Markets are developing.

CASE STUDY-1 | Martin-Williamson Hall Complex GSHP System

GROUND-SOURCE HEAT PUMP (GSHP) SYSTEM HVAC INFRASTRUCTURE:

- Water-to-Water Heat Recovery Chillers (Heat Pumps) – 2 Units
- Heat Exchanger
- Distribution Pumps (To GSHPs)
- Extraction Well Supply Pump
- Underground Piping to and from Well Heads.

FIRST COSTS:

- Bldg HVAC Systems:
  90K SF x $35/sf = $3.1M

(Costs for GSHP system components only, other HVAC costs are common to other systems)

OPEN-LOOP TYPE EXTRACTION & REINJECTION WELL CHARACTERISTICS:

Target System Capacity:
200 tons

Ground Water Exchange Flow Rate:
600 gpm

Spacing Between Extraction and Reinjection Wells:
600 ft

Total Well Depth:	No. of Wells:
1,075 ft	**2 (1-pair)**

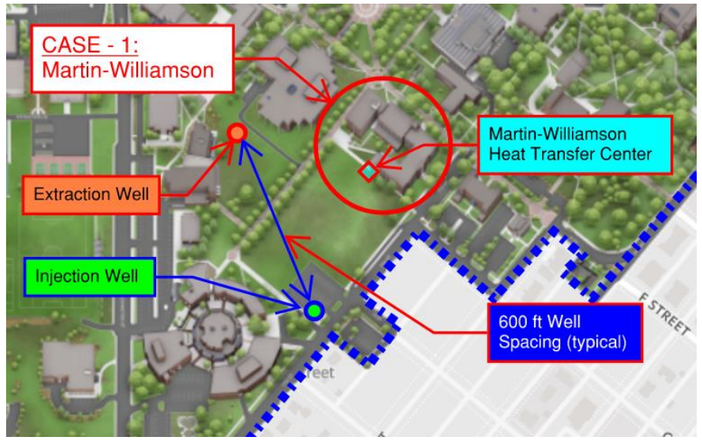
Pump Depth:	Average Reinjection Backpressure:
650 ft	**20 PSI**

FIRST COSTS:

- Wells, Pumps & Piping: $3.5M
($1.5M per well – Typical)

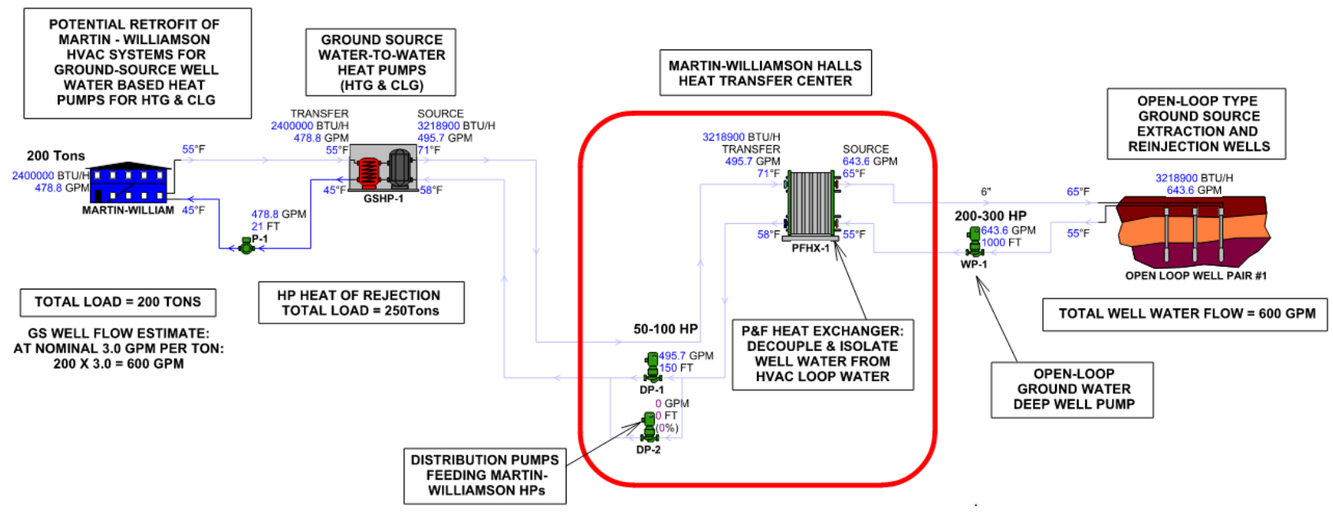
PROPOSED OPEN-LOOP WELL LOCATIONS:

The proposed location of the extraction well, for the Martin-Williamson Complex, would be near the NE corner of the CEB building. The location of the injection well would be at the SE corner of the vacant lot, where the former Reid Elementary School was torn down. This well would be situated near the corner of the lot, to allow for future construction in the main vacant area, with piping running along the edges, to and from the well heads.

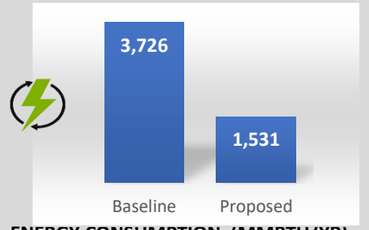


PROPOSED SYSTEM DESIGN:

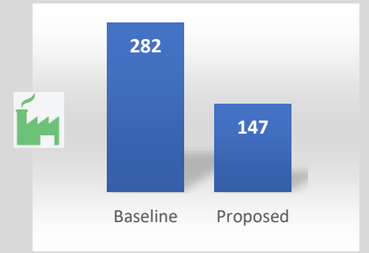
The existing Martin-Williamson Complex is in the process of being studied for a complete renovation and upgrade. This provides an excellent opportunity to consider possible new, energy efficient, carbon-zero, HVAC system options.
For this study, the proposed HVAC system would be based on a ground-source heat pump (GSHP) system, utilizing open-loop wells for supply and reinjection of ground water, which acts as the source of the heat-sink & source for the central heat pump equipment. Utilizing a ground-source heat pump system for the building heating needs, which utilizes electricity, instead of fossil-fuel based steam from the Rozell Central Plant, allows the facility to be heated up to 400% more efficiently compared the existing steam system, thereby providing for significant reductions in greenhouse gas (GHG) emissions.



ENERGY & CARBON ANALYSIS:



ENERGY CONSUMPTION (MMBTU/YR)



CARBON EMISSIONS (TONS/YR)

PERFORMANCE ANALYSIS:

The open-loop ground source heat pump system is able to reduce heating energy by about 60% compared to heating from the existing central steam plant. Cooling energy is similar to the central chiller plant, since the GSHP's higher efficiency is tempered somewhat by the extraction well pumping energy needs.

SAVINGS FROM BASELINE:

Heating EUI Savings: **25 btu/sf/yr**
Energy Cost Savings: **$11,000/yr**
Carbon Emissions Reductions: **135 tons/yr**
(27 gas cars off the road)

FIRST COST ANALYSIS:

The proposed GSHP system using open-loop wells, will have significantly higher first costs compared to a system that ties into the existing central plant steam and hot water systems.

CASE STUDY-2 | Four (4) Building – Micro-District GSHP System

GROUND-SOURCE HEAT PUMP (GSHP) SYSTEM HVAC INFRASTRUCTURE:

- Water-to-Water Heat Recovery Chillers (Heat Pumps) – 2 Units/Bldg
- Heat Exchangers
- Distribution Pumps (To GSHPs)
- Extraction Well Supply Pumps
- Underground Piping to and from Well Heads.

FIRST COSTS:

- Bldg HVAC Systems:
  515K SF x $35/sf = $18.0M

(Costs for GSHP system components only). Also requires existing HVAC systems to be retrofit for GSHP duty.

OPEN-LOOP TYPE EXTRACTION & REINJECTION WELL CHARACTERISTICS:

Target System Capacity:
1,600 tons

Ground Water Exchange Flow Rate:
4,800 gpm

Spacing Between Extraction and Reinjection Wells:
600 ft

Total Well Depth: **1,075 ft**

No. of Wells: **6 (3-pairs)**

Pump Depth: **650 ft**

Average Reinjection Backpressure: **20 PSI**

FIRST COSTS:

- Wells, Pumps & Piping: $10.5M

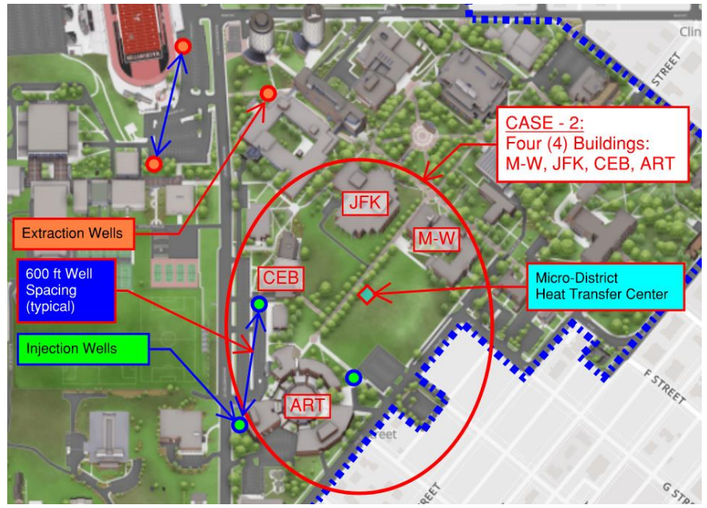
($1.5M per well – Typical)

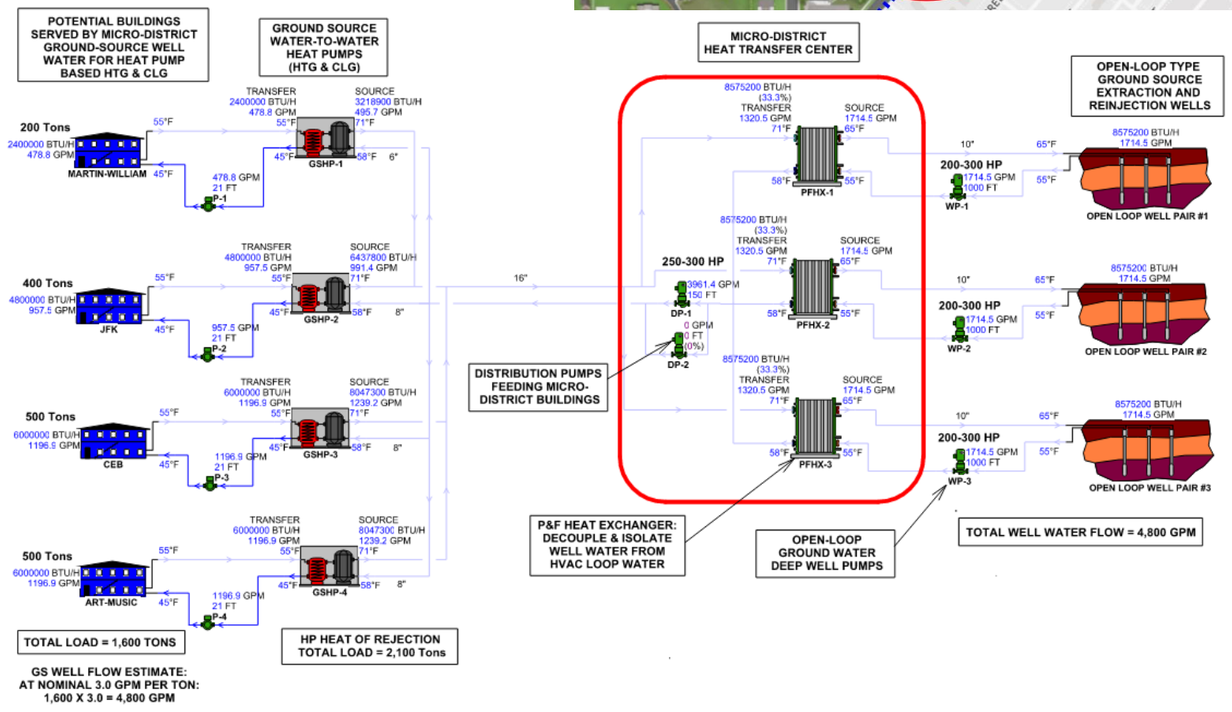
PROPOSED OPEN-LOOP WELL LOCATIONS:

Expanding on the well locations as proposed in Case Study-1, additional extraction wells would be added up-gradient, around the stadium parking areas, with matching reinjection wells located along Washington St, near theCEB and ART complexes.

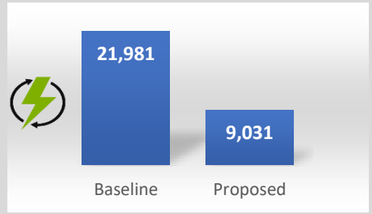
PROPOSED SYSTEM DESIGN:

In this scenario, the ground-source extraction wells would supply water to a central "Micro-District" Heat Transfer Center. Here the ground loops would be decoupled using heat exchangers, and secondary pumps would then distribute water to the various connected buildings in the network.

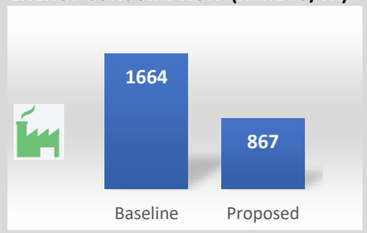




ENERGY & CARBON ANALYSIS:



ENERGY CONSUMPTION (MMBTU/YR)



CARBON EMISSIONS (TONS/YR)

PERFORMANCE ANALYSIS:

Similar to Case Study-1, The open-loop ground source heat pump system is able to reduce heating energy by about 60%, compared to heating from the existing central steam plant. There is some economy of scale in this scenario, with multiple wells that can be staged and optimized with load changes.

SAVINGS FROM BASELINE:

Heating EUI Savings: **30 btu/sf/yr**
Energy Cost Savings: **$65,000/yr**
Carbon Emissions Reductions: **800 tons/yr**
(160 gas cars off the road)

FIRST COST ANALYSIS:

The proposed GSHP system using open-loop wells, will have significantly higher first costs compared to a system that ties into the existing central plant steam and hot water systems.

CASE STUDY-3 | Entire Campus Conversion to GSHP Systems

GROUND-SOURCE HEAT PUMP (GSHP) SYSTEM HVAC INFRASTRUCTURE:

- Micro-District Heat Transfer Buildings
- Water-to-Water Heat Recovery Chillers (Heat Pumps) – 2 Units/Bldg
- Heat Exchangers
- Distribution Pumps (To GSHPs)
- Extraction Well Supply Pumps
- Underground Piping to and from Well Heads.

FIRST COSTS:

- Bldg HVAC Systems:
  2,600,000 SF x $30/sf = $78.0M
(Costs for GSHP system components only). Also requires existing HVAC systems to be retrofit for GSHP duty.

OPEN-LOOP TYPE EXTRACTION & REINJECTION WELL CHARACTERISTICS:

Target System Capacity:
4,800 tons to 6,000 tons

Ground Water Exchange Flow Rate:
12,000 gpm to 15,000 gpm

Spacing Between Extraction and Reinjection Wells:
600 ft

Total Well Depth:	No. of Wells:
1,075 ft	**20 (10 pairs)**

Pump Depth:	Average Reinjection Backpressure:
650 ft	**20 PSI**

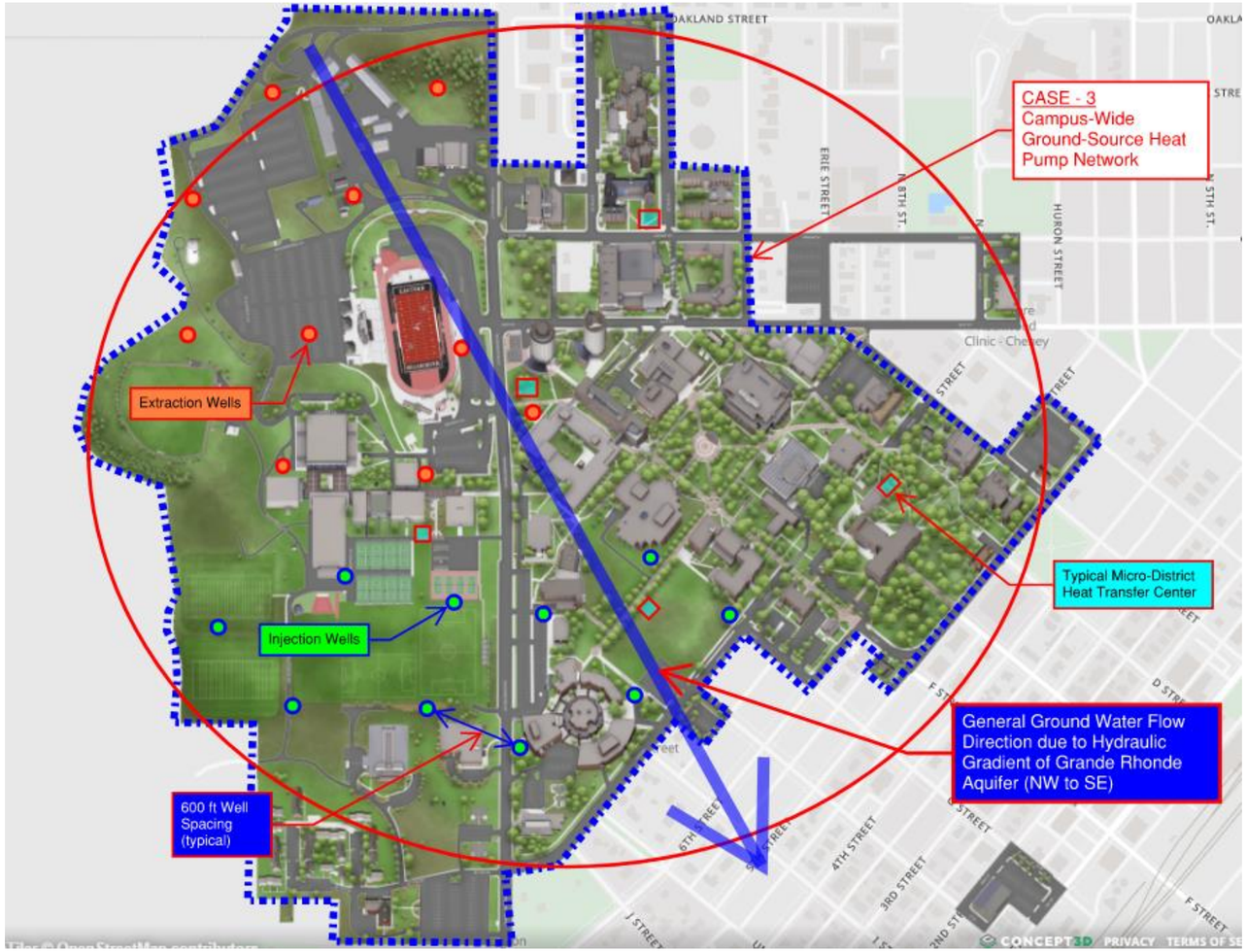
FIRST COSTS:

- Wells, Pumps & Piping: $32.0M
($1.5M per well – Typical)

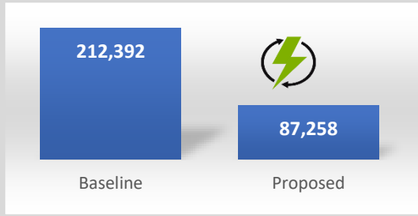
PROPOSED OPEN-LOOP WELL LOCATIONS:

Converting the entire campus heating system to ground source heat pumps will require a considerable expansion of the well fields proposed in Case Studies 1 & 2. Under this scenario, it is envisioned that the extraction wells would be located up-gradient, mostly around the stadium and parking lots. The injection wells would be situated SE from the extraction wells, primarily along the perimeter of the playfields and central campus lawn areas.

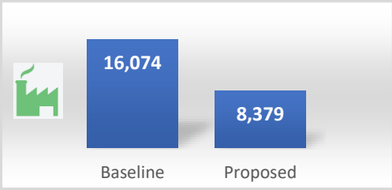
Under this scenario, all of the campus buildings steam heating systems would need to be retrofit, in order to utilize the lower heating water temperatures produced by the ground-source heat pump systems. This will require a multi-year, phased approach, in order to transition away from the central energy plant, to the proposed distributed energy system.



ENERGY & CARBON ANALYSIS:



ENERGY CONSUMPTION (MMBTU/YR)



CARBON EMISSIONS (TONS/YR)

PERFORMANCE ANALYSIS:

Performance estimates for this scenario are simply extrapolations of the other case studies, scaled to the entire campus area. Due to the variations in building types, uses, operation, age, etc., detailed energy modeling estimates at this stage are not practical.

SAVINGS FROM BASELINE:

Heating EUI Savings: **48 btu/sf/yr**
Energy Cost Savings: **$620,000/yr**
Carbon
Emissions Reductions: **7,700 Tons/yr**
(1,540 gas cars off the road)

FIRST COST ANALYSIS:

The costs of the proposed campus-wide GSHP system, to convert from central plant steam and chilled water, will be significant. Numbers presented here are simply rough-order-of-magnitude values, for conceptual planning purposes.

EASTERN WASHINGTON UNIVERSITY GROUND SOURCE HEAT PUMP EVALUATION

Eastern Washington University
Cheney, Washington

January 8, 2024

Prepared for

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Ground Source Heat Pump Evaluation
Eastern Washington University
Cheney, Washington

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Dated: January 8, 2023

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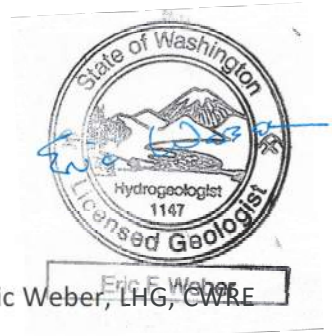

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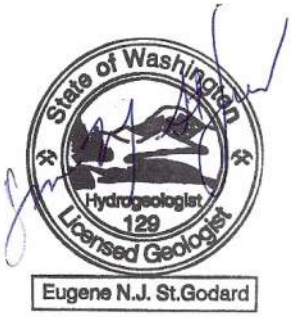
Dated: January 8, 2023



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Date: January 8, 2024
Project No.: 2222001.010
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Project Coordinator: KJG

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EXECUTIVE SUMMARY

This report documents a preliminary hydrogeologic evaluation by Landau Associates, Inc. (Landau) of open-loop ground source heat pump (GSHP) well field alternatives for the Eastern Washington University (EWU) campus in Cheney, Washington. Landau has prepared the evaluation in partnership with Water and Natural Resources Group, Inc. (WNR) in support of MSI Engineers' (MSI) assessment of the feasibility and economic viability of converting EWU's heating and cooling system to GSHPs. Landau and WNR's scope of work is to develop a hydrogeologic conceptual model, including hydraulic and thermal modeling, and conduct a water rights and permitting evaluation. Landau and WNR completed assessment of three well field operation case study scenarios provided by MSI. Each case study consists of an injection well(s) and a pumping well(s) at various well spacing and pumping rates. A project vicinity map is presented on Figure 1. The scope of the evaluation was limited to a desktop study of the existing literature and available aquifer testing data for the area.

The hydrogeologic evaluation addressed three primary questions: 1) what are the permitting and water rights requirements for GSHP well field installation, 2) is aquifer yield sufficient to meet system capacity, and 3) can the aquifer provide sufficient thermal capacity while maintaining groundwater temperatures within practically operable ranges for GSHP on a long-term sustainable basis?

Three GSHP system options were evaluated:

1. Case Study 1 – Martin-Williamson Hall GSHP System: GSHP system to supply heating and cooling to Martin-Williamson Hall
2. Case Study 2 – Four Buildings, Micro-District GSHP System: GSHP system to supply heating and cooling to Martin-Williamson Hall, JFK Library, the Computing and Engineering Building, and the Art-Theater-Music Complex
3. Case Study 3 – Entire Campus GSHP System: GSHP system to supply heating and cooling to the entire EWU campus.

Implementation of a GSHP will require a new non-consumptive water right authorization from the Washington State Department of Ecology (Ecology). WNR completed a draft water right application, which is presented in Appendix D.

SUMMARY OF FINDINGS

The following findings are supported by the hydrogeologic evaluation and modeling efforts described in the report:

- GSHP wellfield permitting requirements include obtaining a new water right and registration of all injection wells with Ecology's Underground Injection Control Program. Permitting requirements are unlikely to constrain project implementation.
- The EWU campus is underlain by a productive aquifer within the Grande Ronde Basalt Formation (Grande Ronde Basalt) of the Columbia River Basalt Group (CRBG). Landau's preliminary hydrogeologic evaluation suggests aquifer yield is sufficient to meet system capacity

for all three case study scenarios. Additional aquifer testing is recommended for the next phase of feasibility analysis to confirm aquifer yield in the campus area.

- Thermal modeling completed with the computer programs MODFLOW and MT3DMS suggests that, with proper placement of extraction and injection wells, groundwater temperatures at the point of extraction will fluctuate within a range of acceptable temperatures for operation of the GSHP system. Steady-state thermal conditions were simulated by running the thermal model for each case study for a period of 5 years, cycling between heating and cooling periods.

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FIGURES

APPENDICES

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LIST OF ABBREVIATIONS AND ACRONYMS

bgs ..... below ground surface
CHD ..... specified head
Cheney ..... city of Cheney, Washington
CRBG ..... Columbia River Basalt Group
Ecology ..... Washington State Department of Ecology
EWU ..... Eastern Washington University
ft ..... foot/feet
ft^2/day ..... square feet per day
GIS ..... geographical information system
GMS ..... groundwater modeling system
gpm ..... gallons per minute
GSHP ..... ground source heat pump
HAC ..... heat pump/air conditioning
Landau ..... Landau Associates, Inc.
MSI ..... MSI Engineers
NPSHr ..... net positive suction head required
SEPA ..... State Environmental Policy Act
UIC ..... Underground Injection Control
USGS ..... United States Geological Survey
WAC ..... Washington Administrative Code
WNR ..... Water and Natural Resources Group, Inc.

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1.0 PROJECT BACKGROUND

This report documents a preliminary hydrogeologic evaluation by Landau Associates, Inc. (Landau) of open-loop ground source heat pump (GSHP) well field alternatives (project) for the Eastern Washington University (EWU) campus in Cheney, Washington. Landau has prepared the evaluation in partnership with Water and Natural Resources Group, Inc. (WNR) in support of MSI Engineers' (MSI) assessment of the feasibility and economic viability of converting EWU's heating and cooling system to GSHPs.

The ground source heat pump (GSHP) system proposed by MSI is an open-loop type system, where groundwater is pumped out of the aquifer, circulated through a heat exchanger, and reinjected back into the aquifer. Hydraulic and thermal modeling was completed to evaluate hydraulic and thermal capacity of the local aquifer to meet the GSHP demands for each case study. Aquifer extraction requires a water right from the Washington State Department of Ecology (Ecology) and reinjection requires registration with Ecology's Underground Injection Control (UIC) program. Permitting considerations are discussed in the following section, followed by a discussion of the hydrogeologic assessment, modeling results, well design, and recommendations.

2.0 PERMITTING CONSIDERATIONS

The project will first require a water right permit for the GSHP. Typically, new water right applications are acted upon in the order in which they are received by Ecology, which assigns the application's priority date. Certain new water right applications are granted priority processing dependent upon certain proposed project requirements and conditions. Under Washington Administrative Code (WAC) 173-152-050(2), an application may receive priority processing if Ecology determines that, "the proposed water use is non-consumptive and if approved would substantially enhance or protect the quality of the natural environment (WAC 173-152-050[2][b]). Ecology also has Policy 2020 – Priority Processing of Heat Pump Applications." This policy also states that a withdrawal for heat exchange purposes may be afforded priority processing if the conditions under WAC 173-152-050(2)(b) are met. The proposed EWU GSHP open-loop heat exchange system meets the criteria set forth in WAC 173-152-050(2)(b) and as such, Ecology should afford it a priority processing status.

Ecology Policy 2020 governs the determination of consumptive versus non-consumptive water use. The policy defines groundwater use as non-consumptive when, "there is no diminishment of the source." As proposed with this project, the groundwater withdrawn for the GSHP will immediately be injected back to the source "in the same quantity and quality (excluding temperature change) at a point in close proximity to the withdrawal wells." Assuming the proposed project meets these standards, a non-consumptive water right has a relatively high probability of being approved by Ecology.

The proposed water right application (Appendix D) exceeds the 2,250 gallons per minute (gpm) exemption limit, and as such will require submittal of a State Environmental Policy Act (SEPA) checklist. The SEPA process will be conducted upon submittal of the water right application.

The project will also be required to register as a Class V Underground Injection Control well with Ecology. Owners or operators of proposed—or existing—underground injection control wells must register their wells online using the SecureAccess Washington website. All injection wells must either receive a program rule authorization or a state discharge permit in order to operate.

Ecology's Underground Injection Control rule, Chapter 173-218 WAC, authorizes open-loop heat pump/air conditioning (HAC) system wells when a well is registered, and the environmental protection requirements of the rule are met. The following conditions are required to authorize HAC systems in the form of an injection well:

- No chemicals are added to the HAC system
- The HAC system meets water right permitting requirements
- Discharges from wells do not affect the water quality in nearby waters on the 303(d) polluted waters list
- Discharges from wells do not affect the water in nearby waters with a Total Maximum Daily Load (water quality cleanup) plan
- Discharges from wells do not affect groundwater quality by concentrating or redirecting existing contaminant plumes

- Groundwater used in the HAC system must be discharged back to the source aquifer.

EWU will coordinate with Ecology upon water right permit authorization to assure all injection well requirements are met.

3.0 HYDROGEOLOGIC ASSESSMENT

Eastern Washington University lies within the Columbia Plateau. Local geology and hydrogeology are dominated by the presence of the CRBG. The CRBG is generally the most consistent source of large groundwater yields required by local water purveyors (Kahle 2011 and GeoEngineers 2015). A site plan that includes surficial geology is presented on Figure 2. A geologic cross section of the EWU campus is presented on Figure 3.

3.1 Geologic Setting

The city of Cheney, Washington (Cheney) is located on the northeast margin of the Columbia Plateau, a structural and topographic basin within the drainage of the Columbia River infilled by the CRBG. The CRBG consists of a series of flows, which erupted during the Miocene Epoch about 17 million to 6 million years ago. In the northeast region of the plateau the basalts are relatively undeformed with a gentle southwest slope. In the project area, the CRBG is divided into two basalt units—the Wanapum, and Grande Ronde Formations—and their sedimentary interbeds. Each formation consists of multiple individual flows. The presence of sedimentary interbeds reflect deposition in streams and lakes during periods between the eruption of basalt flows. The CRBG stratigraphically overlays basement rocks that consist of meta-sedimentary rocks of the Precambrian age Belt Supergroup that have undergone low-grade metamorphism during Mesozoic and Tertiary periods. Surface topography is characterized by channeled bedrock, carved by catastrophic glacial floods of the last ice age (Pleistocene time), sediments deposited by glacial flood waters, and wind deposited silts.

The stratigraphic sequence beneath EWU can be generalized as follows:

- Zero to 50 feet below ground surface (ft bgs) of unconsolidated surficial deposits, sand and gravel, and wind-deposited silts
- 50 to 1,300 ft bgs of CRBG
  - 50 to 300 ft bgs, Wanapum Basalt and sedimentary interbeds
  - 300 to 1,000 ft bgs, Grand Ronde Basalt and sedimentary interbeds
- 1,300 ft bgs and below, pre-CRBG basement rock (Kahle 2011, Buchanan 2007, and well log interpretation).[1]

3.2 Hydrogeologic Units

All three locally present stratigraphic units described above store water in the project area; however, surficial deposits and the basement rock are not anticipated to produce sufficient yield for a GSHP system. Unconsolidated surficial deposits typically have a saturated thickness of less than 10 ft and are not considered reliable for long term supplies of large quantities of groundwater. The basement rock generally has much lower permeability than the basalts and in most areas of the Columbia Plateau are considered the base of the groundwater flow system (Kahle 2011); however, the basement rock beneath Cheney may be an exception. Cheney Wells 4 and 5 are developed in basement rock aquifer

[1] Nearby well logs are presented in Attachment A. Well locations are presented on Figure 2.

with total depths of 2,136 ft and 2,134 ft, respectively, and maximum reported yields of 250 gpm and 750 gpm, respectively (Parametrix 2019).

The CRBG is generally the most consistent source of large groundwater yields in the area and is the focus of this assessment. A more detailed description of the surficial aquifer unit and the basement aquifer unit can be found in Kahle 2011, Buchanan 2007, and GeoEngineers 2015.

3.2.1 Columbia River Basalt Group Aquifer

The CRBG aquifer system is a series of vertically stacked confined or semi-confined basalt aquifers with water yield concentrated at interflow zones (i.e., the zone between two individual basalt flows). Interflow zones include a flow top, a flow bottom, and a sedimentary interbed if present. Interflow structures can include vesicular and/or brecciated flow tops, flow bottom pillow complexes and/or brecciated zones; these features create permeability and storage (Kahle 2011). Water reaches the interflow zones and recharges the aquifers by downward percolation or by lateral groundwater inflow (Luzier and Burt 1974). Movement of groundwater vertically along joints in the basalt is estimated to be several orders of magnitude lower than the horizontal range of movement. Cheney wells 1, 2, 3, 6, and 7 are developed in the CRBG aquifer, as are EWU wells 1 and 2R (Parametrix 2019).

The Grande Ronde Basalt aquifer is considered the most productive basalt aquifer in the project area. The Grande Ronde Basalt aquifer is mostly confined and is recharged to a large degree by lateral groundwater inflow. The overlying Wanapum Basalt aquifer is partially recharged by precipitation and infiltration and is the source of water for many springs and lakes in the Cheney area (Buchanan 2007).

Well logs in and around the EWU campus record a substantial (75- to 100-ft-thick) sedimentary interbed at depths of 500 to 600 ft bgs. Previous hydrogeologic studies have interpreted this layer to be the Latah formation, which is broadly understood to have been deposited between the Wanapum Basalt and the Grande Ronde Basalt (Kahle 2011 and Cheney wellhead protection plan). However, recent geochemical analysis of samples collected from Cheney Well 5 identified the contact between the Wanapum and Grande Ronde Basalts at about elevation 2,200 ft (200 to 300 ft bgs; Buchanan 2007 and GeoEngineers 2015). This depth correlates to an approximate Wanapum Basalt thickness of 220 ft to 280 ft in the EWU campus area.

3.3 Aquifer Hydraulic Parameters

Well testing and hydrogeologic reports were reviewed to estimate hydraulic parameters for the Grande Ronde Basalt aquifer in the vicinity of the EWU campus. Aquifer parameter estimates are summarized in Table 1.

Table 1. Hydraulic Parameters

Model Parameter	Value
Aquifer Transmissivity (square feet per day)	9,900
Aquifer Storativity (unitless)	0.0002
Static Water Level (feet below ground surface**)**	300 to 400
Hydraulic Gradient	0.01

3.3.1 Aquifer Transmissivity

Aquifer transmissivity (T) describes the ability of the aquifer to transmit groundwater throughout its entire saturated thickness. Transmissivity is the product of hydraulic conductivity (i.e., the capacity of the aquifer material to transmit water) and aquifer thickness:

$$T = Kb$$

Where K is transmissivity and b is aquifer thickness

Transmissivity can be determined via pumping tests, analysis of aquifer material, or calculations based on laboratory tests. Of these methods, transmissivity values established during pumping tests are typically considered the most accurate. Due to the heterogeneity of hydraulic conductivity in the Grande Ronde Basalt aquifer and variability in saturated aquifer thickness, pumping test data from onsite EWU Well 2R is anticipated to be most representative of local conditions (versus pumping test data from wells at greater distances from campus).

In 2015, pumping tests were completed on a new water supply well (Well 2R) installed on EWU campus. Analysis of the constant-rate pumping test data estimated an aquifer transmissivity range of 9,900 square feet per day (ft^2/day) to 14,000 ft^2/day, using the Cooper-Jacob graphical method and the Theis recovery method, respectively (GeoEngineers 2015). For conservatism, the lower transmissivity value was selected for modeling purposes.

The pumping well screen was open to 225 ft of the aquifer, and approximately 100 ft of that interval was estimated to be water-bearing interflow zones. Therefore, for modeling purposes, an aquifer thickness of 100 ft was assumed.

3.3.2 Aquifer Storativity

Aquifer storativity (S) is a measure of an aquifer's ability to store and release water and is defined as the volume of water that a unit will absorb or release from storage per unit surface area per unit change in hydraulic head. Storativity is also known as the storage coefficient; it is dimensionless and is expressed as a decimal. Storativity cannot be estimated from a pumping test without observation well data (testing of Well 2R did not include an observation well[s]), therefore a representative value was selected from

available literature. The estimated median storage coefficient for the Grande Ronde Basalt aquifer is 0.0002 (Kahle 2011).

3.3.3 Static Water Level and Hydraulic Gradient

Groundwater levels in the Grande Ronde Basalt aquifer are between about 2,100 and 2,200 ft elevation in the Cheney area (Whiteman 1986) (i.e., between 300 and 400 ft bgs in the EWU campus area). The groundwater flow direction is interpreted to be to the south-southeast with a gradient of 0.01.

During the production well evaluation at Well 2R, completed in 2015, the static groundwater level in the Grande Ronde Basalt aquifer was approximately 350 ft bgs (GeoEngineers 2015). The groundwater level was monitored for a 7-day period under non-pumping conditions. A cyclic fluctuation of 1½ ft was recorded and interpreted to be interference associated with the pumping cycle at Well 1. On a larger timescale, existing historical data indicate that groundwater mining is occurring in the aquifer system beneath the city of Cheney and modeling efforts predict that the rate of water level decline will increase as pumping demands grow with anticipated increases in city population (Buchanan 2007).

Groundwater flow in the CRBG near the Cheney area is generally to the south and southwest, towards the center of the Columbia Basin. However, flow in the Grande Ronde Basalt aquifer in the area of the EWU campus appears to be to the south-southeast due to the presence of a groundwater trough to the southeast of Cheney. Grande Ronde Basalt aquifer groundwater elevation contours are presented in Figure 4 (Whiteman 1986). Groundwater flow direction should be confirmed in the next phase of project design; it is an important design variable for sustaining groundwater temperature targets at the source well.

4.0 MODELING

Hydraulic modeling was completed using estimated aquifer parameters discussed above. Three GSHP system options were evaluated:

1. Case Study 1 – Martin-Williamson Hall GSHP System: GSHP system to supply heating and cooling to Martin-Williamson Hall. Consists of one injection well and one extraction well. Preliminary well locations for Case Study 1 are shown on Figure 5A.
2. Case Study 2 – Four Buildings, Micro-District GSHP System: GSHP system to supply heating and cooling to Martin-Williamson Hall, JFK Library, the Computing and Engineering Building and the Art-Theater-Music Complex. Consists of three injection wells and three extraction wells. Preliminary well locations for Case Study 2 are shown on Figure 5B.
3. Case Study 3 – Entire Campus GSHP System: GSHP system to supply heating and cooling to the entire EWU campus. Consists of ten injection wells and ten extraction wells. Preliminary well locations for Case Study 3 are shown on Figure 5C.

Case Study scenarios were presented to Landau by MSI, including associated target system capacity in units of gpm and preliminary design assumptions (e.g., number of wells required, well depth, and well spacing). Hydraulic and thermal modeling was completed to evaluate the feasibility of achieving the necessary well yields to meet system capacity demands and maintain sustainable groundwater temperatures for effective operation of the GSHP system.

4.1 Hydraulic Modeling

Drawdown at the extraction well and mounding at the injection well were simulated using the modified nonequilibrium equation (Driscoll 1986) and estimated aquifer parameters presented above.

$$s = \frac{264Q}{T} log \frac{0.3Tt}{r^2S}$$

Where: s = drawdown, in ft
Q = pumping rate, in gallons per minute
T = transmissivity, in gallons per day per foot (9,900 ft^2/day)
t = time since pumping started, in days (1,825 days = 5 years)
r = distance from pumping well, in ft (i.e., well spacing)
S = coefficient of storage (dimensionless; 0.0002)

The drawdown (or mounding) value (s) at each well location was calculated for each case study, simulating the effects of combined extraction and injection on the water level in the aquifer. Drawdown in the extraction wells is offset by the return of groundwater through the injections well, which has the opposite effect on the water level than pumping (i.e., raises rather than lowers water levels). Drawdown or mounding analysis does not take into account well efficiency. Well efficiency (drawdown in the well divided by drawdown in the aquifer directly outside the well) is less than 100 percent due to the effect of well loss as water enters or exits the well screen. For the purposes of this evaluation, it may be

assumed that well efficiency would cause drawdown in the wells to be roughly 10 to 20 ft lower (or higher in the case of injection). Model inputs and results are summarized below:

Table 2. Hydraulic Modeling Results Summary

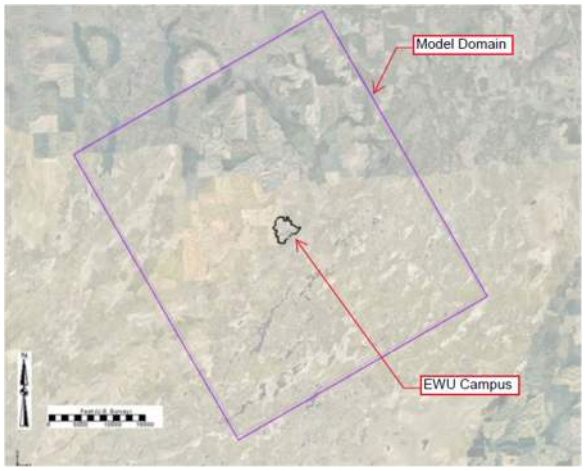
	Case Study 1	Case Study 2	Case Study 3
Q (gpm)	600	1,200	1,500
r (ft)	600	500 – 1,600	340 – 3,010
Maximum drawdown (s, ft)	16	43	87
Maximum mounding (-s, ft)	16 (7 psi)	43 (19 psi)	87 (38 psi)
Available water column above pump at maximum drawdown (ft)	284	257	213

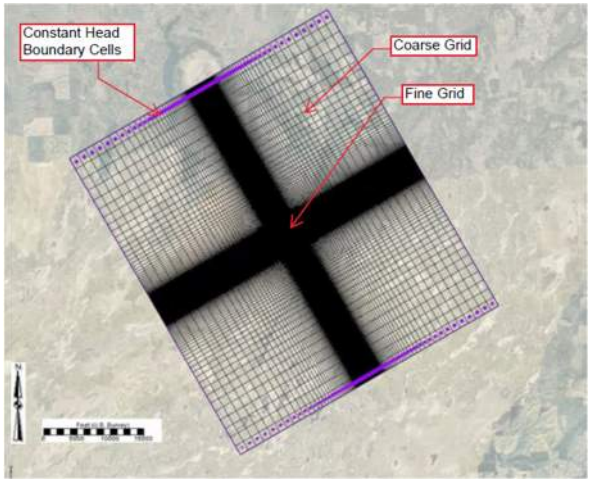
a. **Note:** Hydraulic head in the Grande Ronde Basalt aquifer in the vicinity of the EWU campus is estimated to be around 350 ft bgs. Available water column is calculated as follows: pump depth minus static water level minus drawdown. Drawdown and mounding values presented do not take into account well efficiency, see discussion in text.

Hydraulic modeling details are included in Appendix B.

4.2 Thermal Modeling

Overall anticipated GSHP system performance within the constraints of the site hydrogeologic setting, as described above, was evaluated with numerical groundwater flow and heat transport modeling (thermal modeling). Thermal modeling was completed using a simple 1-layer groundwater transport model using the US Geological Survey (USGS) numerical MODFLOW (for groundwater flow) and MT3DMS (for heat transport) model codes, as accessed via Aquaveo's Groundwater Modeling System (GMS) software. GMS allows for convenient GIS-based conceptual model setup, conversion to numerical model grid space, and high-quality output graphics to visualize modeling results. The thermal model was set up as a simplified single layer to represent the Grande Ronde Basalt aquifer, with the following key parameters:





- Model grid dimensions (i.e., model domain): approximately 50,000 ft by 45,000 ft—with the EWU campus in the approximate center—or approximately 10 times the general dimensions of the campus (see adjacent graphic), in order to reduce the effect of model boundary conditions on simulated results at the campus location. Model grid cells were set to be 50 ft by 50 ft in the vicinity of campus (i.e., refined to allow for flexibility in extraction and injection well placement as well as to allow for the resulting steeper hydraulic gradients around the wells). The grid was expanded to 1,300 ft by 1,300 ft toward the model boundaries (i.e., expanded to reduce computational needs of the simulations). The model grid was rotated approximately 30 degrees counter-clockwise to allow for convenient assignment of up-gradient and down-gradient hydraulic boundary conditions to represent the general North-Northwest to South-Southeast hydraulic gradient assumed for the campus vicinity.
- The top and bottom of the model were set to a uniform elevation of 2,000 ft and 1,900 ft, respectively; therefore, the model thickness is roughly 100 ft, representing the combined thickness of the basalt interflow zones encountered in Well 2R.
- A uniform hydraulic conductivity of 99 ft per day and a specific storage value of 2.0×10^{-6} ft^{-1} (which relates to a storage coefficient value of 0.0002, given an aquifer thickness of 100 ft) were assigned to the model.[2]
- Boundary conditions—both hydraulic and temperature—were assigned to the northwest and southeast edge of the model to simulate background aquifer conditions. The hydraulic boundary conditions were assigned using the specified head (CHD) package in MODFLOW. The resulting background simulated hydraulic conditions in the vicinity of the campus included a simulated head ranging from 2,130 to 2,160 ft with a hydraulic gradient of 0.01 ft per foot. Extraction and injection wells were assigned to the model, in accordance with well layout and pumping rates described for each GSHP case, using the WEL package in MODFLOW.[3] The temperature boundary conditions were assigned to the same up-gradient and down-gradient model boundary cells and assigned to be 286 Kelvin (or about 55 degrees Fahrenheit). Aerial recharge (i.e., from precipitation infiltration) was not applied to the top of the model, with the assumption that vertical percolation of precipitation to the Grande Ronde Basalt aquifer is

[2] Note that, because the flow model was run in steady state (not transient, or time-varying) conditions, the aquifer storage term is not important for model results.

[3] Case 1, with one extraction well and one injection well, extraction and injection rates were assigned 600 gpm for each well; Case 2, with three extraction wells and three injection wells, extraction and injection rates were assigned 1,200 gpm for each well (or 3,600 gpm total extraction and injection); Case 3, with ten extraction wells and ten injection wells, extraction and injection rates were assigned 1,350 gpm for each well (or 13,500 gpm total extraction and injection).

limited. Rather, up-gradient groundwater recharge to the aquifer is implicitly represented by the CHD boundary conditions.

- As described above, background groundwater temperature was assigned 286 Kelvin (or about 55 degrees Fahrenheit). GSHP injection water (with temperature depending on the operational period of the GSHP system) was applied to the injection well(s). Wintertime relatively cool injection water from the GSHP system was assigned a temperature of 279 Kelvin (or about 42.5 degrees Fahrenheit). Summertime relatively warm injection water from the GSHP system was assigned a temperature of 293 Kelvin (or about 67.7 degrees Fahrenheit). Advection, dispersion, conduction, and thermal retardation are the primary heat transport mechanisms represented in MT3DMS. Heat advection was simulated with a third-order total variation diminishing scheme (the default option in GMS). Dispersion was represented in both longitudinal (parallel to groundwater flow, with a dispersivity value of 0.5) and transverse (perpendicular to groundwater flow, with a dispersivity value of 0.1). Conduction was simulated in MT3DMS with the molecular diffusion coefficient of 2.15×10^{-11}. Thermal retardation was calculated using bulk density (1,961 kg/m^3), sorption coefficient (0.00021 m^3/kg), and porosity (0.25) values such that the resulting retardation factor applied to the model was 2.6.
- The MODFLOW groundwater flow model, including simulated hydraulic effect of pumping from the extraction wells and injecting to the injection wells, was set up in steady-state (not time-varying) mode to represent long-term sustained pumping/injecting conditions. The MT3DMS heat transport model, however, was set up in transient mode with daily timesteps, including 10 stress periods representing five repeated annual cycles of cooling/heating operational periods of the GSHP system. Each cycle of cooling/heating periods included 212 days (from October 1 to April 30) of GSHP heating (during which injected water is relatively cool) and 153 days (from May 1 to September 30) of GSHP cooling (during which injected water is relatively warm). Therefore, the thermal model was set up to simulate the heat transport effect on the aquifer from the anticipated operations of the GSHP system over a 5-year period.

Each GSHP case was then evaluated by simulating the extraction and injection wells (via MODFLOW) and heat transport of injected GSHP system water (via MT3DMS) in general accordance with the pumping (extraction/injection) rates and injected water temperatures described above and with well layouts for each case. The results were evaluated by tracking simulated heat in the aquifer over time, both in plan view (i.e., thermal contours across the campus) and in time series (from a representative model cell) formats. The thermal modeling results of each simulated case are presented in Appendix C.

Thermal modeling indicates that a likely temperature effect from the injection wells would be observed at the extraction wells in less than 5 years for all three case studies. This effect consists of an annual fluctuation from warmer than ambient (ambient equal to 286 degrees Kelvin) to cooler than ambient. However, it is likely that the temperature impact would stabilize (reach a maximum impact) in less than 5 years. The maximum temperature impact that was observed was for Case Study 3. At an arbitrary monitoring point within the extraction well array, temperatures fluctuated between about 291 and 280 degrees Kelvin annually. This seasonal pattern stabilized after about 2 years.

5.0 WELL DESIGN

For the purposes of cost estimation, MSI requested that Landau establish preliminary well design parameters. Well design parameters are largely based on production well testing of EWU Well 2R and proven well yield. Landau assumes Ecology will require injection wells to reinject into the same aquifer interval as the extraction wells, therefore preliminary injection well design recommendations and preliminary extraction well design recommendations are the same. Design parameters are presented in Table 3 and discussed in the following subsections.

Table 3. Preliminary Well Design Recommendations (Based on Well 2R construction)

Diameter	16-inches
Well Depth	1,075 ft bgs
Screen interval	225 ft of screen installed between 677 and 1,075 bgs
Depth to Pump	650 ft bgs

Note: Screened interval is within the Grande Ronde Basalt aquifer.

5.1 Well Diameter

The recommended extraction and injection well diameter is 16 inches. A 16-inch-diameter well can accommodate a well yield of 800 to 1,800 gpm (Driscoll 1986).

5.2 Well Depth and Screen Interval

The recommended well depth and screen interval is 1,145 ft bgs with a 225 ft screen installed between 677 and 1,075 ft bgs.

As a matter of policy, Ecology considers the Wanapum and the Grande Ronde Basalt Formations to be two distinct aquifers. Per WAC Chapters 173-160-181(3) and 173-160-450, water wells may not interconnect aquifers. Ecology typically requires that wells are cased and sealed at least 200 ft into the Grande Ronde Basalt to minimize aquifer interconnection. In the project area, 200 ft into the Grande Ronde Basalt is estimated to be approximately 430 ft bgs. If the well screen interval is 225 ft (approximately the same length as at Well 2R), the minimum well depth would be 665 ft bgs. The maximum well depth would be the estimated depth of the bottom of the Grande Ronde Basalt in this area, which is 1,370 ft. Ultimately, extraction and injection wells would be installed within this range of well depths to intersect sufficient basalt interflow zones to accommodate the design pumping and injection rates. For the purposes of cost estimation, it is recommended the wells target the same depth and screened interval as Well 2R (see Table 3), which discharged 1,300 gpm with only 28 ft of drawdown during a 24-hour constant-rate pumping test.

5.3 Pump Depth

Based on the recommended screen placement, the recommended pump depth is approximately 650 ft bgs. The intake of a pump should be placed above the well screen to minimize the risk of distorted flow patterns occurring in the vicinity of the screen, which can result in well fouling and pump damage (Driscoll 1986, Gjengedal et al. 2019). Also, enough water must be present above the pump suction port (i.e., intake) so that the pump remains submerged during groundwater extraction (i.e., anticipated drawdown does not expose the pump). A pump submergence of 20 ft during pumping is typically sufficient for safe operation; however, the pump specification sheet should be reviewed to confirm the pump net positive suction head required (NPSHr). The NPSHr is the minimum pressure at the suction port of the pump required to keep the pump from cavitating.

6.0 SUMMARY AND RECOMMENDATIONS

The local Grande Ronde Basalt aquifer appears to have the hydraulic characteristics to support a high yield open-loop GSHP system. Landau's and WNR's analysis of the regulatory environment, hydrogeology and aquifer properties, and thermal modeling efforts indicate that the local aquifer could support system capacity demands for all three case study scenarios presented by MSI. For the next step of project feasibility assessment, well installation and pumping tests should be considered to verify aquifer yields and refine well design and well field configuration.

7.0 USE OF THIS REPORT

This report has been prepared for the exclusive use of MSI Engineers for specific application to the Eastern Washington University Ground Source Heat Pump Evaluation project. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. Landau makes no other warranty, either express or implied.

8.0 REFERENCES

Buchanan, J.P. 2007. Modeling Future Groundwater Withdrawals with an Emphasis on Potential Well Interference and Groundwater Mining for the Area Surrounding the city of Cheney, Spokane County, Washington. Prepared for Washington Department of Public Works; city of Cheney, Washington; and Esvelt Environmental Engineering. June.

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Gjengedal, S., Ramstad, R.K., Hilmo, B.O., Frengstad, B.S. 2018. Fouling and clogging surveillance in open loop GSHP systems. Bulletin of Engineering Geology and the Environment (2020) 79:69-82.

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Luzier, J.E., and Burt, R.J. 1974. Hydrology of basalt aquifers and depletion of ground water in east-central Washington: Washington State Department of Ecology. Water-Supply Bulletin 33, 53 p. accessed June 27, 2012.

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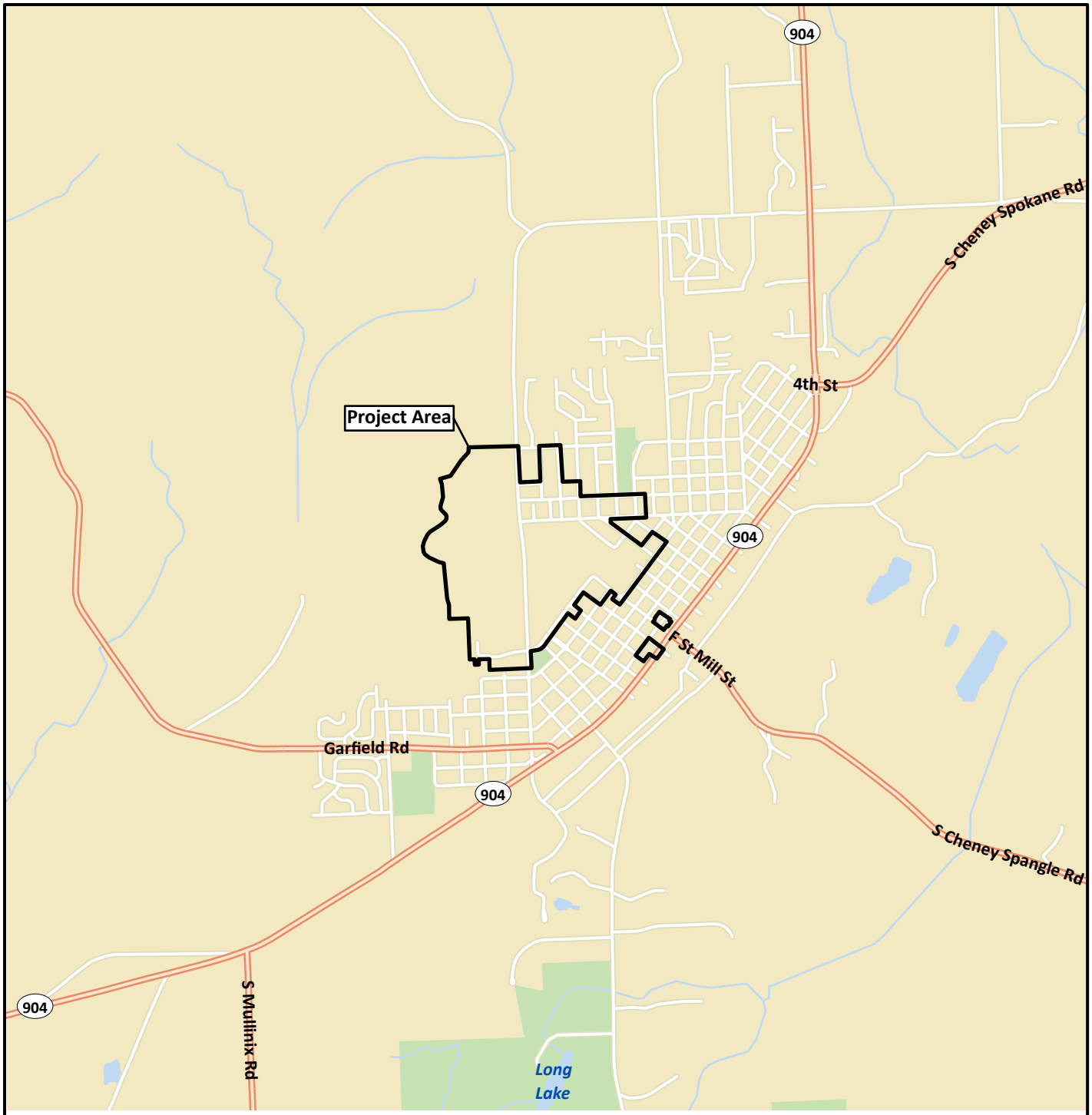
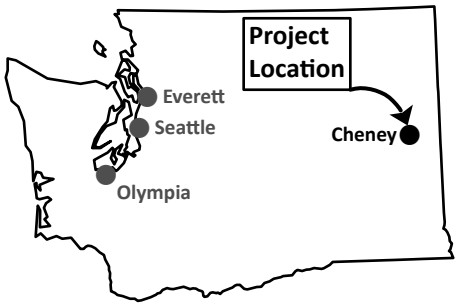
Whiteman, K.J. 1986. Groundwater levels in three basalt hydrologic units underlying the Columbia Plateau. Washington and Oregon, spring 1984: U.S. Geological Survey Water-Resources Investigations Report 86-4046.



N

0 0.5 1

Miles



Data Source: Esri.

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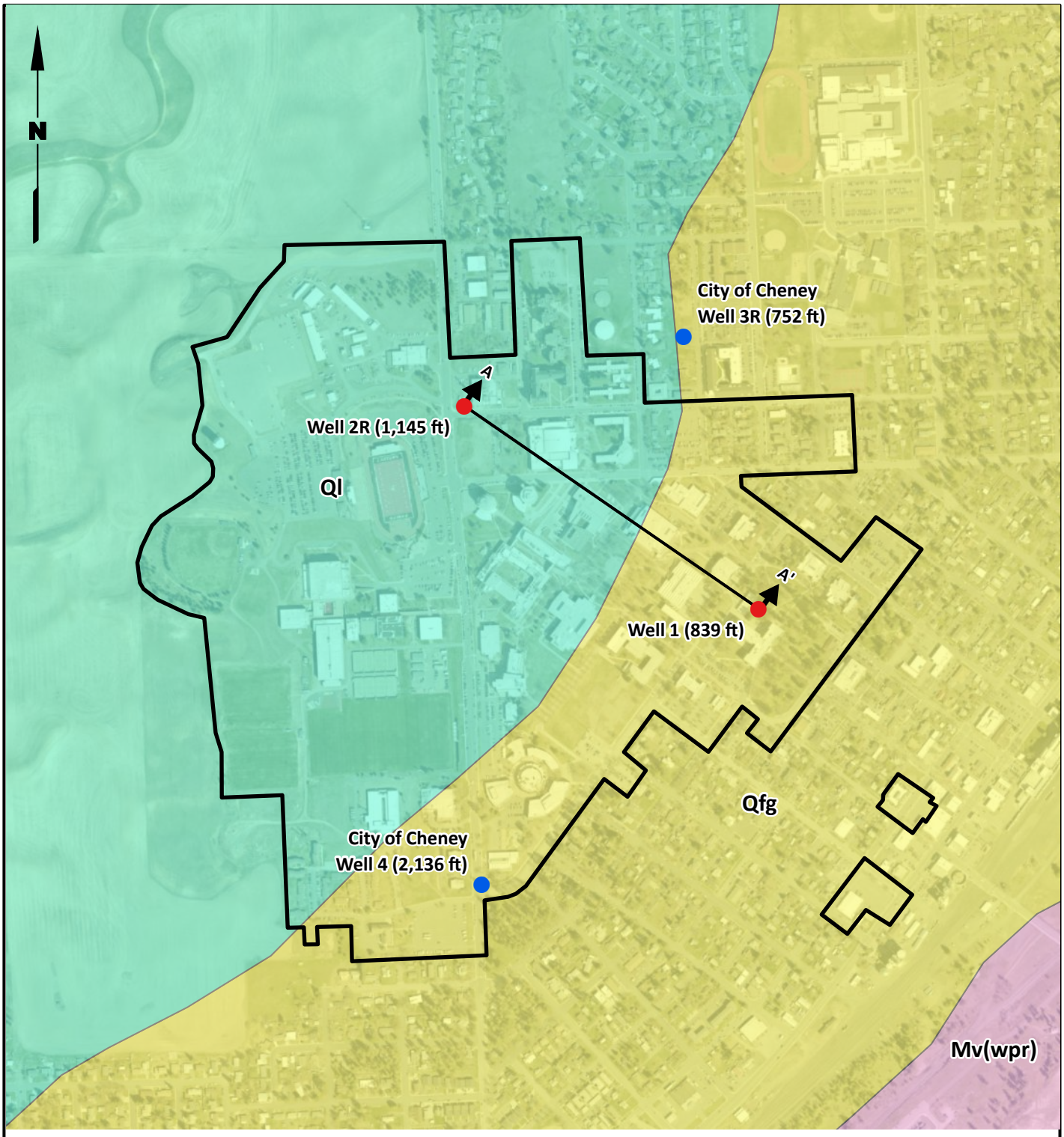
LANDAU ASSOCIATES

Eastern Washington University GSHP Hydrogeologic Evaluation Cheney, Washington	**Vicinity Map**	Figure 1



Legend

- Cross Section Location
- EWU Well Location, Designation, and Depth
- City of Cheney Well Location, Designation, and Depth
- Eastern Washington University Campus
- Mv(wpr) - Wanapum Basalt Unit
- Qfg - Outburst Flood Deposits
- Ql - Loess

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 800 1,600

Scale in Feet

Data Sources: Esri 2023; National Geologic Map Database 2023

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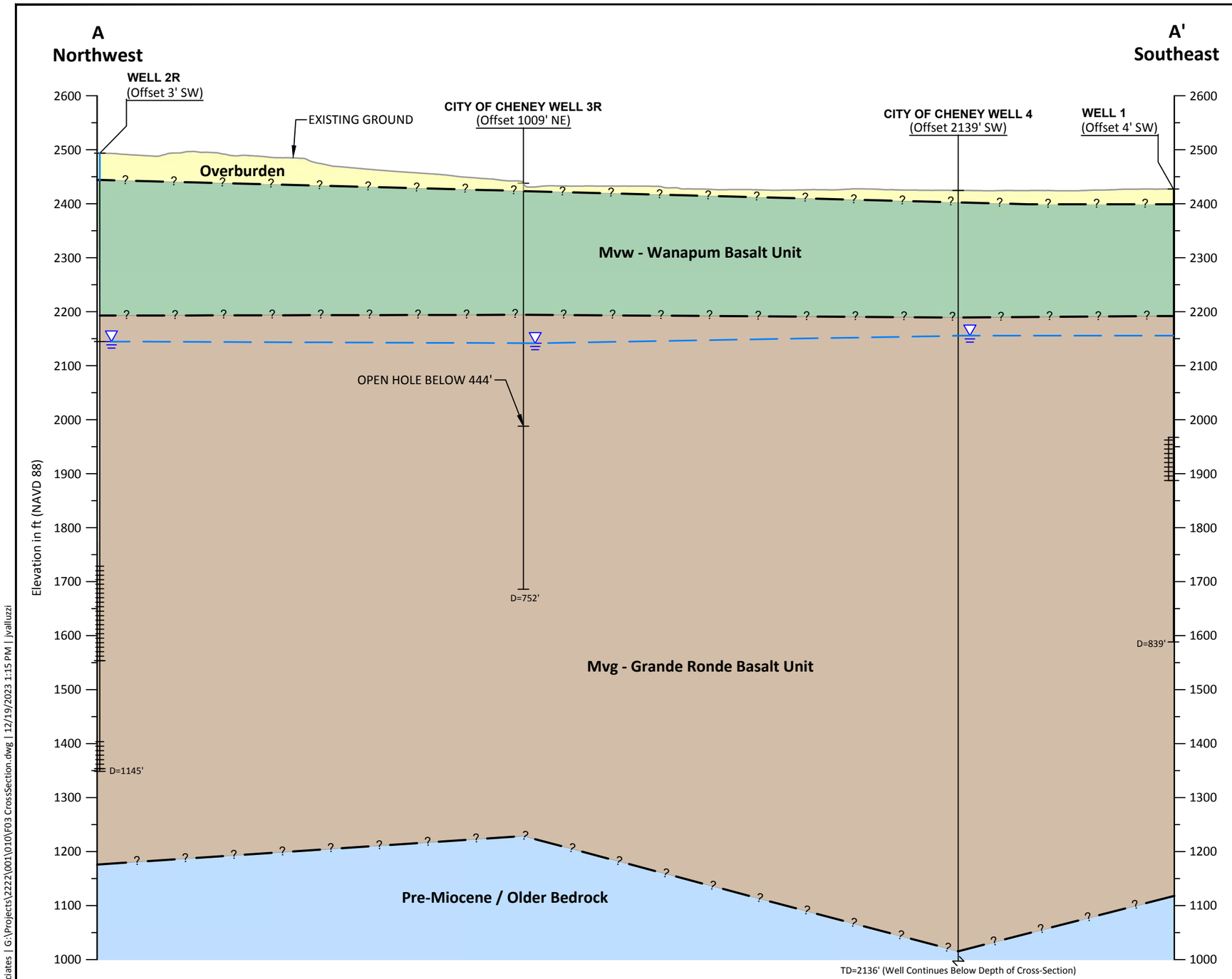
LANDAU ASSOCIATES

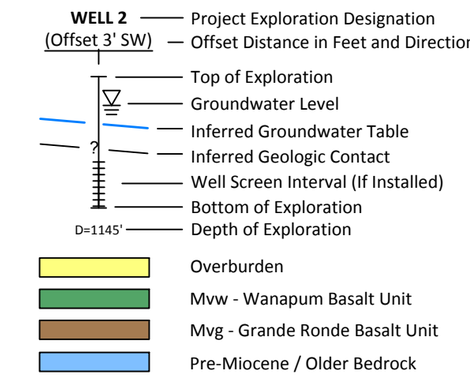
Eastern Washington University GSHP Hydrogeologic Evaluation Cheney, Washington	**Site Plan with Surficial Geology**	Figure 2



Notes

1. Data derived from USGS's Three-Dimensional Model of the Geologic Framework for the Columbia Plateau Regional Aquifer System, Idaho, Oregon, and Washington (Scientific Investigations Report 2010–5246) and Geoengineers (2015) [Water Level].
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend



Source: USGS, 2023

Geologic Profile Alignment A-A'

Horizontal Scale in Feet: 1"=200'
Vertical Scale in Feet: 1"=200'

0 200 400
Scale in Feet

Eastern Washington University
GSHP Hydrogeologic Evaluation
Cheney, Washington

Cross Section A-A'

Figure 3

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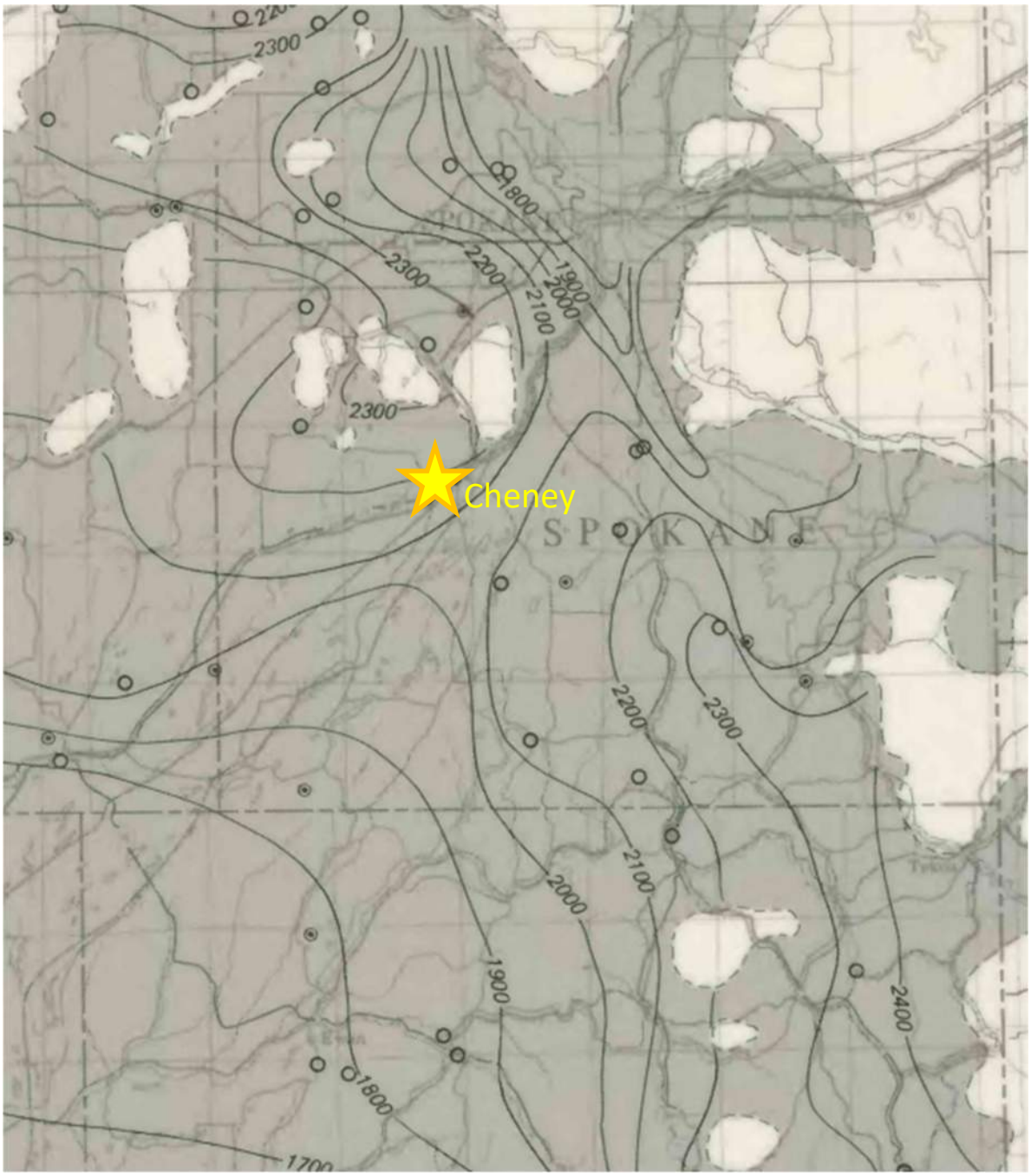
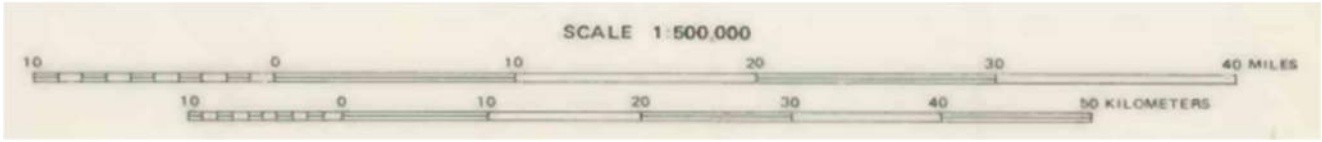




Notes

1. Source – Whiteman, K.J., *Groundwater levels in three basalt hydrologic units underlying the Columbia Plateau, Washington and Oregon, Spring 1984*, 1986, USGS Publications Warehouse.
2. National Geodetic Vertical Datum 1929

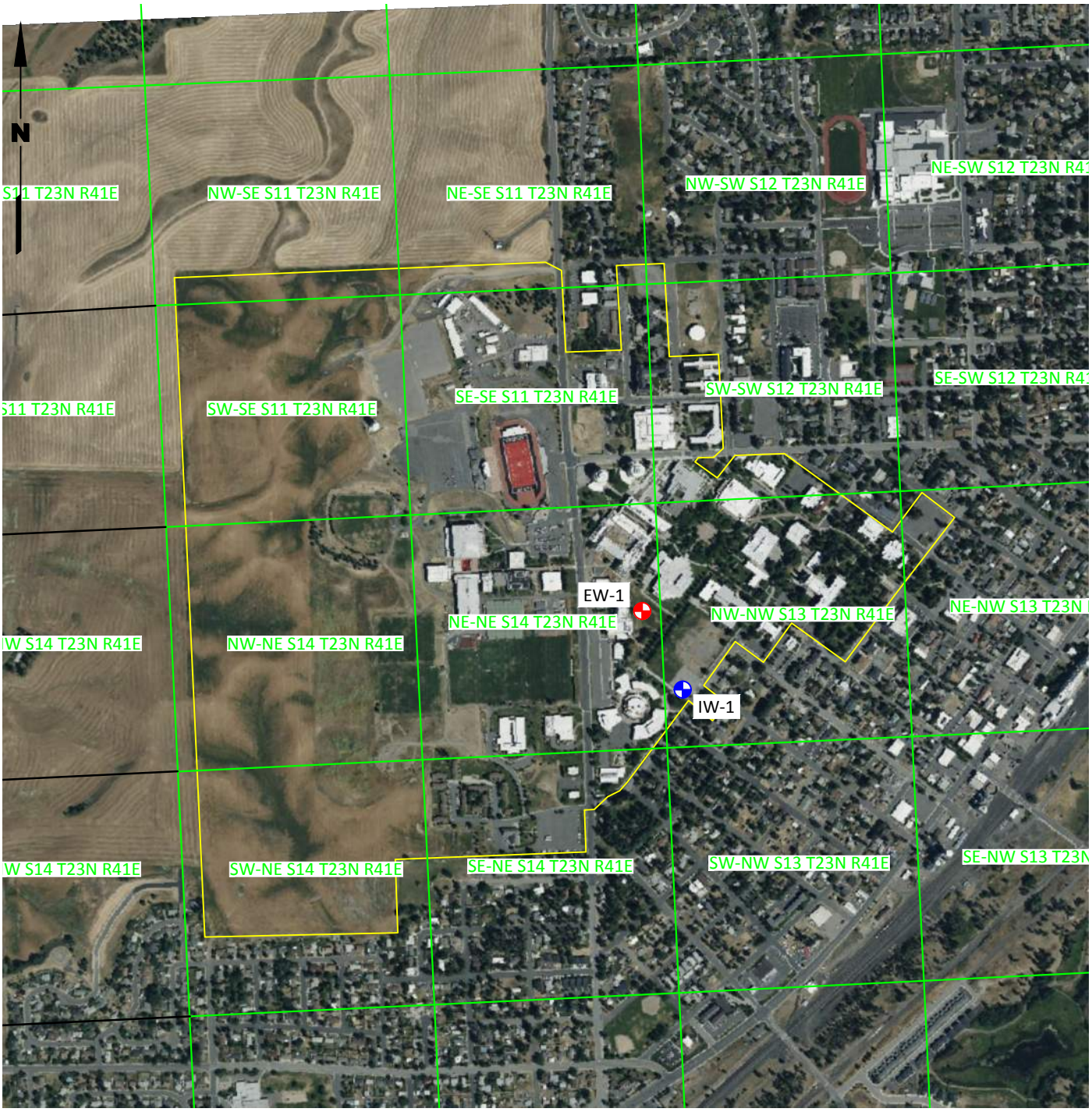
1/5/24 \\tacoma3\project\2222\R\F04HydraulicGradient.docx

LANDAU ASSOCIATES

EWU GSHP Hydrogeologic Evaluation
Cheney, Washington

Groundwater Elevation in the Grande Ronde Basalt

Figure 4



Legend

- Proposed Injection Well Location
- Proposed Extraction Well Location
- Quarter-Quarter Sections (Township & Range)
- EWU Campus Water District Boundary (Place of Use)

0 1000 2000

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth, accessed December 2015

Eastern Washington University
GSHP Hydrogeologic Evaluation
Cheney, Washington

Case Study 1 Well Locations

Figure 5A

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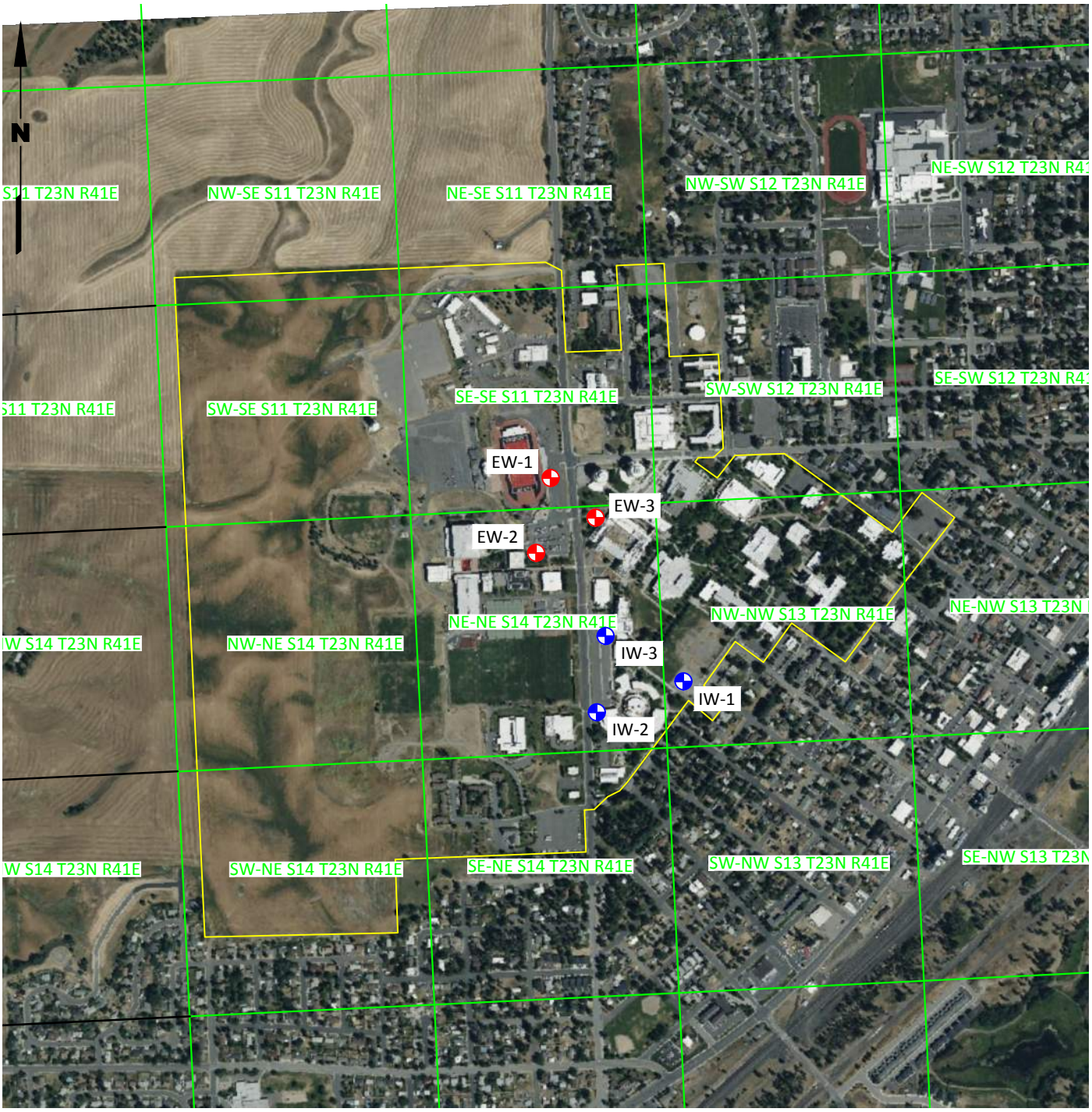

Legend

- Proposed Injection Well Location
- Proposed Extraction Well Location
- Quarter-Quarter Sections (Township & Range)
- EWU Campus Water District Boundary (Place of Use)

0 1000 2000

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth, accessed December 2015

Eastern Washington University
GSHP Hydrogeologic Evaluation
Cheney, Washington

Case Study 2 Well Locations

Figure 5B

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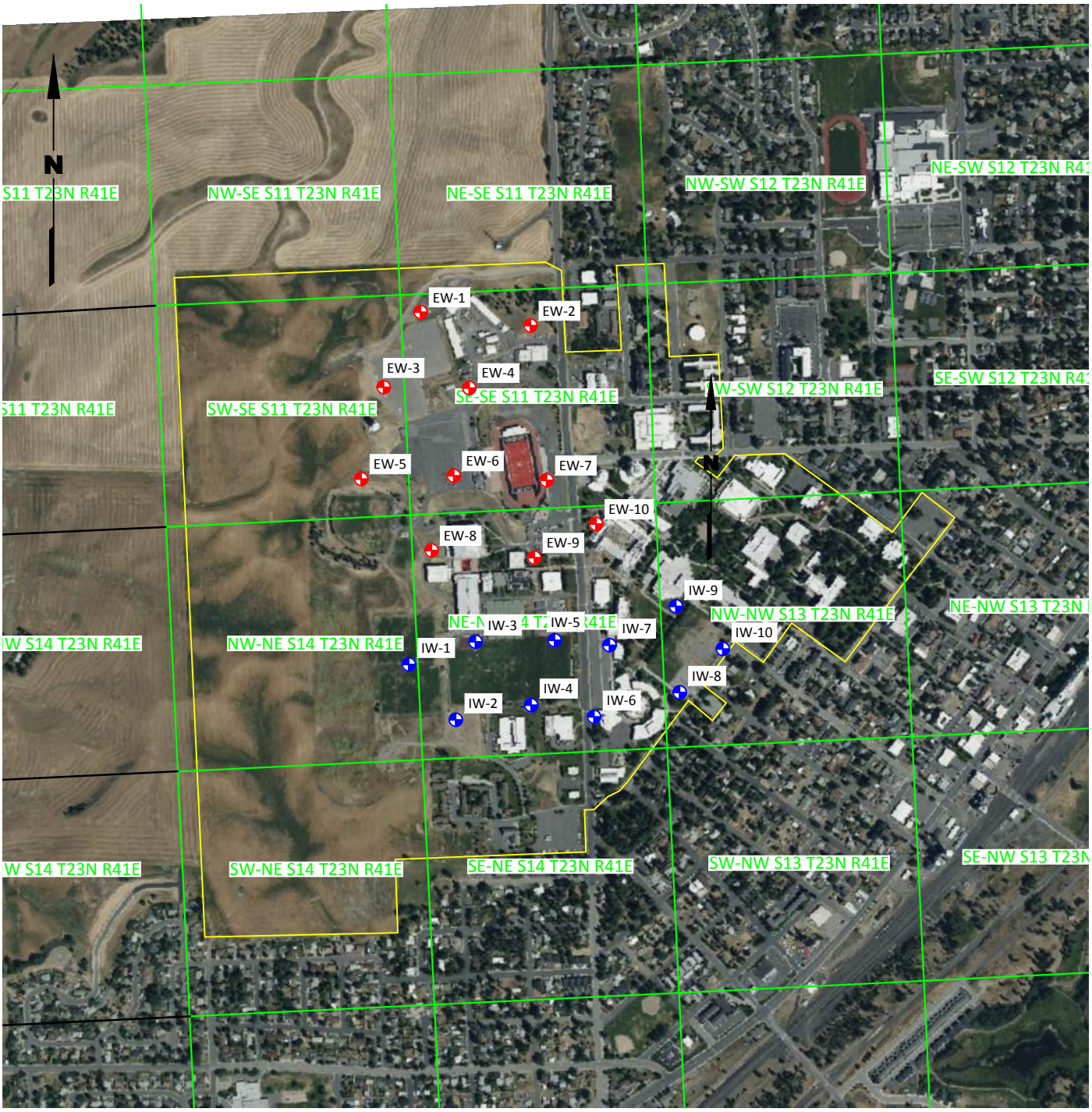


Legend

- Proposed Injection Well Location
- Proposed Extraction Well Location
- Quarter-Quarter Sections (Township & Range)
- EWU Campus Water District Boundary (Place of Use)

0 1000 2000

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth, accessed December 2015

Eastern Washington University
GSHP Hydrogeologic Evaluation
Cheney, Washington

Case Study 3 Well Locations

Figure 5C

LANDAU ASSOCIATES

Landau Associates | G:\Projects\2222\001\CaseStudyMapsJJV2.dwg | 12/19/2023 8:35 AM | caduser

APPENDIX A

Well Logs

Eastern Washington University Well 1 and Well 2R

City of Cheney Well 3R and 4

WATER WELL REPORT

DEPARTMENT OF ECOLOGY State of Washington

Notice of Intent No. WE 32509.
Unique Ecology Well ID Tag No. BLD 014
Site Well Name (if more than one well): WELL #3R.
Water Right Permit/Certificate No. G3-22439P / G3-22439C

Type of Work:
☒ Construction
☐ Decommission ⟹ Original installation NOI No. _____

Proposed Use: ☐ Domestic ☐ Industrial ☒ Municipal ☐ Dewatering ☐ Irrigation ☐ Test Well ☐ Other _____

Construction Type: ☒ New well ☐ Alteration ☐ Deepening ☐ Other _____
Method: ☐ Driven ☐ Jetted ☐ Cable Tool ☐ Dug ☒ Air- ☐ Mud-Rotary

Dimensions: Diameter of boring 19" in., to 752 ft.
Depth of completed well 752. ft.

Construction Details:

Casing	Liner	Diameter	From	To	Wall Thickness	Steel	PVC	Welded	Thread
☒	☐	20 in.	0	116	.375 in.	☒	☐	☒	☐
☒	☐	16 in.	+24	449	.375 in.	☒	☐	☒	☐
☐	☐	____ in.	____	____	____ in.	☐	☐	☐	☐
☐	☐	____ in.	____	____	____ in.	☐	☐	☐	☐

Perforations: ☐ Yes ☒ No Type of perforator used _____
No. of perforations _____ Size of perforations _____ in. by _____ in.
Perforated from _____ ft. to _____ ft. below ground surface

Screens: ☐ Yes ☒ No ☐ K-Packer ⟹ Depth _____ ft.
Manufacturer's Name _____
Type _____ Model No. _____
Diameter _____ in. Slot size _____ in. from _____ ft. to _____ ft.
Diameter _____ in. Slot size _____ in. from _____ ft. to _____ ft.

Sand/Filter pack: ☐ Yes ☒ No Size of pack material _____ in.
Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 444 ft.
Material used in seal CEMENT GROUT.
Did any strata contain unusable water? ☒ Yes ☐ No
Type of water? 5-10 GPM. Depth of strata 150-160 FT.
Method of sealing strata off 16" CASING & CEMENT GROUT.

Pump: Manufacturer's Name _____ Type: _____
H.P. _____ Pump intake depth: _____ ft. Designed flow rate: _____ gpm

Water Levels: Land-surface elevation above mean sea level _____ ft.
Stick-up of top of well casing 24 ft. above ground surface
Static water level 296.5 ft. below top of well casing Date JAN 8/19.
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (cap, valve, etc.)

Well Tests:
Was a pumping test performed? ☐ No ☒ Yes ⟹ by whom? BSE-NW
Yield 1500 gpm with 626 ft. drawdown after 24 hrs.
Yield _____ gpm with _____ ft. drawdown after _____ hrs.
Yield _____ gpm with _____ ft. drawdown after _____ hrs.

Recovery data (time = zero when pump is turned off – water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
5M	313.85	30M	304.45	____	____
10M	310.28	60M	302.16	____	____
15M	307.97	____	____	____	____

Date of pumping test JAN 8/19.
Bailer test _____ gpm with _____ ft. drawdown after _____ hrs.
Air test _____ gpm with stem set at _____ ft. for _____ hrs. Date _____
Artesian flow _____ gpm
Temperature of water 70.1° F Was a chemical analysis made? ☒ Yes ☐ No

Location (see instructions on page 2): ☐ WWM or ☐ EWM
SW ¼-¼ of the SW ¼; Section 12 · Township 23N Range 41E.
Latitude (Example: 47.12345) _____
Longitude (Example: -120.12345) _____

Driller's Log/Construction or Decommission Procedure
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. Use additional sheets if necessary.

Material	From	To
Top Soil & OLD Drill cuttings	0	9
Red Clay.	9	16.
Reddish Gray Broken Basalt.	16	33.
Dark Brown Hard Clay.	33	38.
Soft Clay & Broken Basalt.	38	45.
Medium Hard. Gray Basalt	45	52.
Clay & Broken Basalt.	52	58.
Broken Basalt.	58	67
Clay & Broken Basalt.	67	72.
Red Clay & Broken Basalt.	72	78.
Brown Clay & Broken Basalt	78	80.
Medium Hard Basalt.	80	90.
Clay & Broken Basalt.	90	110.
Medium Hard Gray Basalt.	110.	137.
Medium Hard Broken Basalt.	137	150.
Gray ish Brown Soft Broken Basalt Clay (WATER. 5-10 GPM)	150	162.
Medium Hard Broken Basalt.	162.	189.
Hard Gray Basalt.	189	241.
Broken Basalt & Gray Clay.	241.	267
Hard Gray Basalt.	267	304
Soft Gray Basalt.	304	316.
Hard Gray Basalt.	316	367.
Soft Gray Basalt.	367	413.
Hard Gray Basalt.	413	428.
Medium Hard Gray & Brown Basalt	428	438.
Hard Gray Basalt.	438	458.
Soft Broken Black Basalt with Green Clay (WATER. 400-500 GPM.)	458	480.

Start Date SEPT 14/18 Completed Date JAN 18/19.

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ PE – Print Name Rob Dobush.
Signature Robt Dobush.
License No. 2820
IF TRAINEE: Sponsor's License No.
Sponsor's Signature

Drilling Company BLUE STAR ENTERPRISES NW INC
Address 2019 BUTLER LOOP.
City, State, Zip RICHLAND WA. 99354.
Contractor's Registration No. BLUESEN 942RM Date JAN 21/19.

WATER WELL REPORT

DEPARTMENT OF ECOLOGY State of Washington

Notice of Intent No. WE 32509.

Unique Ecology Well ID Tag No. BLD 014.

Site Well Name (if more than one well):

Water Right Permit/Certificate No.

Property Owner Name

Well Street Address

City County

Tax Parcel No.

Was a variance approved for this well? ☐ Yes ☐ No

If yes, what was the variance for?

Location (see instructions on page 2): ☐ WWM or ☐ EWM

¼-¼ of the ¼; Section Township Range

Latitude (Example: 47.12345)

Longitude (Example: -120.12345)

Type of Work:
☐ Construction
☐ Decommission ⟹ Original installation NOI No.

Proposed Use: ☐ Domestic ☐ Industrial ☐ Municipal ☐ Dewatering ☐ Irrigation ☐ Test Well ☐ Other

Construction Type: ☐ New well ☐ Alteration ☐ Deepening ☐ Other

Method: ☐ Driven ☐ Jetted ☐ Cable Tool ☐ Dug ☐ Air- ☐ Mud-Rotary

Dimensions: Diameter of boring in., to ft.
Depth of completed well ft.

Construction Details:

Casing	Liner	Diameter	From	To	Wall Thickness	Steel	PVC	Welded	Thread
☐	☐	in.			in.	☐	☐	☐	☐
☐	☐	in.			in.	☐	☐	☐	☐
☐	☐	in.			in.	☐	☐	☐	☐
☐	☐	in.			in.	☐	☐	☐	☐

Perforations: ☐ Yes ☐ No Type of perforator used
No. of perforations Size of perforations in. by in.
Perforated from ft. to ft. below ground surface

Screens: ☐ Yes ☐ No ☐ K-Packer ⟹ Depth ft.
Manufacturer's Name
Type Model No.
Diameter in. Slot size in. from ft. to ft.
Diameter in. Slot size in. from ft. to ft.

Sand/Filter pack: ☐ Yes ☐ No Size of pack material in.
Materials placed from ft. to ft.

Surface Seal: ☐ Yes ☐ No To what depth? ft.
Material used in seal
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? Depth of strata
Method of sealing strata off

Pump: Manufacturer's Name Type:
H.P. Pump intake depth: ft. Designed flow rate: gpm

Water Levels: Land-surface elevation above mean sea level ft.
Stick-up of top of well casing ft. above ground surface
Static water level ft. below top of well casing Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (cap, valve, etc.)

Well Tests:
Was a pumping test performed? ☐ No ☐ Yes ⟹ by whom?
Yield gpm with ft. drawdown after hrs.
Yield gpm with ft. drawdown after hrs.
Yield gpm with ft. drawdown after hrs.

Recovery data (time = zero when pump is turned off – water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of pumping test
Bailer test gpm with ft. drawdown after hrs.
Air test gpm with stem set at ft. for hrs. Date
Artesian flow gpm
Temperature of water °F Was a chemical analysis made? ☐ Yes ☐ No

Driller's Log/Construction or Decommission Procedure

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. Use additional sheets if necessary.

Material	From	To
Decomposed Basalt + Brown Clay+wood	480	485.
Soft Broken Basalt + Green Clay.	485	528.
Broken Gray Basalt.	528	540.
Soft Broken Basalt. with Red Chips (Water 700-800gpm).	540	546.
Medium Hard. Gray Broken Basalt.	546	593.
Hard Gray Basalt.	593	646.
Broken Gray Basalt	646.	648.
Hard Black Basalt.	648.	654.
Hard Broken Black Basalt + Red Chip (Water. 800-900gpm)	654	656.
Hard Black Basalt.	656.	673.
Hard Broken Black Basalt + Red Chips (Water. 900-1000gpm).	673	676.
Hard Black Basalt.	676.	680.
Hard Broken Black Basalt + Brown Chips (Water + 1000GPM)	680	690
Hard Black Basalt.	690	719.
Hard Broken Black Basalt	719	722.
Hard Black Basalt	722	738.
Hard Broken Black Basalt	738	740.
Hard Black Basalt (Water + 1100 GPM).	740	752.

Start Date Completed Date

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Trainee ☐ PE – Print Name

Signature

License No.

IF TRAINEE: Sponsor's License No.

Sponsor's Signature

Drilling Company

Address

City, State, Zip

Contractor's Registration No. Date

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

Water Right Permit No. _____

(1) OWNER: Name CITY OF CHENEY Address CHENEY WA.

(2) LOCATION OF WELL: County SPOKANE CO. SW ¼ NW ¼ Sec 13 T. 23 N., R. 41 W.M.

(2a) STREET ADDDRESS OF WELL (or neareat address) 7TH + WASHINGTON CHENEY WA

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☒ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) # 4

Abandoned ☐ New well ☐ Method: Dug ☐ Bored ☐
Deepened ☒ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 12"X10"X8" inches.
Drilled 2136 feet. Depth of completed well 2136 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from +2 ft. to 800 ft.
Welded ☒ 10 " Diam. from 784 ft. to 1226 ft.
Liner inatalled ☒
Threaded ☐ 8 " Diam. from 1196 ft. to 1936 ft.

Perforations: Yes ☒ No ☐
Type of perforator used MILL CUT
SIZE of perforationa ¼ in. by 3 in.
240 perforationa from 1558 ft. to 1573 ft.
4896 perforations from 1630 ft. to 1936 ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒
Manufacturer'a Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot aize _____ from _____ ft. to _____ ft.

Gravel packed: Yea ☐ No ☒ Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 1226 ft.
Material used in seal NEAT CEMENT GROUT
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of atrata _____
Method of sealing atrata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean aea level _____ ft.
Static level 269 ft. below top of well Date 6-17-91
Arteaian preaaure _____ lbs. per aquare inch Date _____
Arteaian water ia controlled by _____ (Cap, valva, atc.))

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yea ☐ No ☒ If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hra.
" " " "
" " " "

Recovery data (time taken aa zero when pump turned off) (water level measured from well top to water level)

Tima	Water Level	Tima	Water Level	Tima	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with atem aet at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water 72° Was a chemical analyais made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, aize of material and structure, and ahow thickness of aquifera and the kind and nature of the material in each atratum penetrated, with at leaat one entry for each change of information.

MATERIAL	FROM	TO
SANDY CLAY + BASALT	616	692
GREY BASALT	692	722
BROWN CLAY	722	753
GREY BASALT	753	880
DARK GRAY CLAY & BASALT	880	941
BLACK BASALT	941	956
GREY BASALT	956	1216
GREY BASALT FRACTURED	1216	1240
TAN CLAY	1240	1375
GREY CLAY	1375	1480
BROWN CLAY	1480	1555
BLACK QUARTSITE FRAC ★	1555	1575
GREY CLAY	1575	1622
GREY QUARTSITE ★	1622	1672
GREEN QUARTSITE ★	1672	1740
GREY QUARTSITE ★	1740	1802
GREEN QUARTSITE ★	1802	1933
DARK GRAY QUARTSITE ★	1933	2136

★ INDICATES WATER BEARING ZONE

RECEIVED
AUG 30 1991
DEPARTMENT OF ECOLOGY
SPOKANE REGIONAL OFFICE

Work started 4-12 , 1991 Completed 7-31 , 1991

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME HOLMAN DRILLING CORP (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address E3410 9TH AVE SPOKANE WA.

(Signed) Rudolf Holman (WELL DRILLER) License No. 0189

Contractor's Registration No. HO-IH-AD-C4-080A Date AUG 28 , 1991

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

180477

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

- [x] Construction
- [ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W 111976

CURRENT

Notice of Intent No. W 111976

Unique Ecology Well ID Tag No. AGC 098

Water Right Permit No. G3-25018 & 8997

Property Owner Name EASTERN WASHINGTON UNIVERSITY

Well Street Address 526 5TH STREET - PLANT UTILITIES BUILDING

City CHENEY **County** SPOKANE

Location NE 1/4-1/4 NW 1/4 Sec 13 Twn 23 R 41 EWM or WWM [x] circle [ ] one

Lat/Long (s, t, r Still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

PROPOSED USE: [ ] Domestic [ ] Industrial [x] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____

[x] New well [ ] Reconditioned [ ] Deepened

Method: [ ] Dug [ ] Bored [ ] Driven [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 12 inches, drilled 839 ft.

Depth of completed well 839 ft.

CONSTRUCTION DETAILS

Casing Installed:
- [x] Welded 20" Diam. from 0 ft. to 65 ft.
- [x] Liner installed 16" Diam. from 0 ft. to 461 ft.
- [ ] Threaded 14" Diam. from 318 ft. to 630 ft.

Perforations: [ ] Yes [x] No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: [ ] Yes [x] No [ ] K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: [ ] Yes [x] No [ ] Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: [x] Yes [ ] No To what depth? 461 ft.

Material used in seal NEAT CEMENT

Did any strata contain unusable water? [ ] Yes [x] No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 277 ft. below top of well Date 4-27-04

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? [ ] Yes [x] No If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test N/A gal./min. with _____ ft. drawdown after _____ hrs.

Airtest N/A gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? [ ] Yes [x] No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
FILL MATERIAL	0	5
CLAY, BROWN	5	12
CLAY, BROWN W/ BOULDERS	12	54
BASALT, BROWN, SOFT	54	65
BASALT, BLACK, HARD	65	249
BASALT, BLACK, SOFT	249	254
BASALT, BLACK, HARD	254	390
BASALT, BLACK, SOFT - H2O	390	395
BASALT, BLACK, MED.	395	424
BASALT, BLACK, FRAC - H2O	424	433
CLAY, GRAY	433	437
BASALT, BLACK, MED.	437	443
BASALT, BLACK, HARD	443	449
BASALT, BLACK, SOFT	449	450
BASALT, BLACK, MED.	450	457
BASALT, BLACK, HARD	457	463
BASALT, BLACK, VASICULAR	463	469
BASALT, BLACK, MED.	469	497
BASALT, BLACK, HARD	497	503
BASALT, BLACK, SOFT	503	513
BASALT, BLACK, HARD	513	540
BASALT, BLACK, MED.	540	549
SAND, GRAY, FINE - H2O	549	611
CLAY, BROWN	611	624
BASALT, BLACK, SOFT	624	626
CLAY, GRAY AND GREEN	626	644
BASALT, BLACK, SOFT - MED.	644	660
BASALT, BLACK, HARD	660	791
BASALT, BLACK, MED. - H2O	791	796
THIS ZONE PRODUCING GRAVELS		
BASALT, BLACK, HARD	796	819

Start Date 7-25-03 Completed Date 4-27-04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[x] Driller [ ] Engineer [ ] Trainee Name (Print) GLEN FRACHISEUR

Driller/Engineer/Trainee Signature _____

Driller or trainee License No. 2544

Drilling Company INTERMOUNTAIN DRILLING

Address 3419 HIGHWAY 57

City, State, Zip PRIEST RIVER, ID 83856

Contractor's Registration No. INTERDI088LD Date 9-28-05

If TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

RECEIVED SEP 29 2005 DEPARTMENT OF ECOLOGY

Ecology is an Equal Opportunity Employer.

ECY 050-1-20 (Rev 3/05)

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

☉ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W 111976

CURRENT
Notice of Intent No. W 111976

Unique Ecology Well ID Tag No. AGC 098

Water Right Permit No. G3-25018 & 8997

Property Owner Name EASTERN WASHINGTON UNIVERSITY

Well Street Address 526 5TH STREET - PLANT UTILITIES BUILDING

City CHENEY **County** SPOKANE

Location NE 1/4-1/4 NW 1/4 Sec 13 Twn 23 R 41 EWM or WWM ☑ circle ☐ one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

PROPOSED USE: ☐ Domestic ☐ Industrial ☑ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____

☑ New well ☐ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☑ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 12 inches, drilled 839 ft.
Depth of completed well 839 ft.

CONSTRUCTION DETAILS

Casing Installed:
☑ Welded 20 " Diam. from 0 ft. to 65 ft.
☑ Liner installed 16 " Diam. from 0 ft. to 461 ft.
☐ Threaded 14 " Diam. from 318 ft. to 630 ft.

Perforations: ☐ Yes ☑ No
Type of perforator used _____
SIZE of perfs _____ in. by _____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: ☐ Yes ☑ No ☐ K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☑ No ☐ Size of gravel/sand _____
Materials placed from _____ ft. to _____ ft.

Surface Seal: ☑ Yes ☐ No To what depth? 461 ft.
Material used in seal NEAT CEMENT
Did any strata contain unusable water? ☐ Yes ☑ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 277' ft. below top of well Date 4-27-04
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☑ No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test N/A gal./min. with _____ ft. drawdown after _____ hrs.
Airtest N/A gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? ☐ Yes ☑ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
BASALT, BLACK, SOFT - SAND, GRAY	819	822
ENCOUNTERED GRAY SAND @ 822'		
BASALT, BLACK, HARD	822	839

Start Date 7-25-03 Completed Date 4-27-04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☑ Driller ☐ Engineer ☐ Trainee Name (Print) GLEN FRACHISEUR

Driller/Engineer/Trainee Signature _____

Driller or trainee License No. 2544

Drilling Company INTERMOUNTAIN DRILLING

Address 3419 HIGHWAY 57

City, State, Zip PRIEST RIVER, ID 83856

If TRAINEE,
Driller's Licensed No. _____
Driller's Signature _____

Contractor's Registration No. INTERDI088LD Date 9-28-05

Ecology is an Equal Opportunity Employer.

RECEIVED
SEP 29 2005
DEPARTMENT OF ECOLOGY

ECY 050-1-20 (Rev 3/05)

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)* 381294

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION*

Notice of Intent Number _____

PROPOSED USE: ☐ Domestic ☐ Industrial ☒ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) 1

☐ New well ☒ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS: Diameter of well _ inches, drilled 0 ft. Depth of completed well 839 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 8" Diam. from 415 ft. to 643 ft.
☐ Liner installed ____" Diam. from ____ ft. to ____ ft.
☐ Threaded ____" Diam. From ____ ft. to ____ ft.

Perforations: ☒ Yes ☐ No

Type of perforator used _____

SIZE of perfs 1/4in. by 2 in. and no. of perfs 400 from 460 ft. to 540ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☐ Yes ☒ No To what depth? ___ft.

Material used in seal _____

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 282 ft. below top of well Date 10/14/2009

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? H2O

Yield: 354 gal./min. with 47.2ft. drawdown after 24 hrs.

Yield: 354 gal./min. with 25 ft. drawdown after 1 hrs.

Yield: _____gal./min. with _____ft. drawdown after _____hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _ gal./min. with _____ft. drawdown after _____hrs.

Airtest 400+ gal./min. with stem set at _____ft. for _____hrs.

Artesian flow _____g.p.m. Date _____

Temperature of water COLD Was a chemical analysis made? ☐ Yes ☒ No

CURRENT

Notice of Intent No. WE10084

Unique Ecology Well ID Tag No. APC-936

Water Right Permit No. _____

Property Owner Name Eastern Washington University

Well Street Address 526 5th STreet Plant Utilities Bldng

City Cheney County Spokane

Location NE1/4-1/4 NW1/4 Sec 13 Twn 23 R 41E **(s, t, r Still REQUIRED)** EWM ☒ Or WWM ☐

Lat/Long Lat Deg ____ Lat Min/Sec ____
Long Deg ____ Long Min/Sec ____

Tax Parcel No. (Required) 13141.0001

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Perforated 14" casing	460	540
Cut & remove 14" casing at	455	455
Install 8" casing	415	643
Cement grout pumped from	643	540
Not able to keep cement in		
hole about 540'. Filled		
thief zone with 3/8 Bentonite		
Chips	540	415
Cleaned out well to 839'		
Developed well, small trace		
of sands		
REVISED April 30, 2010		

RECEIVED
MAY 10 2010
DEPARTMENT OF ECOLOGY
EASTERN REGIONAL OFFICE

Start Date 7/6/2009 Completed Date 12/16/09

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) LOUIE HANNER

Driller/Engineer/Trainee Signature

Driller or trainee License No. 1472

IF TRAINEE; Driller's License No:

Driller's Signature:

Drilling Company H2O WELL SERVICE INC.

Address 582 W. HAYDEN AVE.

City, State, Zip HAYDEN , ID, 83835

Contractor's Registration No. H2OWESI101DW Date 10/15/09

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Material Description Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
PPM	Parts per million
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

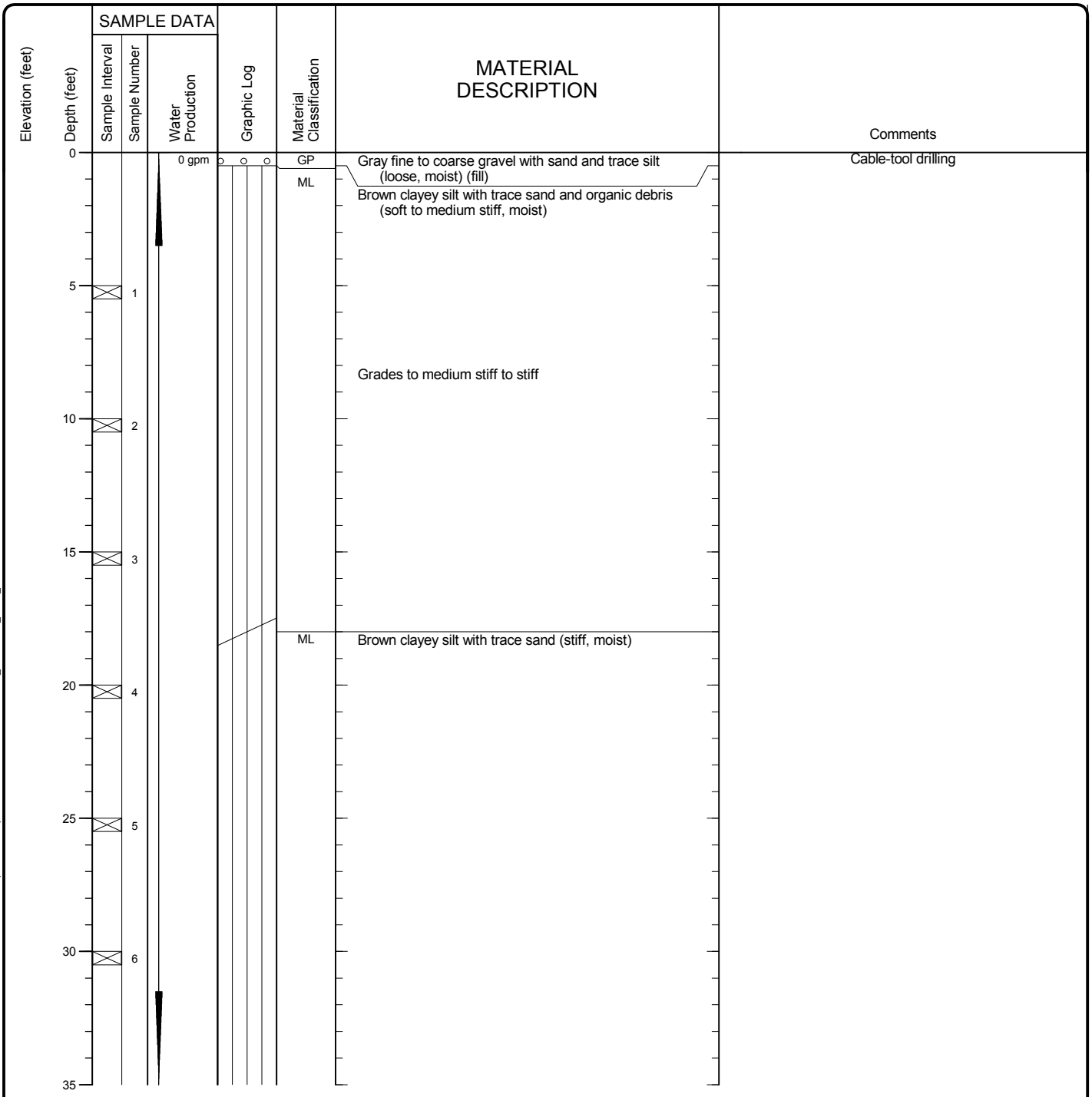
KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE C-1

Drilled Start 12/3/2014 End 3/20/2015	Total Depth (ft) 1145	Logged By JER Checked By JWP	Driller Blue Star Enterprises Northwest	Drilling Method Cable-Tool (Overburden) Air Rotary (Rock/Interbeds)
Sampling Method: Grab		Drilling Equipment 72 Speed Star (Cable-Tool) Portadrill TLS (Air Rotary)		A production well (Ecology No. 8IN 135) was installed to a depth of 1145 (ft).
Surface Elevation (ft) Vertical Datum Undetermined		Top of Casing Elevation (ft)		Groundwater: Date Measured 4/22/2015; Depth to Water (ft) 349.10; Elevation (ft)
Latitude Longitude		Horizontal Datum		

Notes: Well 2R is constructed of 16-inch O.D. steel casing from -1 to approximately 663 feet in depth, 14-inch O.D. steel casing from approximately 650 to 755 feet in depth and 10-inch I.D. steel liner assembly from approximately 747 to 1, 145 feet in depth.



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 1 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	Sample Number	Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
	35		7	0 gpm				
						ML	Brown clayey silt (medium stiff to stiff, moist)	
	40		8					
	45		9					
	50		10			ML	Brown clayey silt with gravel, sand and occasional cobbles (medium stiff to stiff, moist)	
						Basalt	Basalt (weathered dense interior), medium gray to brown, fine to medium grained, moderately weathered, abundant light brown oxidized surfaces, occasional secondary mineralization of fracture surfaces, non-vesicular, sparsely microphyric	Air rotary drilling begins at 52 feet
	55		11					
	60		12					
	65		13					
						Basalt	Basalt (dense interior), medium to dark gray, medium grained, slightly weathered, occasional oxidized surfaces, no secondary mineralization, non-vesicular, occasional subrounded fine gravel (basalt), sparsely microphyric	
	70		14					
	75		15					
						Basalt		

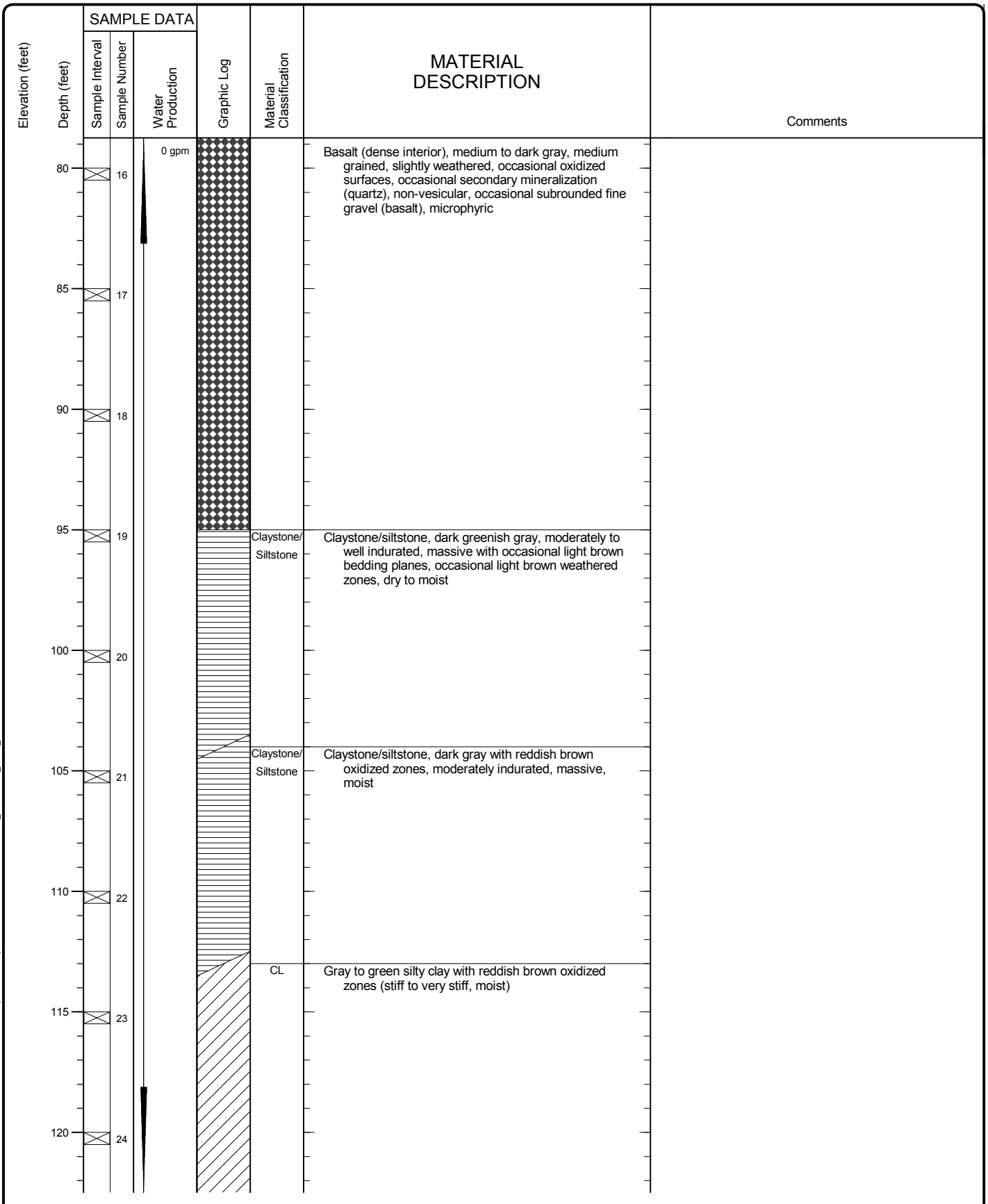
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 2 of 27



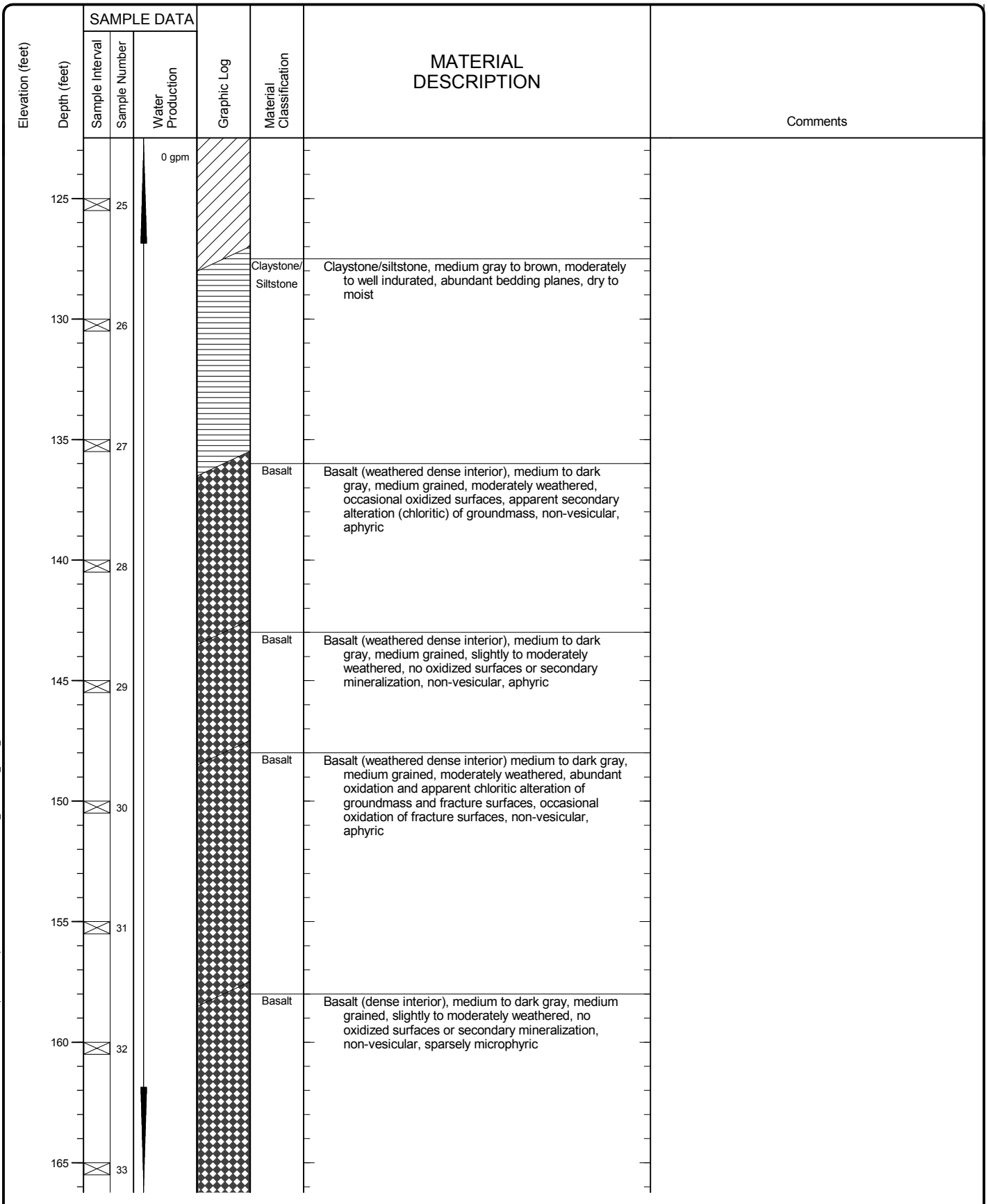
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 3 of 27



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 4 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
				0 gpm				
	170	☒	34					
						Basalt	Basalt (weathered interflow), olive gray, fine to medium grained, moderately weathered, minor oxidation and apparent chloritic groundmass alteration, slightly vesicular with occasional infilling (clay), aphyric	
	175	☒	35					
						Basalt	Basalt (dense interior), dark gray, fine to medium grained, fresh to slightly weathered, no oxidized or mineralized surfaces, non-vesicular, aphyric	
	180	☒	36					
	185	☒	37					
	190	☒	38					
						Basalt	Basalt (dense interior), dark gray, fine to medium grained, slightly weathered, no oxidized surfaces, occasional mineralized (quartz and/or epidote) surfaces, occasional vesicular subrounded clasts in generally non-vesicular rock mass, no infilling of vesicles, aphyric	
	195	☒	39					
	200	☒	40					
						Basalt	Basalt (dense interior), medium to dark gray, medium grained, fresh to slightly weathered, no oxidized or mineralized surfaces, abundant small (<1 millimeter) vesicles grading to non-vesicular at about 210 feet, aphyric	
	205	☒	41					

Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 5 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
	210	☒	42	0 gpm				
	215	☒	43					
		☒	44					Fast, smooth drilling from about 217 to 218 feet
	220	☒	45			Basalt	Basalt (dense interior) medium to dark gray, fine to medium grained, slightly weathered with grayish brown moderately weathered zones, occasional oxidized surfaces, non-vesicular, aphyric	
	225	☒	46					Smooth, slow drilling below about 228 feet
	230	☒	47					
	235	☒	48					
	240	☒	49					
						Basalt	Basalt (dense interior) medium to dark gray, fine to medium grained, fresh to slightly weathered, occasional oxidized surfaces, non-vesicular, aphyric	Rough drilling from about 243 to 248 feet
	245	☒	50					
	250	☒	51					

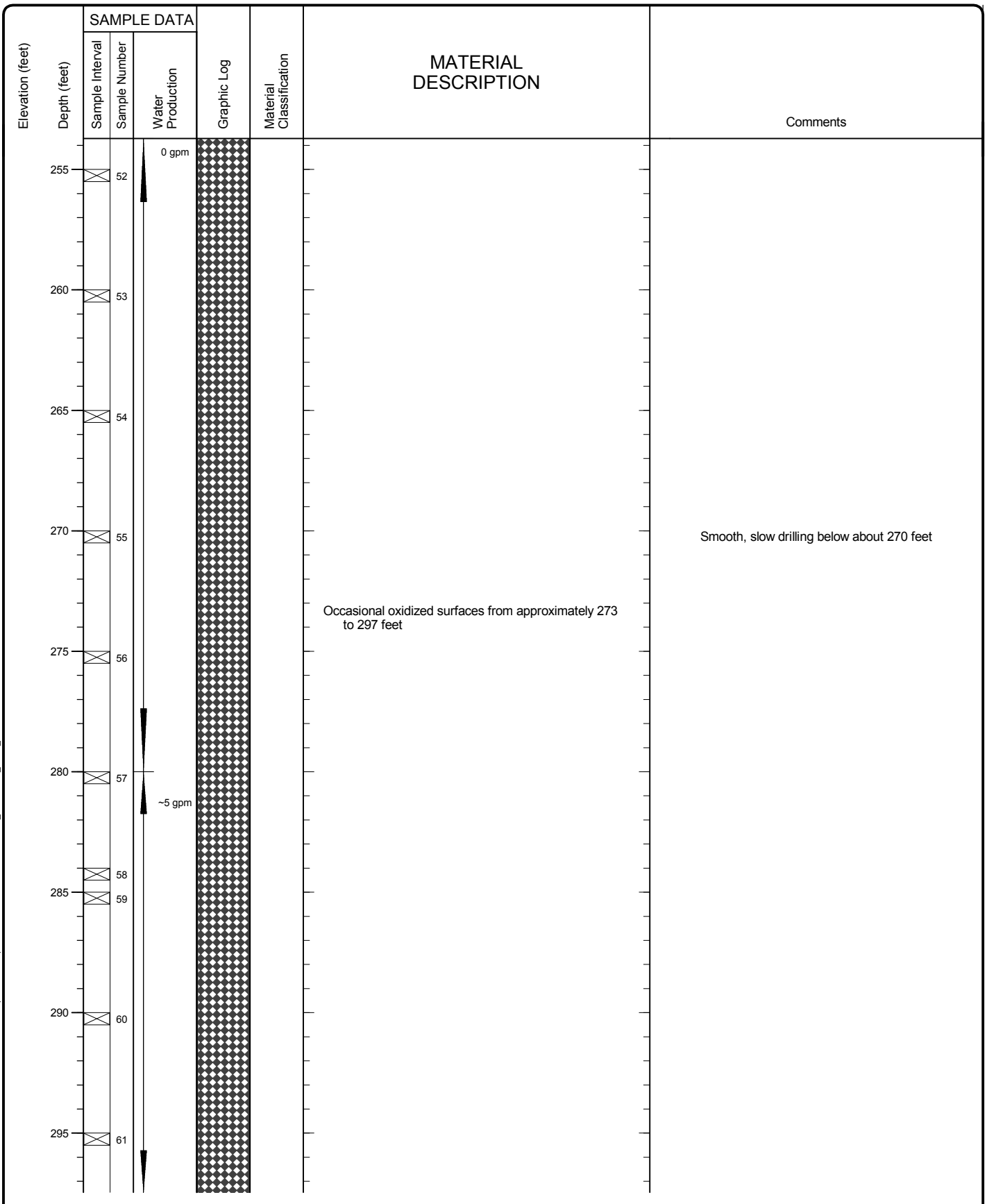
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 6 of 27



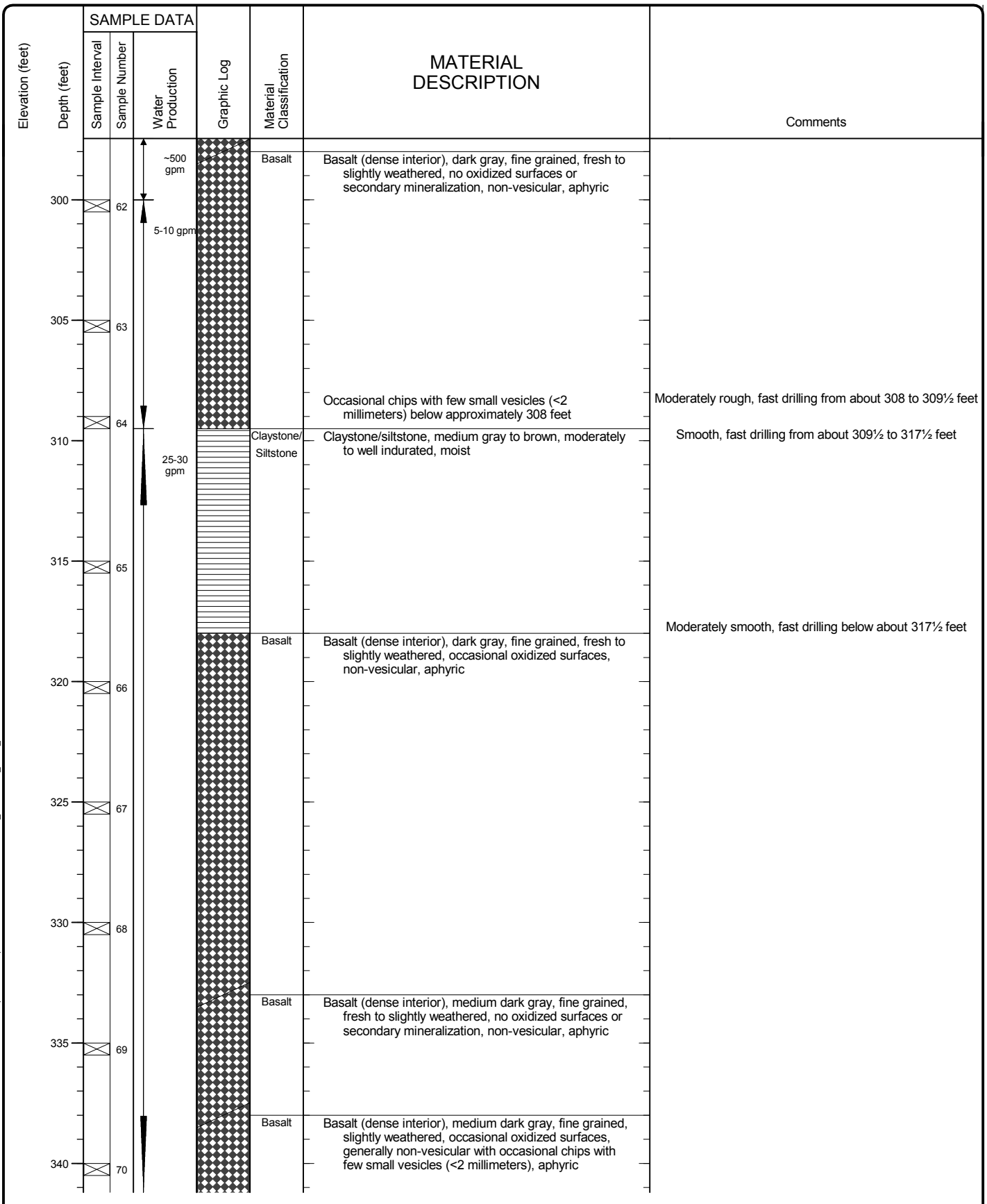
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 7 of 27



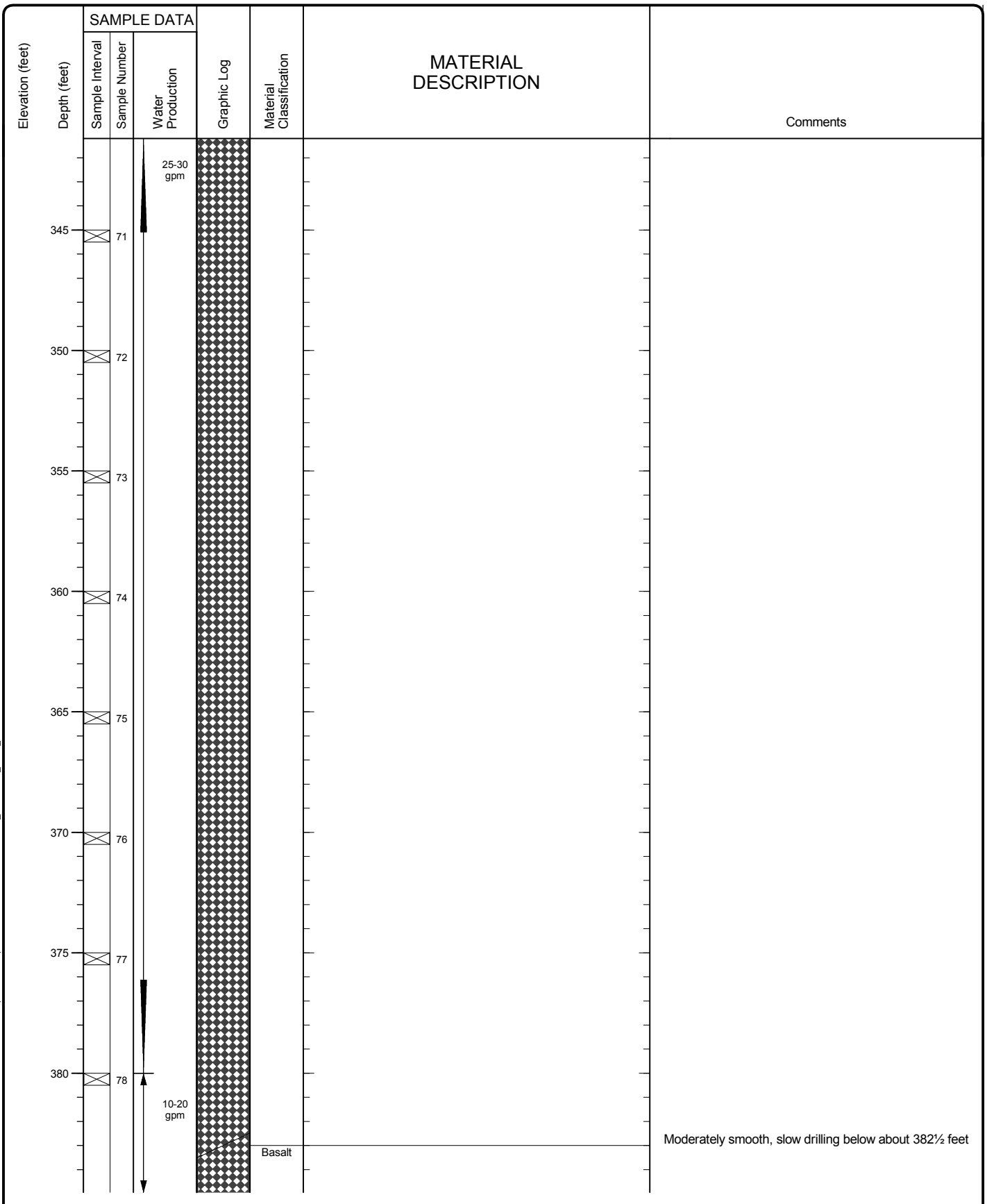
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 8 of 27



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 9 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
	385	⊠	79	10-20 gpm			Basalt (dense interior) medium dark gray, fine grained, fresh to slighly weathered, occasional oxidized surfaces, non-vesicular, aphyric to sparsely microphyric	
	390	⊠	80					
	395	⊠	81					Moderately smooth, moderately slow drilling below about 397 feet
						Basalt	Basalt (dense interior), medium dark gray, fine to medium grained, slightly weathered, occasional oxidized surfaces, non-vesicular with occasional chips with few small vesicles (<2 millimeters), aphyric to sparsely microphyric	
	400	⊠	82					
	405	⊠	83					
	410	⊠	84					
	415	⊠	85					
						Basalt	Basalt (dense interior), medium dark gray, fine to medium grained, fresh to slightly weathered, no oxidized surfaces or secondary mineralization, non-vesicular with occasional chips with few small vesicles (<2 millimeters), microphyric	Moderately smooth, slow drilling below about 418 feet
	420	⊠	86					
	425	⊠	87					

Note: See Figure A-1 for explanation of symbols.

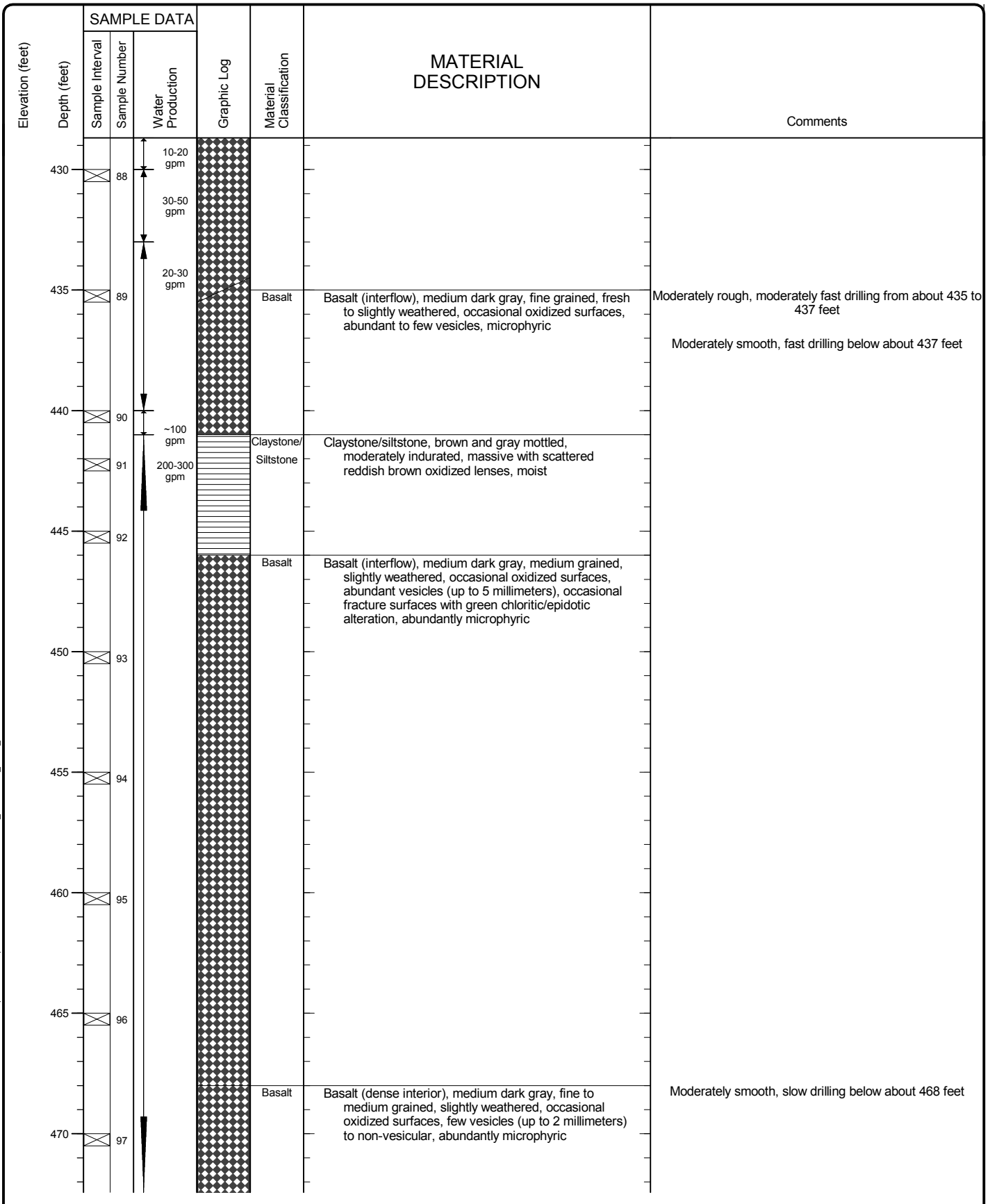
Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 10 of 27

Spokane: Date:6/22/15 Path:\\SPO\PROJECTS\3\3170026\00\GINT\3170026O0.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI_GEOTECH_WITH_GPM



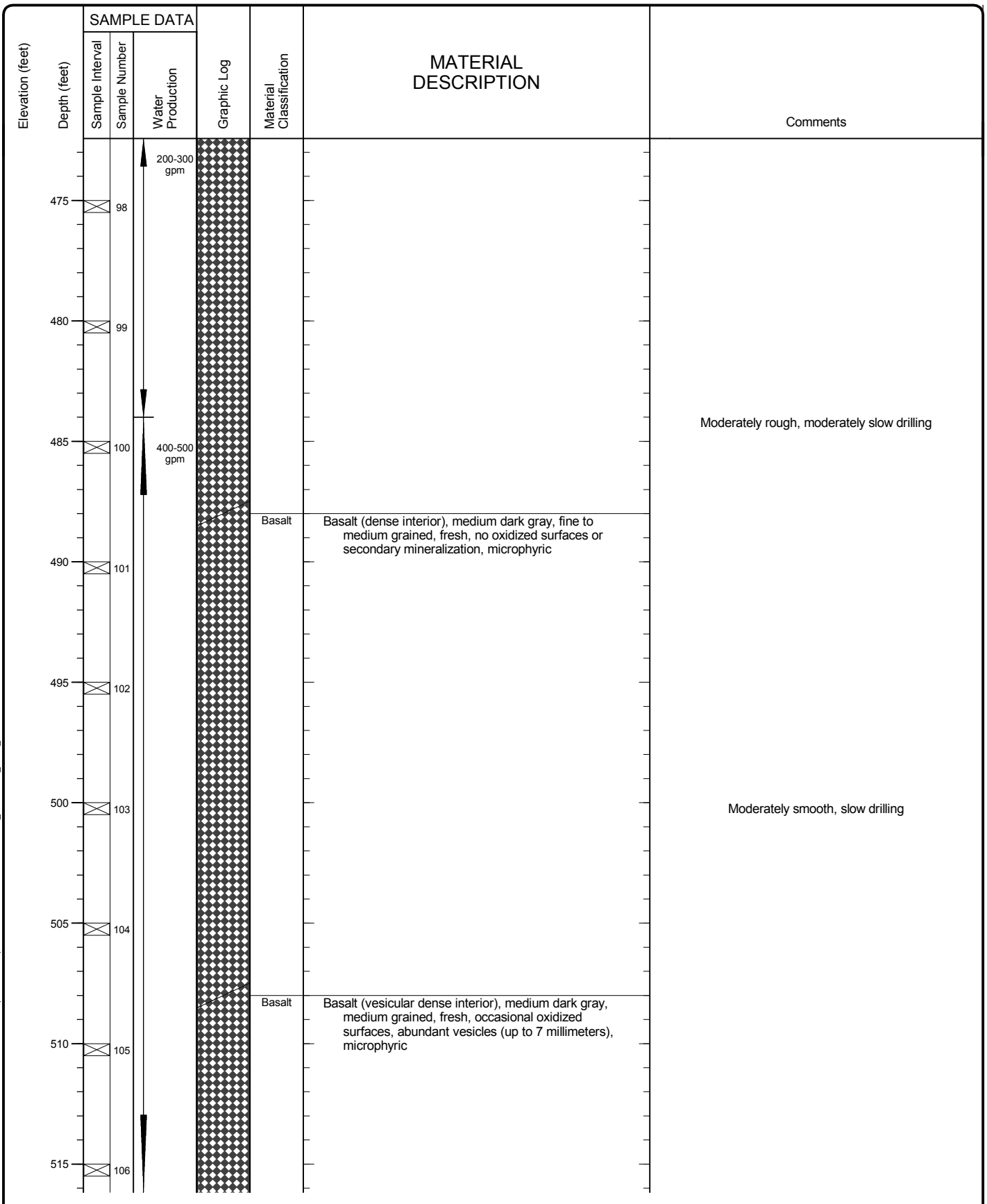
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 11 of 27



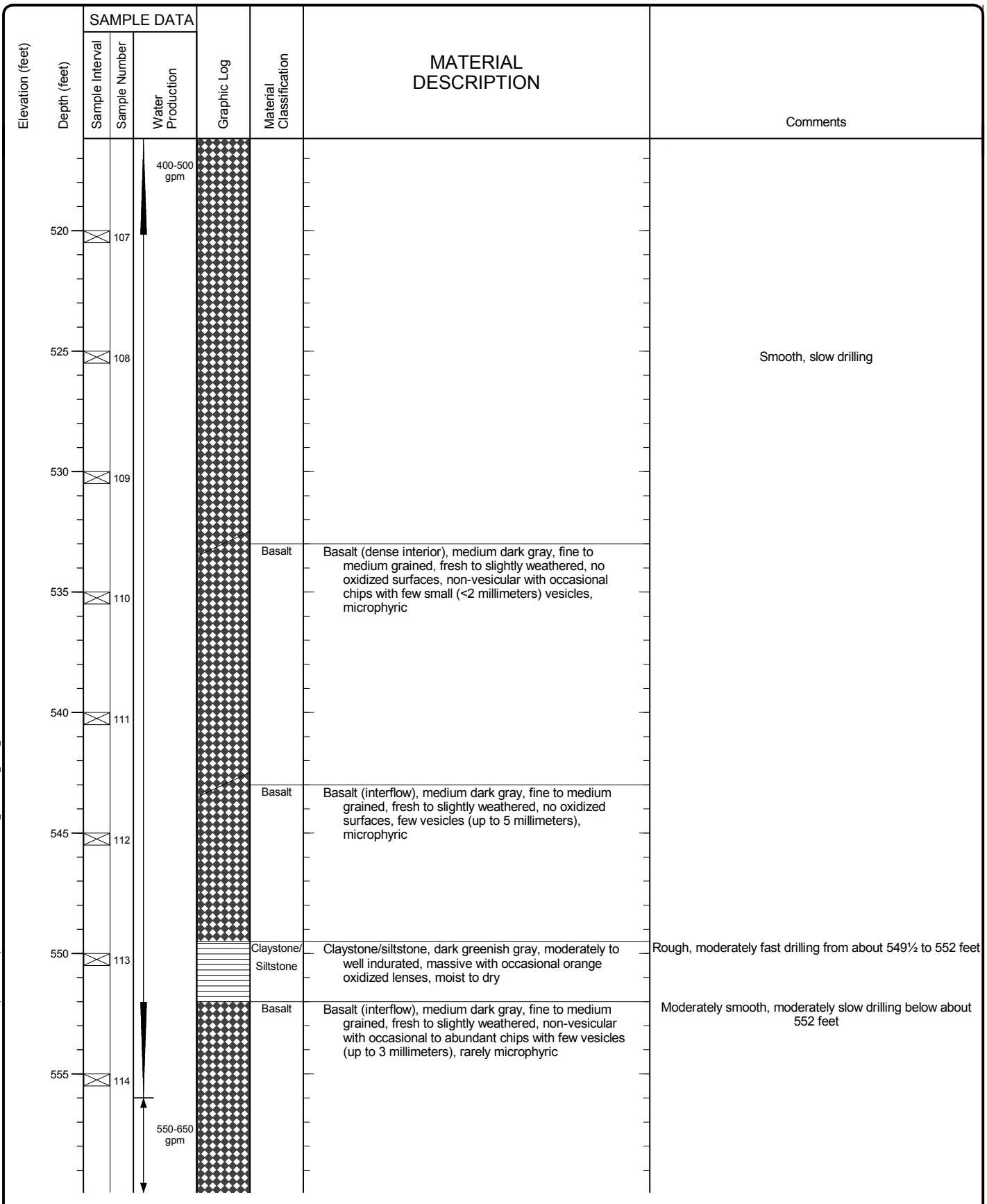
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 12 of 27



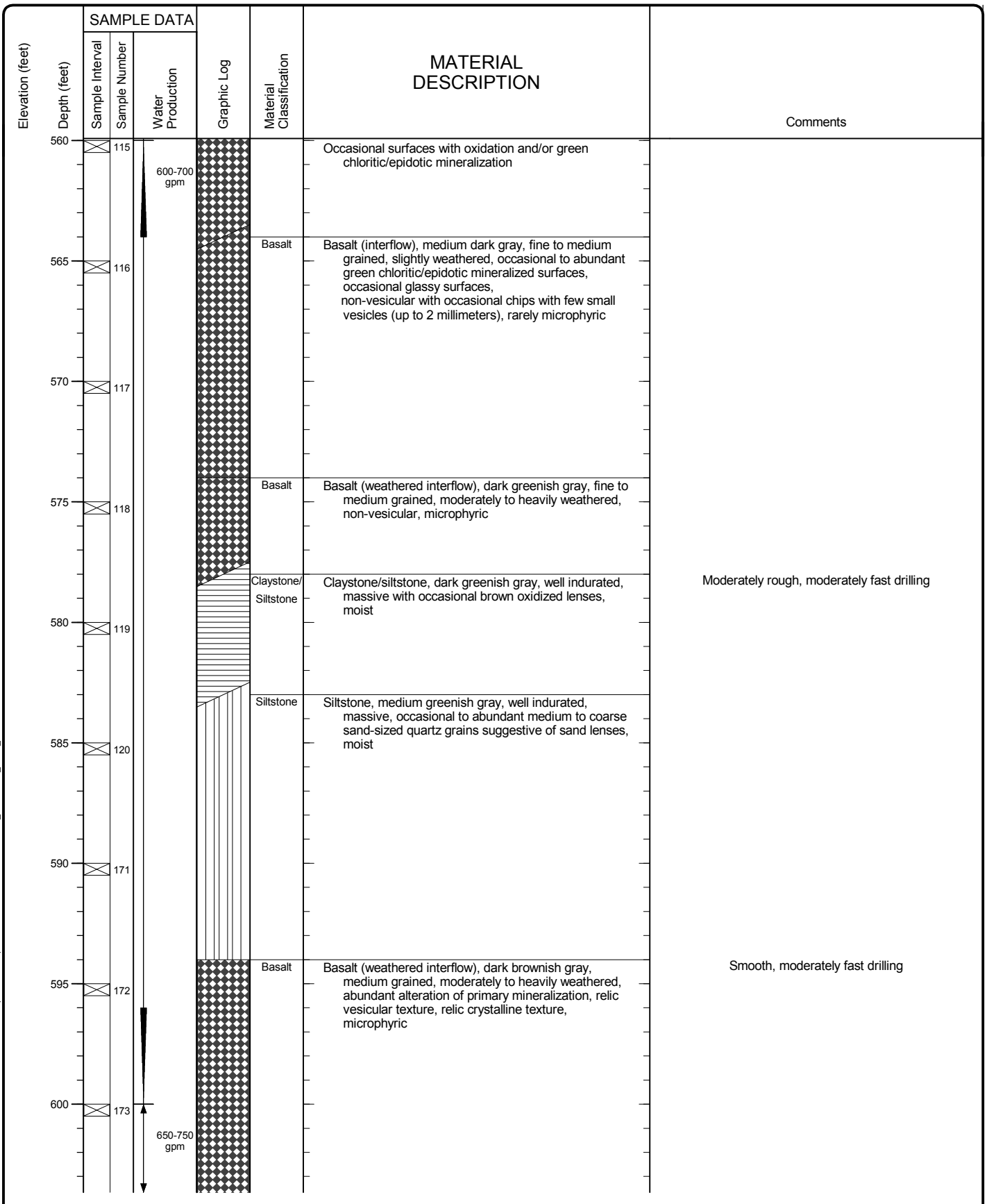
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 13 of 27



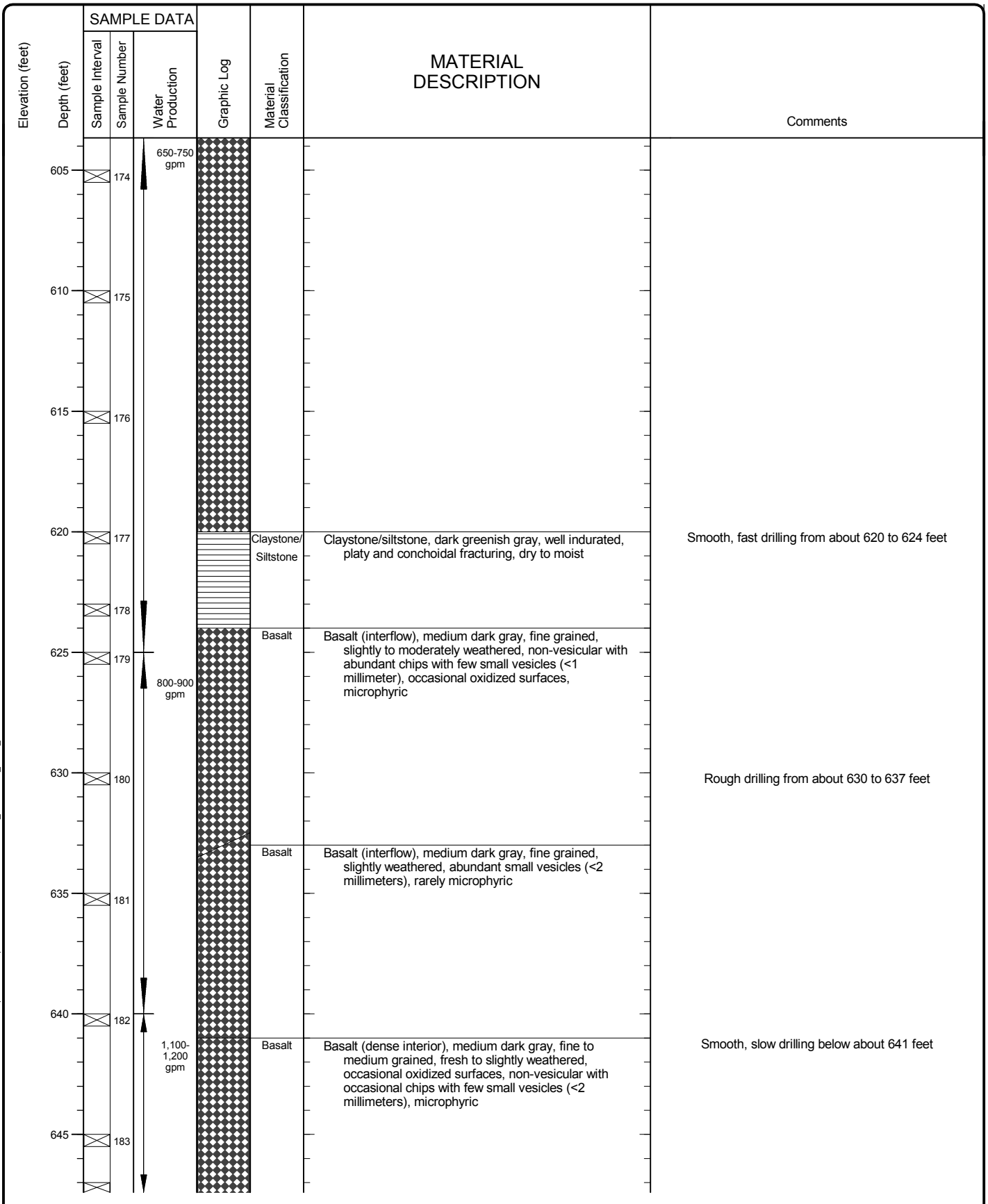
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 14 of 27



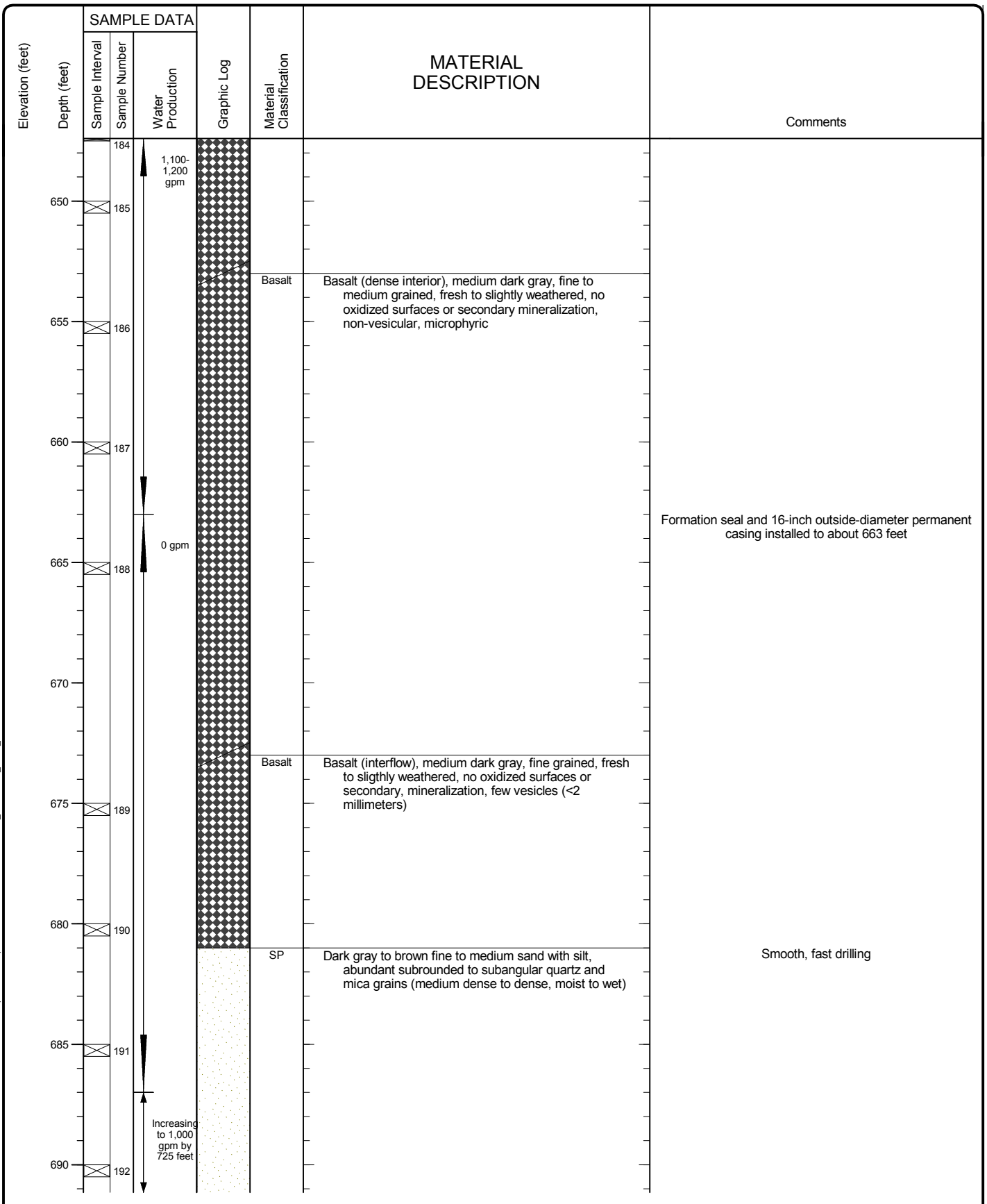
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 15 of 27



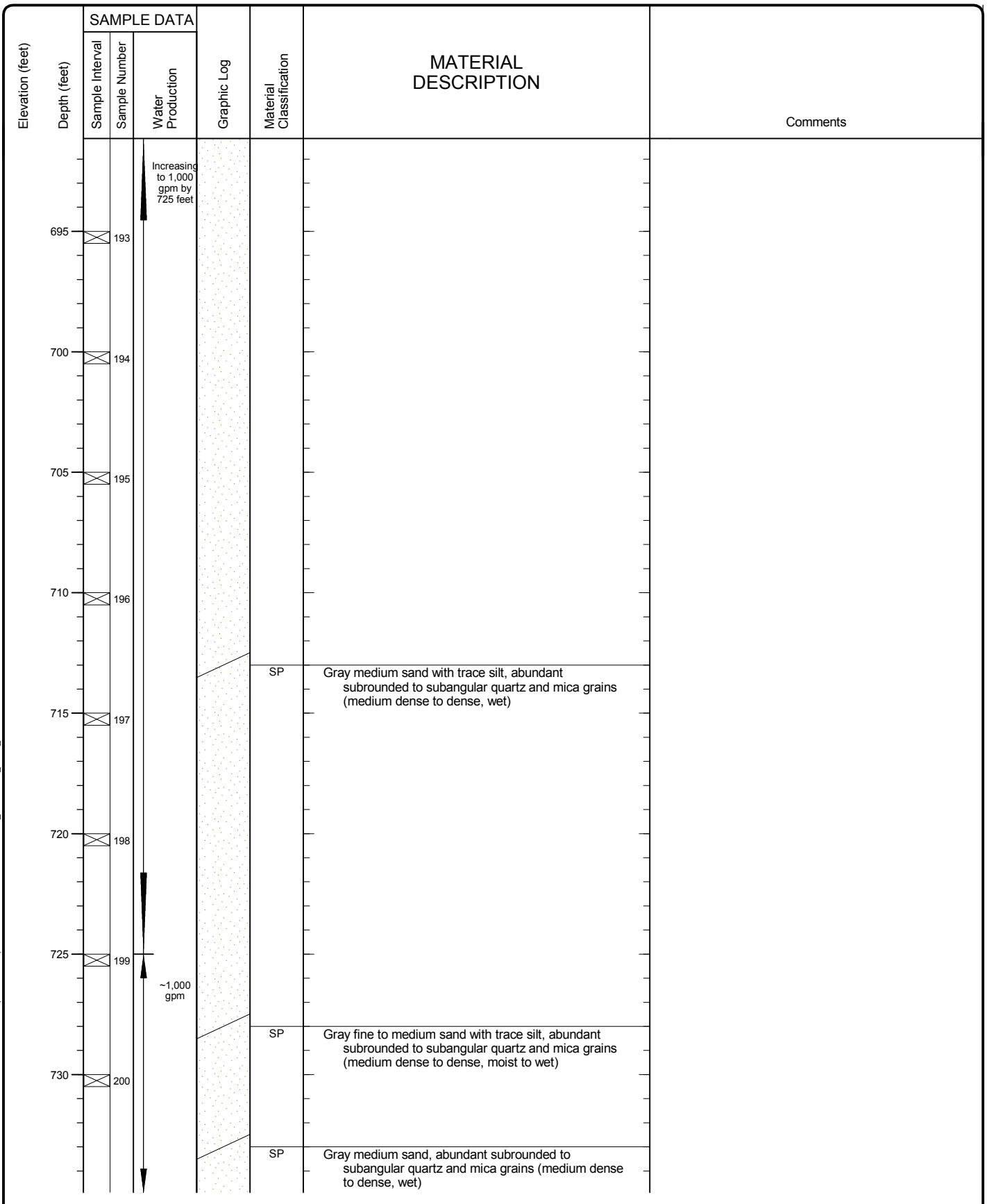
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 16 of 27



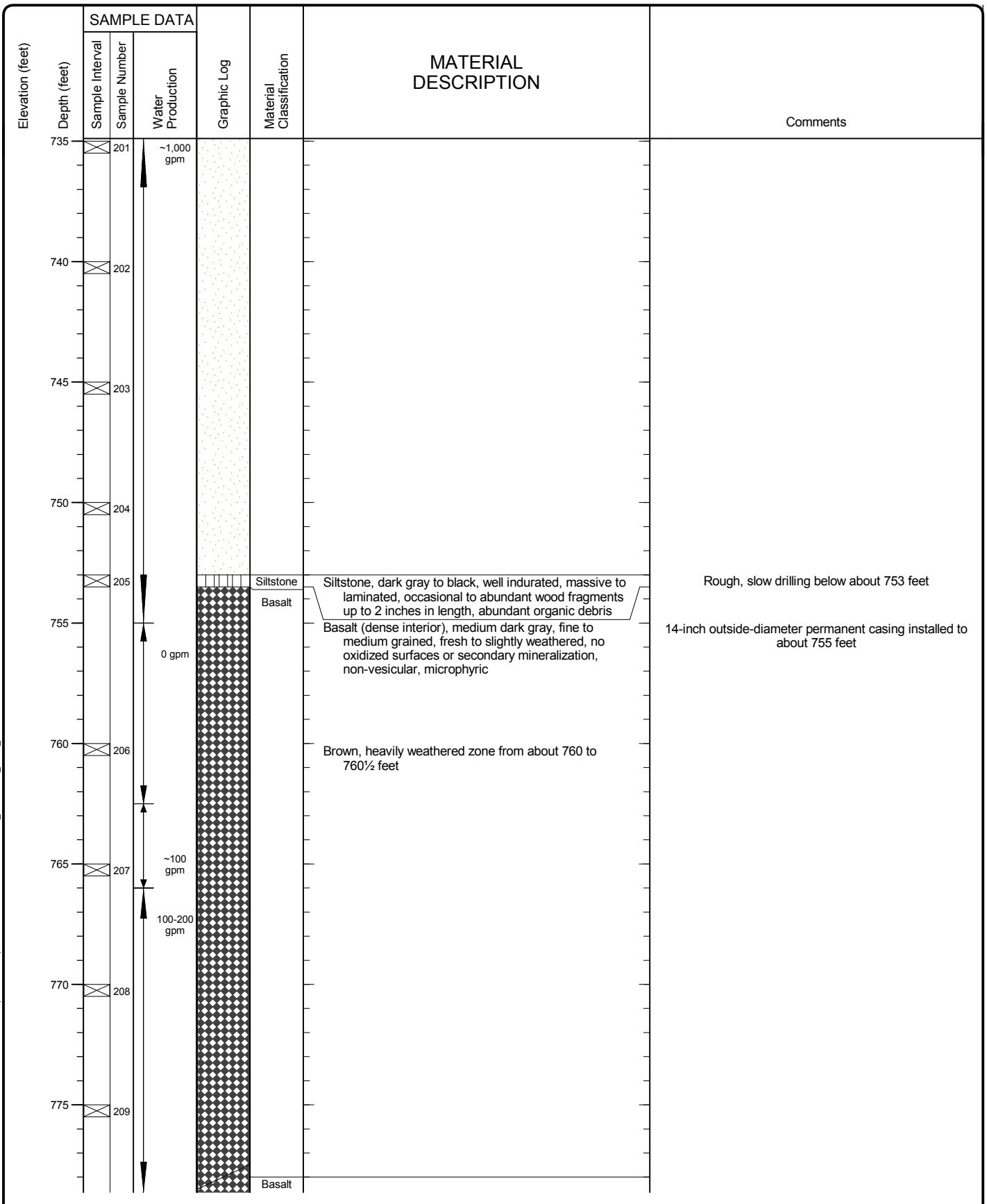
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 17 of 27



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 18 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
	780		210	100-200 gpm			Basalt (dense interior) medium dark gray, fine to medium grained, fresh to slightly weathered, no oxidized surfaces or secondary mineralization, generally non-vesicular with occasional chips with few small vesicles (<2 millimeters), aphyric to microphyric	Smooth, moderately slow drilling
	785		211					
	790		212					Moderately smooth, moderately slow drilling
	795		213					
						Basalt	Basalt (dense interior), dark gray, medium grained, fresh, occasional to abundant brown to green epidotic/chloritic mineralization of fracture surfaces (<1 millimeter), non-vesicular, microphyric	
	800		214					Rough drilling at 802 feet
						Basalt	Basalt (dense interior), dark gray to medium dark gray, medium grained, fresh to slightly weathered, no oxidized surfaces, occasional to abundant brown to green epidotic/chloritic mineralization of fracture surfaces generally non-vesicular with occasional chips with few small vesicles (<2 millimeters), microphyric	
	805		215					Moderately smooth, moderately slow drilling
	810		216	150-250 gpm				Rough drilling at 811 feet
								Moderately smooth, slow drilling
	815		217					
	820		218					

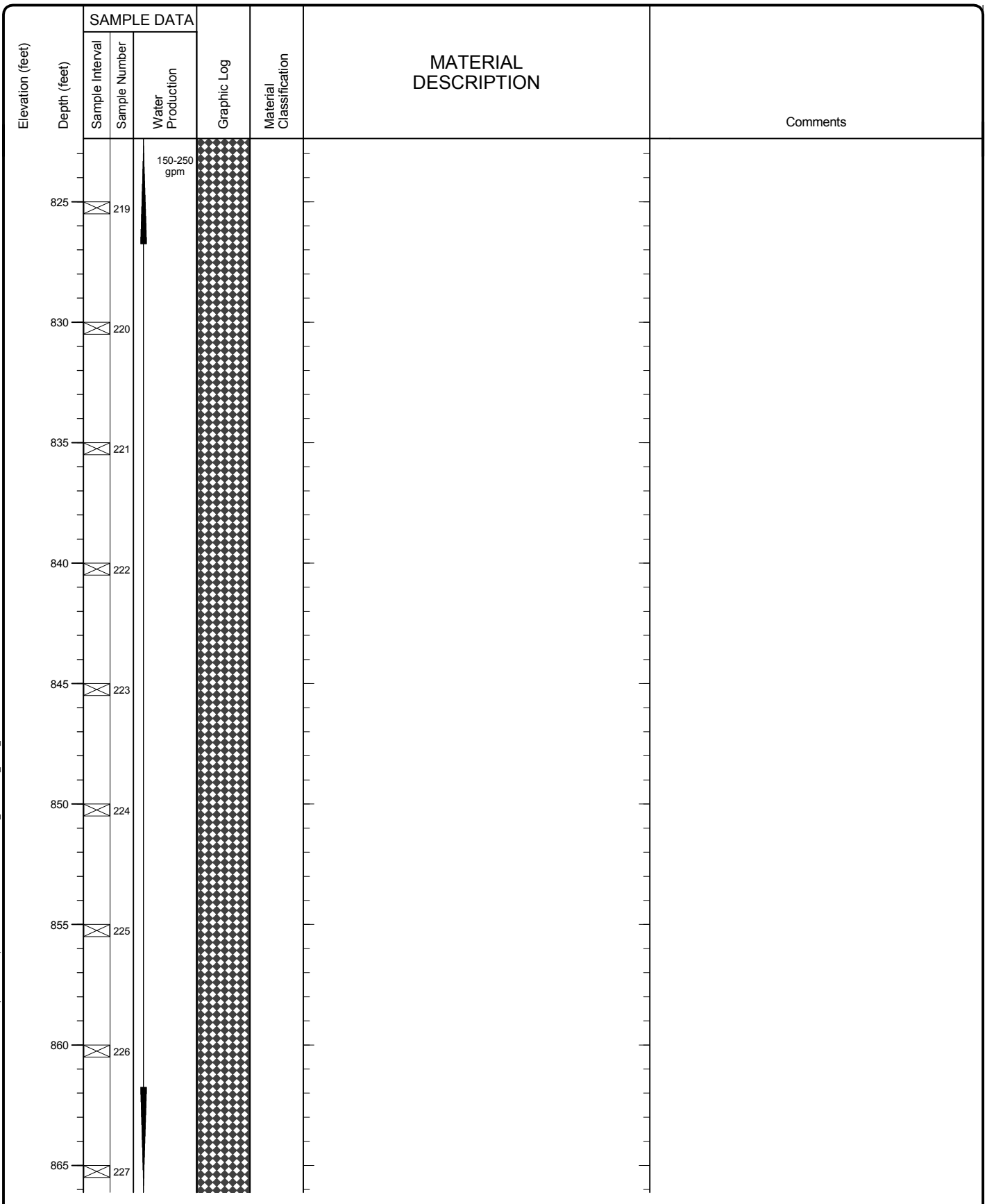
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 19 of 27



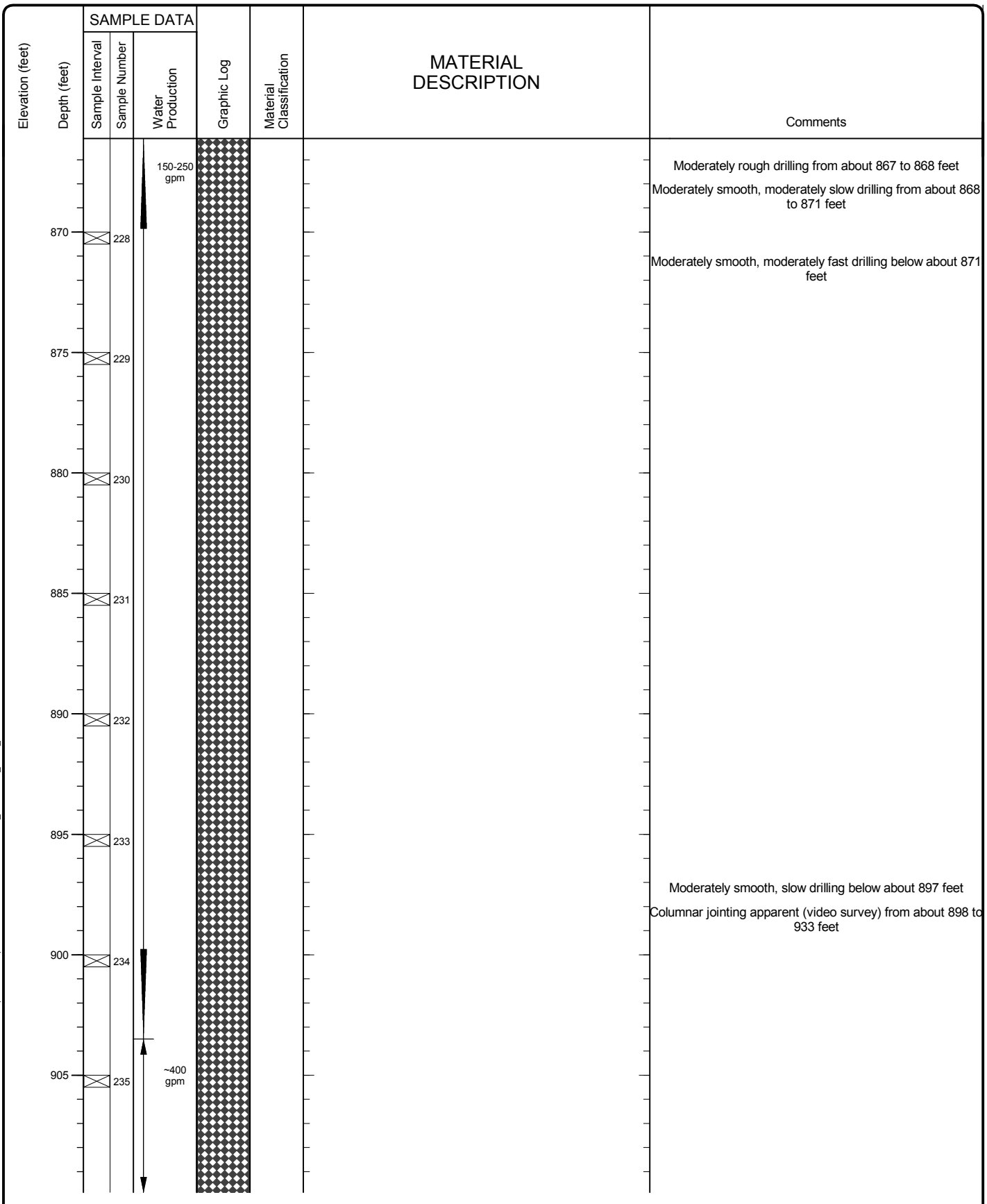
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 20 of 27



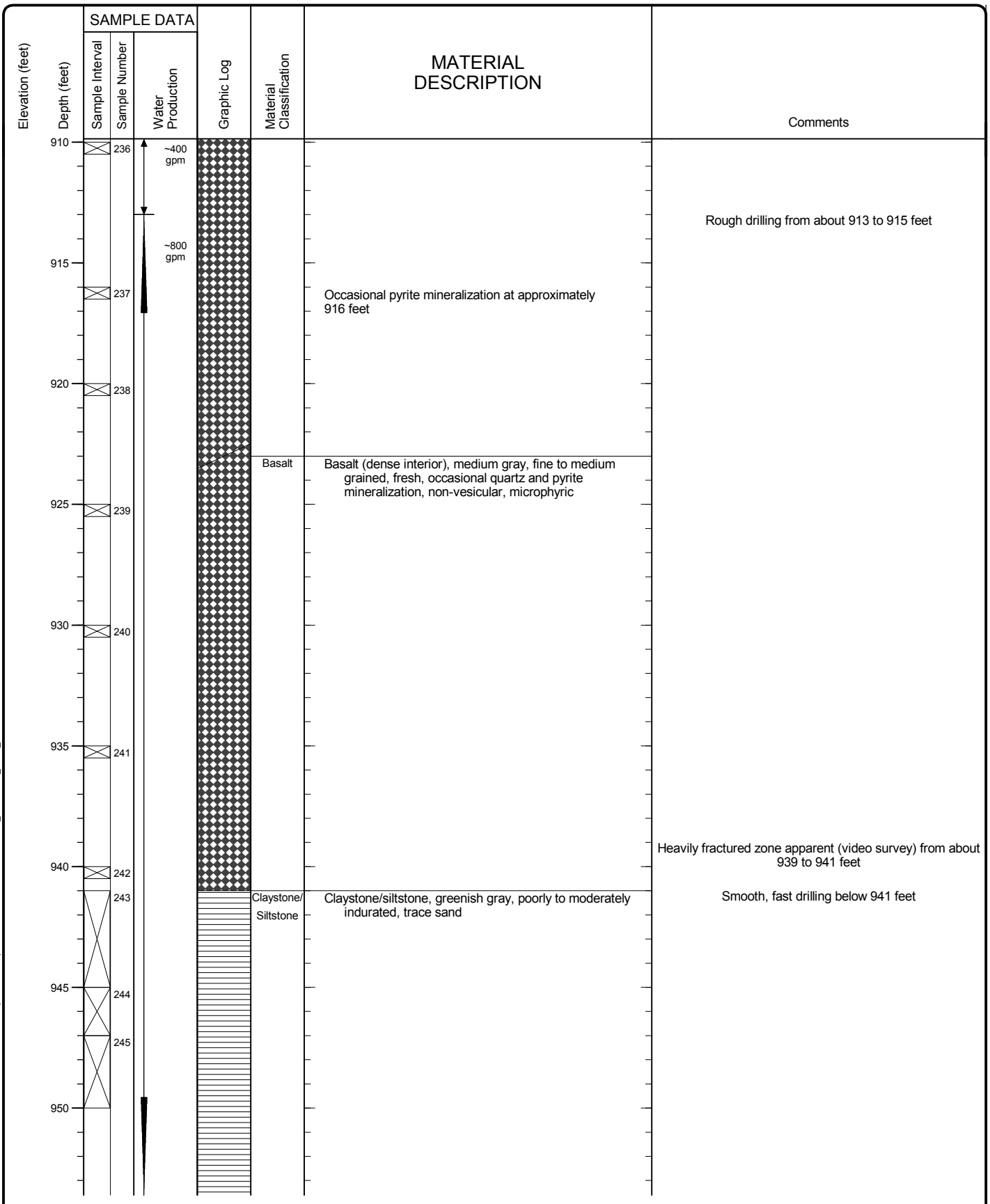
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 21 of 27



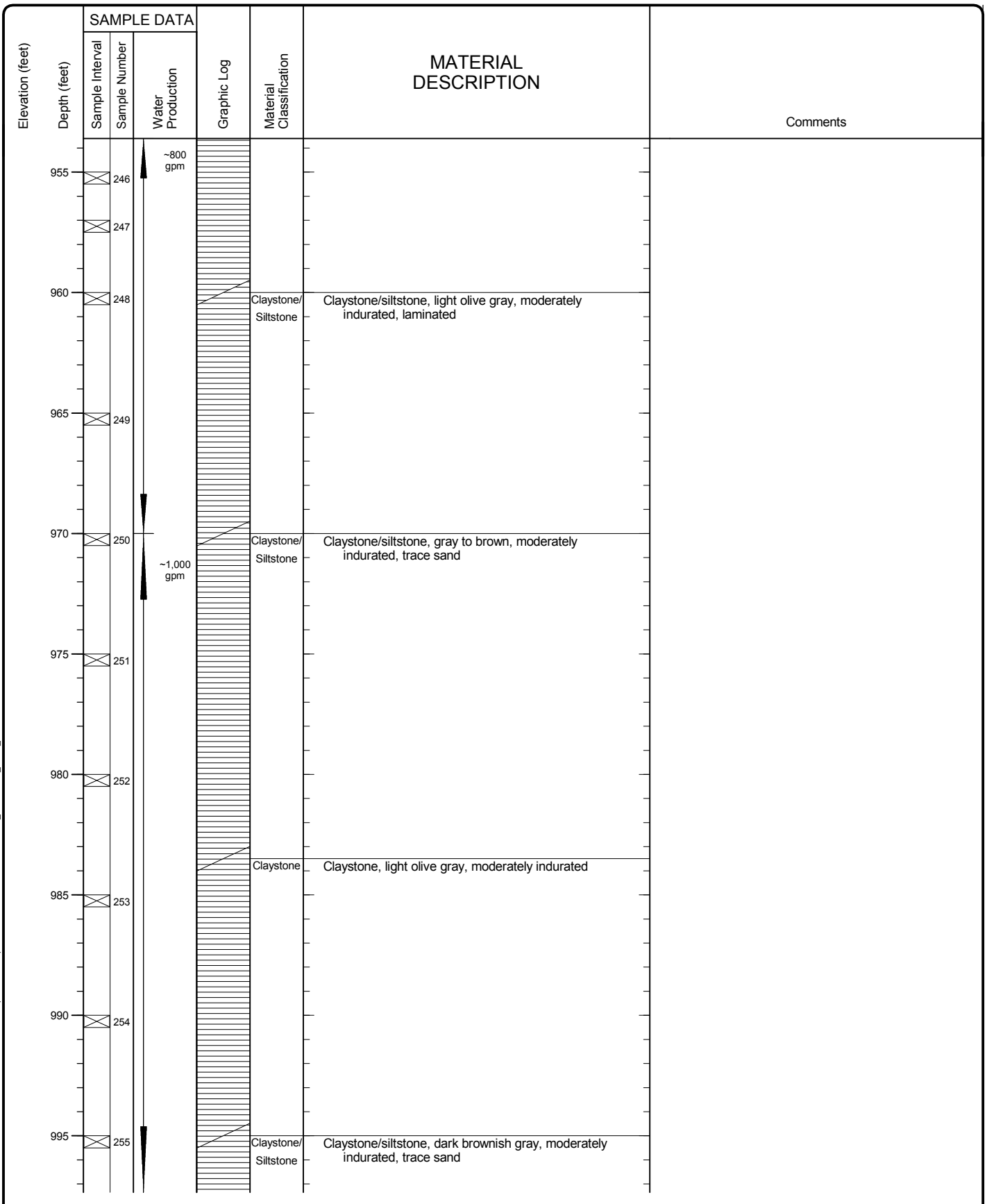
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 22 of 27



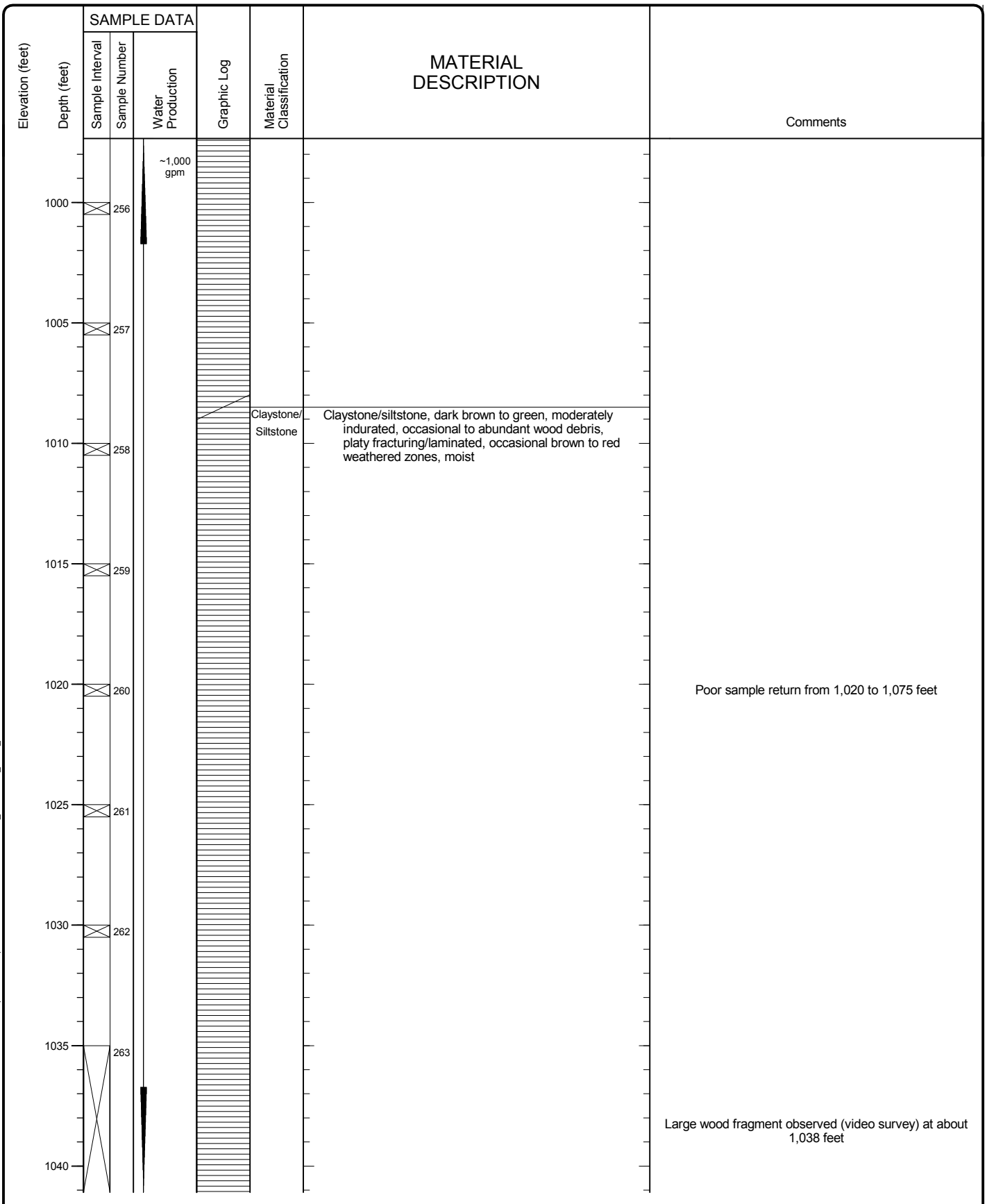
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 23 of 27



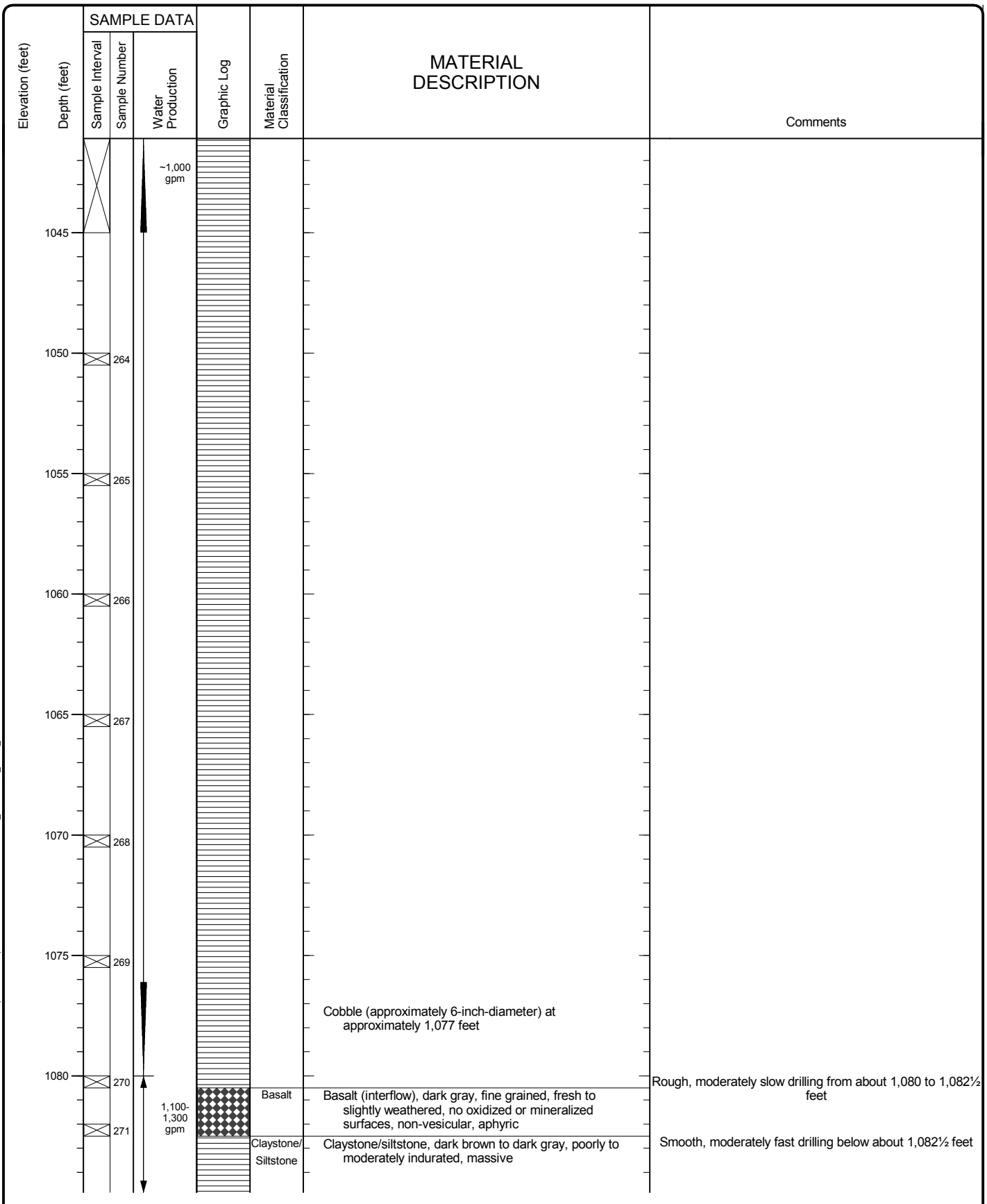
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 24 of 27



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project:	EWU Class A Water System Upgrades
Project Location:	Cheney, Washington
Project Number:	3170-026-00

Figure C-2
Sheet 25 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
1085		☒	272	1,100-1,300 gpm				
						Basalt	Basalt (fractured dense interior), dark gray, fine grained, slightly weathered, occasional oxidized surfaces, no secondary mineralization, non-vesicular, fractured, microphyric	Rough, moderately slow drilling below about 1,089 feet
1090		☒	273					
		☒	274					
						Basalt	Basalt (fractured dense interior), medium dark gray, fine grained, slightly to moderately weathered, no secondary mineralization, non-vesicular, fractured, aphyric	Smooth, moderately slow drilling from about 1,093 to 1,095 feet
1095		☒	275					Moderately rough, moderately slow drilling below about 1,095 feet
1100		☒	276					
								Increase in downhole air pressure from about 1,103 to 1,106 feet
1105		☒	277					
						Basalt	Basalt (fractured dense interior), medium dark gray, fine to medium grained, fresh to slightly weathered, no oxidized surfaces or secondary mineralization, non-vesicular, fractured, microphyric	
1110		☒	280					Rough, moderately slow drilling from about 1,111 to 1,115 feet
1115		☒	281					
1120		☒	282					Moderately smooth, moderately slow drilling from about 1,120 to 1,123 feet
1125		☒	283					

Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 26 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
1130			284	1,100-1,300 gpm				
1135			285			Basalt	Basalt (fractured dense interior), medium dark gray, fine grained, fresh to slightly weathered, no oxidized surfaces, occasional to abundant secondary quartz mineralization (2 to 5 millimeters), microphyric	Moderately rough, moderately slow drilling
1140			286					
						Basalt	Basalt (dense interior), medium gray, fine grained, fresh to slightly weathered, no oxidized surfaces, microphyric	
1145			287					

Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 27 of 27

APPENDIX B

Hydraulic Modeling

Hydraulic Modeling - Theis Analysis Results for Case Study 1

Case Study 1
Q = 600 gpm
t = 5 years

Well	s(ft)
EW-1	16
IW-1	-16

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm

T= coefficient of transmissivity of aquifer, in ft^2/day and gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9,900	ft^2/day
T =	74,057	gpd/ft
Q =	600	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	28.46	264	600	74,057	1825	0.1	0.0002	2.14	2.0273E+13	13.30691995
IW-1	-12.30	264	600	74,057	1825	600	0.0002	2.14	563141.391	5.750617449

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 16.16

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm

T= coefficient of transmissivity of aquifer, in ft^2/day and gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9,900	ft^2/day
T =	74,057	gpd/ft
Q =	600	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	(0.3Tt/r²S)	log(0.3Tt/r²S)
	s	264	Q	T	t	r	S			
EW-1	12.30	264	600	74,057	1825	600	0.0002	2.14	563141.391	5.750617449
IW-1	-28.46	264	600	74,057	1825	0.1	0.0002	2.14	2.0273E+13	13.30691995

Note: Analysis run under the assumption of no increase or decrease in available storage

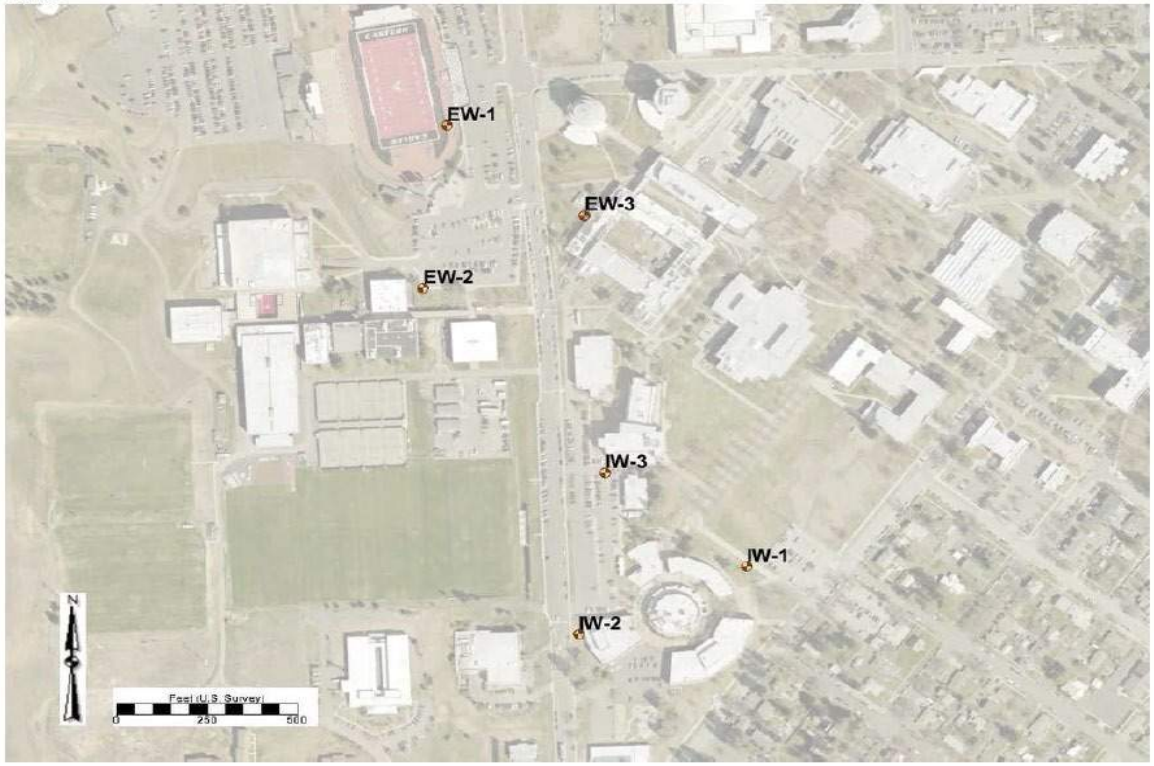
Total s -16.16

Hydraulic Modeling - Theis Analysis Results for Case Study 2

Case Study 2
Q = 1,200
5 years

Well	s (ft)
EW-1	43
EW-2	40
EW-3	40
IW-1	-43
IW-2	-43
IW-3	-38

Case 2



Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	56.92	264	1200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
EW-2	25.28	264	1200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
EW-3	25.28	264	1200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-1	-20.96	264	1200	74,057	1825	1600	0.0002	4.28	79191.7581	4.898679984
IW-2	-20.96	264	1200	74,057	1825	1600	0.0002	4.28	79191.7581	4.898679984
IW-3	-22.15	264	1200	74,057	1825	1160	0.0002	4.28	150662.084	5.178003971

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 43.42

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
EW-2	56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
EW-3	25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-1	-21.87	264	1,200	74,057	1825	1250	0.0002	4.28	129747.776	5.113099924
IW-2	-22.18	264	1,200	74,057	1825	1150	0.0002	4.28	153293.687	5.185524269
IW-3	-23.77	264	1,200	74,057	1825	750	0.0002	4.28	360410.49	5.556797423

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 39.65

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
EW-2	25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
EW-3	56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
IW-1	-22.09	264	1,200	74,057	1825	1180	0.0002	4.28	145598.176	5.163155935
IW-2	-21.73	264	1,200	74,057	1825	1300	0.0002	4.28	119959.113	5.079033245
IW-3	-23.53	264	1,200	74,057	1825	800	0.0002	4.28	316767.032	5.500739976

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 40.13

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	20.96	264	1,200	74,057	1825	1600	0.0002	4.28	79191.7581	4.898679984
EW-2	21.87	264	1,200	74,057	1825	1250	0.0002	4.28	129747.776	5.113099924
EW-3	22.09	264	1,200	74,057	1825	1180	0.0002	4.28	145598.176	5.163155935
IW-1	-56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
IW-2	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-3	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -42.56

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	20.96	264	1,200	74,057	1825	1600	0.0002	4.28	79191.7581	4.898679984
EW-2	22.18	264	1,200	74,057	1825	1150	0.0002	4.28	153293.687	5.185524269
EW-3	21.73	264	1,200	74,057	1825	1300	0.0002	4.28	119959.113	5.079033245
IW-1	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-2	-56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
IW-3	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -42.61

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	22.15	264	1,200	74,057	1825	1160	0.0002	4.28	150662.084	5.178003971
EW-2	23.77	264	1,200	74,057	1825	750	0.0002	4.28	360410.49	5.556797423
EW-3	23.53	264	1,200	74,057	1825	800	0.0002	4.28	316767.032	5.500739976
IW-1	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-2	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-3	-56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -38.03

Hydraulic Modeling - Theis Analysis Results for Case Study 3

Case Study 3
Q = 1,500
t = 5 years

Well	s (ft)
EW-1	87
EW-2	82
EW-3	85
EW-4	85
EW-5	75
EW-6	77
EW-7	67
EW-8	51
EW-9	38
EW-10	44

Well	s (ft)
IW-1	-59
IW-2	-74
IW-3	-64
IW-4	-84
IW-5	-74
IW-6	-87
IW-7	-80
IW-8	-85
IW-9	-69
IW-10	-76

Case 3

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-2	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-3	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-4	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-5	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-6	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-7	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
EW-8	26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
EW-9	25.70	264	1,500	74,057	1825	1780	0.0002	5.35	63985.2609	4.806079945
EW-10	25.60	264	1,500	74,057	1825	1820	0.0002	5.35	61203.629	4.786777174
IW-1	-24.51	264	1,500	74,057	1825	2300	0.0002	5.35	38323.4217	4.583464278
IW-2	-23.85	264	1,500	74,057	1825	2650	0.0002	5.35	28868.7648	4.460428202
IW-3	-24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
IW-4	-23.76	264	1,500	74,057	1825	2700	0.0002	5.35	27809.4514	4.444192421
IW-5	-24.41	264	1,500	74,057	1825	2350	0.0002	5.35	36709.9865	4.564784225
IW-6	-23.38	264	1,500	74,057	1825	2930	0.0002	5.35	23614.8238	4.373184709
IW-7	-24.08	264	1,500	74,057	1825	2520	0.0002	5.35	31924.1151	4.504118868
IW-8	-23.34	264	1,500	74,057	1825	2960	0.0002	5.35	23138.5707	4.364336528
IW-9	-24.07	264	1,500	74,057	1825	2530	0.0002	5.35	31672.2493	4.500678907
IW-10	-23.26	264	1,500	74,057	1825	3010	0.0002	5.35	22376.2321	4.349786959

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 87.08

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

b=	100	ft	Q= pumping rate in gpm (Attentuated over a period of time)
K=	99	ft/day	T= coefficient of transmissivity of aquifer, in gpd/ft
S=	0.0002		t= time since pumping test started, in days
T =	9900	ft^2/day	r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured
T =	74,057	gpd/ft	S= coefficient of storage (dimensionless)
Q =	1,500	gpm	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.6025	5.908979941
EW-2	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.02731E+13	13.30691995
EW-3	28.38	264	1,500	74,057	1825	1000	0.0002	5.35	202730.9006	5.30691995
EW-4	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.6025	5.908979941
EW-5	26.68	264	1,500	74,057	1825	1440	0.0002	5.35	97767.60254	4.990194966
EW-6	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.6867	5.185524269
EW-7	28.24	264	1,500	74,057	1825	1030	0.0002	5.35	191,093.32	5.2812455
EW-8	25.91	264	1,500	74,057	1825	1700	0.0002	5.35	70,149.10	4.846022107
EW-9	26.14	264	1,500	74,057	1825	1620	0.0002	5.35	77,248.48	4.887889921
EW-10	26.59	264	1,500	74,057	1825	1470	0.0002	5.35	93,817.81	4.97228528
IW-1	-24.25	264	1,500	74,057	1825	2430	0.0002	5.35	34,332.66	4.535707403
IW-2	-23.78	264	1,500	74,057	1825	2690	0.0002	5.35	28016.59742	4.44741539
IW-3	-24.78	264	1,500	74,057	1825	2170	0.0002	5.35	43052.70883	4.634000482
IW-4	-23.94	264	1,500	74,057	1825	2600	0.0002	5.35	29989.7782	4.476973254
IW-5	-24.76	264	1,500	74,057	1825	2180	0.0002	5.35	42658.63577	4.630006963
IW-6	-23.71	264	1,500	74,057	1825	2730	0.0002	5.35	27201.61288	4.434594656
IW-7	-24.61	264	1,500	74,057	1825	2250	0.0002	5.35	40045.61	4.602554913
IW-8	-23.85	264	1,500	74,057	1825	2650	0.0002	5.35	28868.76477	4.460428202
IW-9	-24.82	264	1,500	74,057	1825	2150	0.0002	5.35	43857.41495	4.64204303
IW-10	-23.94	264	1,500	74,057	1825	2600	0.0002	5.35	29989.7782	4.476973254

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 81.57

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-2	28.38	264	1,500	74,057	1825	1000	0.0002	5.35	202730.901	5.30691995
EW-3	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-4	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-5	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-6	30.03	264	1,500	74,057	1825	700	0.0002	5.35	413736.532	5.61672387
EW-7	27.53	264	1,500	74,057	1825	1200	0.0002	5.35	140785.348	5.148557458
EW-8	26.65	264	1,500	74,057	1825	1450	0.0002	5.35	96423.7339	4.984183945
EW-9	26.56	264	1,500	74,057	1825	1480	0.0002	5.35	92554.2826	4.966396519
EW-10	26.02	264	1,500	74,057	1825	1660	0.0002	5.35	73570.5112	4.866703774
IW-1	-25.57	264	1,500	74,057	1825	1830	0.0002	5.35	60536.5644	4.78201777
IW-2	-24.69	264	1,500	74,057	1825	2210	0.0002	5.35	41508.3435	4.618135402
IW-3	-25.70	264	1,500	74,057	1825	1780	0.0002	5.35	63985.2609	4.806079945
IW-4	-24.51	264	1,500	74,057	1825	2300	0.0002	5.35	38323.4217	4.583464278
IW-5	-25.16	264	1,500	74,057	1825	2000	0.0002	5.35	50682.7252	4.704859958
IW-6	-23.96	264	1,500	74,057	1825	2590	0.0002	5.35	30221.8066	4.480320422
IW-7	-24.63	264	1,500	74,057	1825	2240	0.0002	5.35	40403.9582	4.606423913
IW-8	-23.75	264	1,500	74,057	1825	2710	0.0002	5.35	27604.5942	4.440981368
IW-9	-24.39	264	1,500	74,057	1825	2360	0.0002	5.35	36399.5441	4.561095944
IW-10	-23.55	264	1,500	74,057	1825	2830	0.0002	5.35	25313.2016	4.403347079

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 85.22

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-2	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-3	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-4	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-5	29.13	264	1,500	74,057	1825	850	0.0002	5.35	280596.402	5.448082098
EW-6	30.91	264	1,500	74,057	1825	580	0.0002	5.35	602648.337	5.780063963
EW-7	29.84	264	1,500	74,057	1825	730	0.0002	5.35	380429.538	5.580274229
EW-8	27.81	264	1,500	74,057	1825	1130	0.0002	5.35	158768.032	5.200763063
EW-9	24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
EW-10	27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
IW-1	-25.47	264	1,500	74,057	1825	1870	0.0002	5.35	57974.4633	4.763236737
IW-2	-24.80	264	1,500	74,057	1825	2160	0.0002	5.35	43452.2678	4.638012447
IW-3	-26.02	264	1,500	74,057	1825	1660	0.0002	5.35	73570.5112	4.866703774
IW-4	-24.84	264	1,500	74,057	1825	2140	0.0002	5.35	44268.255	4.646092403
IW-5	-25.75	264	1,500	74,057	1825	1760	0.0002	5.35	65447.7339	4.815894614
IW-6	-24.41	264	1,500	74,057	1825	2350	0.0002	5.35	36709.9865	4.564784225
IW-7	-25.35	264	1,500	74,057	1825	1920	0.0002	5.35	54994.2764	4.740317492
IW-8	-24.39	264	1,500	74,057	1825	2360	0.0002	5.35	36399.5441	4.561095944
IW-9	-25.32	264	1,500	74,057	1825	1930	0.0002	5.35	54425.8639	4.735805332
IW-10	-24.29	264	1,500	74,057	1825	2410	0.0002	5.35	34904.8571	4.542885865

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 85.11

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-2	26.68	264	1,500	74,057	1825	1440	0.0002	5.35	97767.6025	4.990194966
EW-3	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-4	29.13	264	1,500	74,057	1825	850	0.0002	5.35	280596.402	5.448082098
EW-5	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-6	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-7	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
EW-8	30.24	264	1,500	74,057	1825	670	0.0002	5.35	451617.065	5.654770344
EW-9	27.57	264	1,500	74,057	1825	1190	0.0002	5.35	143161.43	5.155826027
EW-10	26.43	264	1,500	74,057	1825	1520	0.0002	5.35	87747.1003	4.943232774
IW-1	-27.19	264	1,500	74,057	1825	1290	0.0002	5.35	121826.153	5.085740529
IW-2	-25.91	264	1,500	74,057	1825	1700	0.0002	5.35	70149.1006	4.846022107
IW-3	-27.09	264	1,500	74,057	1825	1320	0.0002	5.35	116351.527	5.065772087
IW-4	-25.52	264	1,500	74,057	1825	1850	0.0002	5.35	59234.7409	4.772576493
IW-5	-26.11	264	1,500	74,057	1825	1630	0.0002	5.35	76303.5495	4.882544741
IW-6	-24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
IW-7	-25.40	264	1,500	74,057	1825	1900	0.0002	5.35	56158.1442	4.749412748
IW-8	-24.31	264	1,500	74,057	1825	2400	0.0002	5.35	35196.3369	4.546497466
IW-9	-24.87	264	1,500	74,057	1825	2130	0.0002	5.35	44684.8951	4.650160743
IW-10	-23.96	264	1,500	74,057	1825	2590	0.0002	5.35	30221.8066	4.480320422

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 75.00

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-2	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
EW-3	30.03	264	1,500	74,057	1825	700	0.0002	5.35	413736.532	5.61672387
EW-4	30.91	264	1,500	74,057	1825	580	0.0002	5.35	602648.337	5.780063963
EW-5	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-6	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-7	30.31	264	1,500	74,057	1825	660	0.0002	5.35	465406.108	5.667832079
EW-8	31.07	264	1,500	74,057	1825	560	0.0002	5.35	646463.331	5.810543896
EW-9	29.47	264	1,500	74,057	1825	790	0.0002	5.35	324837.207	5.511665767
EW-10	28.20	264	1,500	74,057	1825	1040	0.0002	5.35	187436.114	5.272853271
IW-1	-27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-2	-26.17	264	1,500	74,057	1825	1610	0.0002	5.35	78211.0646	4.893268198
IW-3	-27.81	264	1,500	74,057	1825	1130	0.0002	5.35	158768.032	5.200763063
IW-4	-26.08	264	1,500	74,057	1825	1640	0.0002	5.35	75375.8554	4.877232254
IW-5	-27.09	264	1,500	74,057	1825	1320	0.0002	5.35	116351.527	5.065772087
IW-6	-25.40	264	1,500	74,057	1825	1900	0.0002	5.35	56158.1442	4.749412748
IW-7	-26.34	264	1,500	74,057	1825	1550	0.0002	5.35	84383.3093	4.926256553
IW-8	-25.11	264	1,500	74,057	1825	2020	0.0002	5.35	49684.0752	4.696217211
IW-9	-25.89	264	1,500	74,057	1825	1710	0.0002	5.35	69331.0422	4.840927729
IW-10	-24.78	264	1,500	74,057	1825	2170	0.0002	5.35	43052.7088	4.634000482

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 76.59

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
EW-2	28.24	264	1,500	74,057	1825	1030	0.0002	5.35	191093.318	5.2812455
EW-3	27.53	264	1,500	74,057	1825	1200	0.0002	5.35	140785.348	5.148557458
EW-4	29.84	264	1,500	74,057	1825	730	0.0002	5.35	380429.538	5.580274229
EW-5	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
EW-6	30.31	264	1,500	74,057	1825	660	0.0002	5.35	465406.108	5.667832079
EW-7	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-8	28.57	264	1,500	74,057	1825	960	0.0002	5.35	219977.106	5.342377484
EW-9	30.60	264	1,500	74,057	1825	620	0.0002	5.35	527395.683	5.722136571
EW-10	31.69	264	1,500	74,057	1825	490	0.0002	5.35	844360.269	5.92652779
IW-1	-26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
IW-2	-25.78	264	1,500	74,057	1825	1750	0.0002	5.35	66197.8451	4.820843852
IW-3	-27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
IW-4	-26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
IW-5	-27.69	264	1,500	74,057	1825	1160	0.0002	5.35	150662.084	5.178003971
IW-6	-25.89	264	1,500	74,057	1825	1710	0.0002	5.35	69331.0422	4.840927729
IW-7	-27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
IW-8	-26.05	264	1,500	74,057	1825	1650	0.0002	5.35	74464.9773	4.871952061
IW-9	-27.53	264	1,500	74,057	1825	1200	0.0002	5.35	140785.348	5.148557458
IW-10	-25.97	264	1,500	74,057	1825	1680	0.0002	5.35	71829.259	4.856301386

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 66.69

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
EW-2	25.91	264	1,500	74,057	1825	1700	0.0002	5.35	70149.1006	4.846022107
EW-3	26.65	264	1,500	74,057	1825	1450	0.0002	5.35	96423.7339	4.984183945
EW-4	27.81	264	1,500	74,057	1825	1130	0.0002	5.35	158768.032	5.200763063
EW-5	30.24	264	1,500	74,057	1825	670	0.0002	5.35	451617.065	5.654770344
EW-6	31.07	264	1,500	74,057	1825	560	0.0002	5.35	646463.331	5.810543896
EW-7	28.57	264	1,500	74,057	1825	960	0.0002	5.35	219977.106	5.342377484
EW-8	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-9	30.45	264	1,500	74,057	1825	640	0.0002	5.35	494948.488	5.694560002
EW-10	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
IW-1	-29.78	264	1,500	74,057	1825	740	0.0002	5.35	370217.13	5.56845651
IW-2	-28.11	264	1,500	74,057	1825	1060	0.0002	5.35	180429.78	5.256308219
IW-3	-30.45	264	1,500	74,057	1825	640	0.0002	5.35	494948.488	5.694560002
IW-4	-27.65	264	1,500	74,057	1825	1170	0.0002	5.35	148097.67	5.170548226
IW-5	-28.47	264	1,500	74,057	1825	980	0.0002	5.35	211090.067	5.324467798
IW-6	-26.43	264	1,500	74,057	1825	1520	0.0002	5.35	87747.1003	4.943232774
IW-7	-27.27	264	1,500	74,057	1825	1270	0.0002	5.35	125693.41	5.099312508
IW-8	-25.75	264	1,500	74,057	1825	1760	0.0002	5.35	65447.7339	4.815894614
IW-9	-26.22	264	1,500	74,057	1825	1590	0.0002	5.35	80191.0133	4.904125701
IW-10	-25.16	264	1,500	74,057	1825	2000	0.0002	5.35	50,682.73	4.704859958

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 50.70

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	25.70	264	1,500	74,057	1825	1780	0.0002	5.35	63985.2609	4.806079945
EW-2	26.14	264	1,500	74,057	1825	1620	0.0002	5.35	77248.4761	4.887889921
EW-3	26.56	264	1,500	74,057	1825	1480	0.0002	5.35	92554.2826	4.966396519
EW-4	24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
EW-5	27.57	264	1,500	74,057	1825	1190	0.0002	5.35	143161.43	5.155826027
EW-6	29.47	264	1,500	74,057	1825	790	0.0002	5.35	324837.207	5.511665767
EW-7	30.60	264	1,500	74,057	1825	620	0.0002	5.35	527395.683	5.722136571
EW-8	30.45	264	1,500	74,057	1825	640	0.0002	5.35	494948.488	5.694560002
EW-9	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-10	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-1	-28.06	264	1,500	74,057	1825	1070	0.0002	5.35	177073.02	5.248152394
IW-2	-27.77	264	1,500	74,057	1825	1140	0.0002	5.35	155994.845	5.193110247
IW-3	-30.52	264	1,500	74,057	1825	630	0.0002	5.35	510785.842	5.708238851
IW-4	-28.42	264	1,500	74,057	1825	990	0.0002	5.35	206847.159	5.315649561
IW-5	-30.99	264	1,500	74,057	1825	570	0.0002	5.35	623979.38	5.795170238
IW-6	-27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
IW-7	-29.78	264	1,500	74,057	1825	740	0.0002	5.35	370217.13	5.56845651
IW-8	-27.45	264	1,500	74,057	1825	1220	0.0002	5.35	136207.27	5.134200288
IW-9	-28.62	264	1,500	74,057	1825	950	0.0002	5.35	224632.577	5.351472739
IW-10	-26.81	264	1,500	74,057	1825	1400	0.0002	5.35	103434.133	5.014663878

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 37.79

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	25.60	264	1,500	74,057	1825	1820	0.0002	5.35	61203.629	4.786777174
EW-2	26.59	264	1,500	74,057	1825	1470	0.0002	5.35	93817.8077	4.97228528
EW-3	26.02	264	1,500	74,057	1825	1660	0.0002	5.35	73570.5112	4.866703774
EW-4	27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
EW-5	26.43	264	1,500	74,057	1825	1520	0.0002	5.35	87747.1003	4.943232774
EW-6	28.20	264	1,500	74,057	1825	1040	0.0002	5.35	187436.114	5.272853271
EW-7	31.69	264	1,500	74,057	1825	490	0.0002	5.35	844360.269	5.92652779
EW-8	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-9	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-10	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-1	-26.34	264	1,500	74,057	1825	1550	0.0002	5.35	84383.3093	4.926256553
IW-2	-26.31	264	1,500	74,057	1825	1560	0.0002	5.35	83304.9394	4.920670753
IW-3	-28.02	264	1,500	74,057	1825	1080	0.0002	5.35	173809.071	5.240072439
IW-4	-27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-5	-29.24	264	1,500	74,057	1825	830	0.0002	5.35	294282.045	5.468763765
IW-6	-27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-7	-29.36	264	1,500	74,057	1825	810	0.0002	5.35	308993.904	5.489949912
IW-8	-27.61	264	1,500	74,057	1825	1180	0.0002	5.35	145598.176	5.163155935
IW-9	-30.03	264	1,500	74,057	1825	700	0.0002	5.35	413736.532	5.61672387
IW-10	-27.57	264	1,500	74,057	1825	1190	0.0002	5.35	143161.43	5.155826027

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 43.83

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.51	264	1,500	74,057	1825	2300	0.0002	5.35	38323.4217	4.583464278
EW-2	24.25	264	1,500	74,057	1825	2430	0.0002	5.35	34332.656	4.535707403
EW-3	25.57	264	1,500	74,057	1825	1830	0.0002	5.35	60536.5644	4.78201777
EW-4	25.47	264	1,500	74,057	1825	1870	0.0002	5.35	57974.4633	4.763236737
EW-5	27.19	264	1,500	74,057	1825	1290	0.0002	5.35	121826.153	5.085740529
EW-6	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
EW-7	26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
EW-8	29.78	264	1,500	74,057	1825	740	0.0002	5.35	370217.13	5.56845651
EW-9	28.06	264	1,500	74,057	1825	1070	0.0002	5.35	177073.02	5.248152394
EW-10	26.34	264	1,500	74,057	1825	1550	0.0002	5.35	84383.3093	4.926256553
IW-1	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-2	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-3	-31.41	264	1,500	74,057	1825	520	0.0002	5.35	749744.455	5.874913262
IW-4	-29.24	264	1,500	74,057	1825	830	0.0002	5.35	294282.045	5.468763765
IW-5	-28.47	264	1,500	74,057	1825	980	0.0002	5.35	211090.067	5.324467798
IW-6	-27.23	264	1,500	74,057	1825	1280	0.0002	5.35	123737.122	5.09250001
IW-7	-27.12	264	1,500	74,057	1825	1310	0.0002	5.35	118134.666	5.072377358
IW-8	-25.94	264	1,500	74,057	1825	1690	0.0002	5.35	70981.7235	4.85114654
IW-9	-25.73	264	1,500	74,057	1825	1770	0.0002	5.35	64710.3006	4.810973417
IW-10	-25.02	264	1,500	74,057	1825	2060	0.0002	5.35	47773.3294	4.679185509

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -58.78

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.85	264	1,500	74,057	1825	2650	0.0002	5.35	28868.7648	4.460428202
EW-2	23.78	264	1,500	74,057	1825	2690	0.0002	5.35	28016.5974	4.44741539
EW-3	24.69	264	1,500	74,057	1825	2210	0.0002	5.35	41508.3435	4.618135402
EW-4	24.80	264	1,500	74,057	1825	2160	0.0002	5.35	43452.2678	4.638012447
EW-5	25.91	264	1,500	74,057	1825	1700	0.0002	5.35	70149.1006	4.846022107
EW-6	26.17	264	1,500	74,057	1825	1610	0.0002	5.35	78211.0646	4.893268198
EW-7	25.78	264	1,500	74,057	1825	1750	0.0002	5.35	66197.8451	4.820843852
EW-8	28.11	264	1,500	74,057	1825	1060	0.0002	5.35	180429.78	5.256308219
EW-9	27.77	264	1,500	74,057	1825	1140	0.0002	5.35	155994.845	5.193110247
EW-10	26.31	264	1,500	74,057	1825	1560	0.0002	5.35	83304.9394	4.920670753
IW-1	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-2	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-3	-31.41	264	1,500	74,057	1825	520	0.0002	5.35	749744.455	5.874913262
IW-4	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-5	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-6	-28.76	264	1,500	74,057	1825	920	0.0002	5.35	239521.385	5.379344295
IW-7	-27.98	264	1,500	74,057	1825	1090	0.0002	5.35	170634.543	5.232066954
IW-8	-26.88	264	1,500	74,057	1825	1380	0.0002	5.35	106453.949	5.027161777
IW-9	-26.22	264	1,500	74,057	1825	1590	0.0002	5.35	80191.0133	4.904125701
IW-10	-25.65	264	1,500	74,057	1825	1800	0.0002	5.35	62571.2656	4.79637494

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -74.27

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
EW-2	24.78	264	1,500	74,057	1825	2170	0.0002	5.35	43052.7088	4.634000482
EW-3	25.70	264	1,500	74,057	1825	1780	0.0002	5.35	63985.2609	4.806079945
EW-4	26.02	264	1,500	74,057	1825	1660	0.0002	5.35	73570.5112	4.866703774
EW-5	27.09	264	1,500	74,057	1825	1320	0.0002	5.35	116351.527	5.065772087
EW-6	27.81	264	1,500	74,057	1825	1130	0.0002	5.35	158768.032	5.200763063
EW-7	27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
EW-8	30.45	264	1,500	74,057	1825	640	0.0002	5.35	494948.488	5.694560002
EW-9	30.52	264	1,500	74,057	1825	630	0.0002	5.35	510785.842	5.708238851
EW-10	28.02	264	1,500	74,057	1825	1080	0.0002	5.35	173809.071	5.240072439
IW-1	-31.41	264	1,500	74,057	1825	520	0.0002	5.35	749744.455	5.874913262
IW-2	-31.41	264	1,500	74,057	1825	520	0.0002	5.35	749744.455	5.874913262
IW-3	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-4	-31.33	264	1,500	74,057	1825	530	0.0002	5.35	721719.119	5.858368211
IW-5	-31.88	264	1,500	74,057	1825	470	0.0002	5.35	917749.663	5.962724234
IW-6	-28.82	264	1,500	74,057	1825	910	0.0002	5.35	244814.516	5.388837165
IW-7	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-8	-27.38	264	1,500	74,057	1825	1240	0.0002	5.35	131848.921	5.120076579
IW-9	-27.34	264	1,500	74,057	1825	1250	0.0002	5.35	129747.776	5.113099924
IW-10	-26.25	264	1,500	74,057	1825	1580	0.0002	5.35	81209.3016	4.909605776

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -63.87

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.76	264	1,500	74,057	1825	2700	0.0002	5.35	27809.4514	4.444192421
EW-2	23.94	264	1,500	74,057	1825	2600	0.0002	5.35	29989.7782	4.476973254
EW-3	24.51	264	1,500	74,057	1825	2300	0.0002	5.35	38323.4217	4.583464278
EW-4	24.84	264	1,500	74,057	1825	2140	0.0002	5.35	44268.255	4.646092403
EW-5	25.52	264	1,500	74,057	1825	1850	0.0002	5.35	59234.7409	4.772576493
EW-6	26.08	264	1,500	74,057	1825	1640	0.0002	5.35	75375.8554	4.877232254
EW-7	26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
EW-8	27.65	264	1,500	74,057	1825	1170	0.0002	5.35	148097.67	5.170548226
EW-9	28.42	264	1,500	74,057	1825	990	0.0002	5.35	206847.159	5.315649561
EW-10	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-1	-29.24	264	1,500	74,057	1825	830	0.0002	5.35	294282.045	5.468763765
IW-2	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-3	-31.33	264	1,500	74,057	1825	530	0.0002	5.35	721719.119	5.858368211
IW-4	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-5	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-6	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-7	-30.31	264	1,500	74,057	1825	660	0.0002	5.35	465406.108	5.667832079
IW-8	-28.87	264	1,500	74,057	1825	900	0.0002	5.35	250285.063	5.398434931
IW-9	-27.69	264	1,500	74,057	1825	1160	0.0002	5.35	150662.084	5.178003971
IW-10	-27.05	264	1,500	74,057	1825	1330	0.0002	5.35	114608.458	5.059216668

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -83.51

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.41	264	1,500	74,057	1825	2350	0.0002	5.35	36709.9865	4.564784225
EW-2	24.76	264	1,500	74,057	1825	2180	0.0002	5.35	42658.6358	4.630006963
EW-3	25.16	264	1,500	74,057	1825	2000	0.0002	5.35	50682.7252	4.704859958
EW-4	25.75	264	1,500	74,057	1825	1760	0.0002	5.35	65447.7339	4.815894614
EW-5	26.11	264	1,500	74,057	1825	1630	0.0002	5.35	76303.5495	4.882544741
EW-6	27.09	264	1,500	74,057	1825	1320	0.0002	5.35	116351.527	5.065772087
EW-7	27.69	264	1,500	74,057	1825	1160	0.0002	5.35	150662.084	5.178003971
EW-8	28.47	264	1,500	74,057	1825	980	0.0002	5.35	211090.067	5.324467798
EW-9	30.99	264	1,500	74,057	1825	570	0.0002	5.35	623979.38	5.795170238
EW-10	29.24	264	1,500	74,057	1825	830	0.0002	5.35	294282.045	5.468763765
IW-1	-28.47	264	1,500	74,057	1825	980	0.0002	5.35	211090.067	5.324467798
IW-2	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-3	-31.88	264	1,500	74,057	1825	470	0.0002	5.35	917749.663	5.962724234
IW-4	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-5	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-6	-30.83	264	1,500	74,057	1825	590	0.0002	5.35	582392.705	5.765215926
IW-7	-33.39	264	1,500	74,057	1825	340	0.0002	5.35	1753727.51	6.243962116
IW-8	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-9	-29.36	264	1,500	74,057	1825	810	0.0002	5.35	308993.904	5.489949912
IW-10	-27.89	264	1,500	74,057	1825	1110	0.0002	5.35	164540.947	5.216273992

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -74.12

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.38	264	1,500	74,057	1825	2930	0.0002	5.35	23614.8238	4.373184709
EW-2	23.71	264	1,500	74,057	1825	2730	0.0002	5.35	27201.6129	4.434594656
EW-3	23.96	264	1,500	74,057	1825	2590	0.0002	5.35	30221.8066	4.480320422
EW-4	24.41	264	1,500	74,057	1825	2350	0.0002	5.35	36709.9865	4.564784225
EW-5	24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
EW-6	25.40	264	1,500	74,057	1825	1900	0.0002	5.35	56158.1442	4.749412748
EW-7	25.89	264	1,500	74,057	1825	1710	0.0002	5.35	69331.0422	4.840927729
EW-8	26.43	264	1,500	74,057	1825	1520	0.0002	5.35	87747.1003	4.943232774
EW-9	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
EW-10	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-1	-27.23	264	1,500	74,057	1825	1280	0.0002	5.35	123737.122	5.09250001
IW-2	-28.76	264	1,500	74,057	1825	920	0.0002	5.35	239521.385	5.379344295
IW-3	-28.82	264	1,500	74,057	1825	910	0.0002	5.35	244814.516	5.388837165
IW-4	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-5	-30.83	264	1,500	74,057	1825	590	0.0002	5.35	582392.705	5.765215926
IW-6	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-7	-31.50	264	1,500	74,057	1825	510	0.0002	5.35	779434.451	5.891779598
IW-8	-31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-9	-28.82	264	1,500	74,057	1825	910	0.0002	5.35	244814.516	5.388837165
IW-10	-28.66	264	1,500	74,057	1825	940	0.0002	5.35	229437.416	5.360664243

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -86.58

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.08	264	1,500	74,057	1825	2520	0.0002	5.35	31924.1151	4.504118868
EW-2	24.61	264	1,500	74,057	1825	2250	0.0002	5.35	40045.61	4.602554913
EW-3	24.63	264	1,500	74,057	1825	2240	0.0002	5.35	40403.9582	4.606423913
EW-4	25.35	264	1,500	74,057	1825	1920	0.0002	5.35	54994.2764	4.740317492
EW-5	25.40	264	1,500	74,057	1825	1900	0.0002	5.35	56158.1442	4.749412748
EW-6	26.34	264	1,500	74,057	1825	1550	0.0002	5.35	84383.3093	4.926256553
EW-7	27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
EW-8	27.27	264	1,500	74,057	1825	1270	0.0002	5.35	125693.41	5.099312508
EW-9	29.78	264	1,500	74,057	1825	740	0.0002	5.35	370217.13	5.56845651
EW-10	29.36	264	1,500	74,057	1825	810	0.0002	5.35	308993.904	5.489949912
IW-1	-27.12	264	1,500	74,057	1825	1310	0.0002	5.35	118134.666	5.072377358
IW-2	-27.98	264	1,500	74,057	1825	1090	0.0002	5.35	170634.543	5.232066954
IW-3	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-4	-30.31	264	1,500	74,057	1825	660	0.0002	5.35	465406.108	5.667832079
IW-5	-33.39	264	1,500	74,057	1825	340	0.0002	5.35	1753727.51	6.243962116
IW-6	-31.50	264	1,500	74,057	1825	510	0.0002	5.35	779434.451	5.891779598
IW-7	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-8	-31.79	264	1,500	74,057	1825	480	0.0002	5.35	879908.423	5.944437475
IW-9	-31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-10	-29.65	264	1,500	74,057	1825	760	0.0002	5.35	350988.401	5.545292765

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -79.68

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.34	264	1,500	74,057	1825	2960	0.0002	5.35	23138.5707	4.364336528
EW-2	23.85	264	1,500	74,057	1825	2650	0.0002	5.35	28868.7648	4.460428202
EW-3	23.75	264	1,500	74,057	1825	2710	0.0002	5.35	27604.5942	4.440981368
EW-4	24.39	264	1,500	74,057	1825	2360	0.0002	5.35	36399.5441	4.561095944
EW-5	24.31	264	1,500	74,057	1825	2400	0.0002	5.35	35196.3369	4.546497466
EW-6	25.11	264	1,500	74,057	1825	2020	0.0002	5.35	49684.0752	4.696217211
EW-7	26.05	264	1,500	74,057	1825	1650	0.0002	5.35	74464.9773	4.871952061
EW-8	25.75	264	1,500	74,057	1825	1760	0.0002	5.35	65447.7339	4.815894614
EW-9	27.45	264	1,500	74,057	1825	1220	0.0002	5.35	136207.27	5.134200288
EW-10	27.61	264	1,500	74,057	1825	1180	0.0002	5.35	145598.176	5.163155935
IW-1	-25.94	264	1,500	74,057	1825	1690	0.0002	5.35	70981.7235	4.85114654
IW-2	-26.88	264	1,500	74,057	1825	1380	0.0002	5.35	106453.949	5.027161777
IW-3	-27.38	264	1,500	74,057	1825	1240	0.0002	5.35	131848.921	5.120076579
IW-4	-28.87	264	1,500	74,057	1825	900	0.0002	5.35	250285.063	5.398434931
IW-5	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-6	-31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-7	-31.79	264	1,500	74,057	1825	480	0.0002	5.35	879908.423	5.944437475
IW-8	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-9	-31.07	264	1,500	74,057	1825	560	0.0002	5.35	646463.331	5.810543896
IW-10	-32.09	264	1,500	74,057	1825	450	0.0002	5.35	1001140.25	6.000494922

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -84.56

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.07	264	1,500	74,057	1825	2530	0.0002	5.35	31672.2493	4.500678907
EW-2	24.82	264	1,500	74,057	1825	2150	0.0002	5.35	43857.415	4.64204303
EW-3	24.39	264	1,500	74,057	1825	2360	0.0002	5.35	36399.5441	4.561095944
EW-4	25.32	264	1,500	74,057	1825	1930	0.0002	5.35	54425.8639	4.735805332
EW-5	24.87	264	1,500	74,057	1825	2130	0.0002	5.35	44684.8951	4.650160743
EW-6	25.89	264	1,500	74,057	1825	1710	0.0002	5.35	69331.0422	4.840927729
EW-7	27.53	264	1,500	74,057	1825	1200	0.0002	5.35	140785.348	5.148557458
EW-8	26.22	264	1,500	74,057	1825	1590	0.0002	5.35	80191.0133	4.904125701
EW-9	28.62	264	1,500	74,057	1825	950	0.0002	5.35	224632.577	5.351472739
EW-10	30.03	264	1,500	74,057	1825	700	0.0002	5.35	413736.532	5.61672387
IW-1	-25.73	264	1,500	74,057	1825	1770	0.0002	5.35	64710.3006	4.810973417
IW-2	-26.22	264	1,500	74,057	1825	1590	0.0002	5.35	80191.0133	4.904125701
IW-3	-27.34	264	1,500	74,057	1825	1250	0.0002	5.35	129747.776	5.113099924
IW-4	-27.69	264	1,500	74,057	1825	1160	0.0002	5.35	150662.084	5.178003971
IW-5	-29.36	264	1,500	74,057	1825	810	0.0002	5.35	308993.904	5.489949912
IW-6	-28.82	264	1,500	74,057	1825	910	0.0002	5.35	244814.516	5.388837165
IW-7	-31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-8	-31.07	264	1,500	74,057	1825	560	0.0002	5.35	646463.331	5.810543896
IW-9	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-10	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -69.20

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.26	264	1,500	74,057	1825	3010	0.0002	5.35	22376.2321	4.349786959
EW-2	23.94	264	1,500	74,057	1825	2600	0.0002	5.35	29989.7782	4.476973254
EW-3	23.55	264	1,500	74,057	1825	2830	0.0002	5.35	25313.2016	4.403347079
EW-4	24.29	264	1,500	74,057	1825	2410	0.0002	5.35	34904.8571	4.542885865
EW-5	23.96	264	1,500	74,057	1825	2590	0.0002	5.35	30221.8066	4.480320422
EW-6	24.78	264	1,500	74,057	1825	2170	0.0002	5.35	43052.7088	4.634000482
EW-7	25.97	264	1,500	74,057	1825	1680	0.0002	5.35	71829.259	4.856301386
EW-8	25.16	264	1,500	74,057	1825	2000	0.0002	5.35	50682.7252	4.704859958
EW-9	26.81	264	1,500	74,057	1825	1400	0.0002	5.35	103434.133	5.014663878
EW-10	27.57	264	1,500	74,057	1825	1190	0.0002	5.35	143161.43	5.155826027
IW-1	-25.02	264	1,500	74,057	1825	2060	0.0002	5.35	47773.3294	4.679185509
IW-2	-25.65	264	1,500	74,057	1825	1800	0.0002	5.35	62571.2656	4.79637494
IW-3	-26.25	264	1,500	74,057	1825	1580	0.0002	5.35	81209.3016	4.909605776
IW-4	-27.05	264	1,500	74,057	1825	1330	0.0002	5.35	114608.458	5.059216668
IW-5	-27.89	264	1,500	74,057	1825	1110	0.0002	5.35	164540.947	5.216273992
IW-6	-28.66	264	1,500	74,057	1825	940	0.0002	5.35	229437.416	5.360664243
IW-7	-29.65	264	1,500	74,057	1825	760	0.0002	5.35	350988.401	5.545292765
IW-8	-32.09	264	1,500	74,057	1825	450	0.0002	5.35	1001140.25	6.000494922
IW-9	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-10	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -76.13

APPENDIX C

Thermal Modeling

APPENDIX C

THERMAL MODELING

Case Study 1 (in degrees Kelvin)

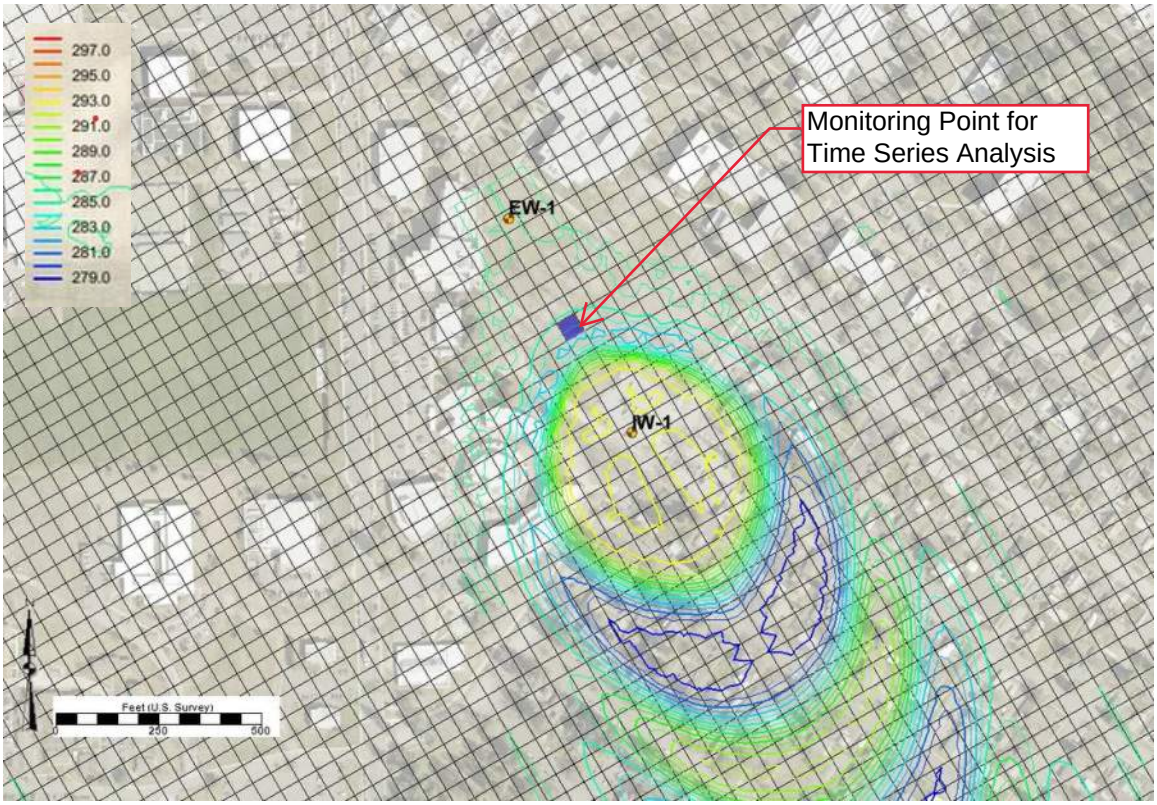


Figure C1. Temperature (Kelvin) at the end of the 5-year simulation.

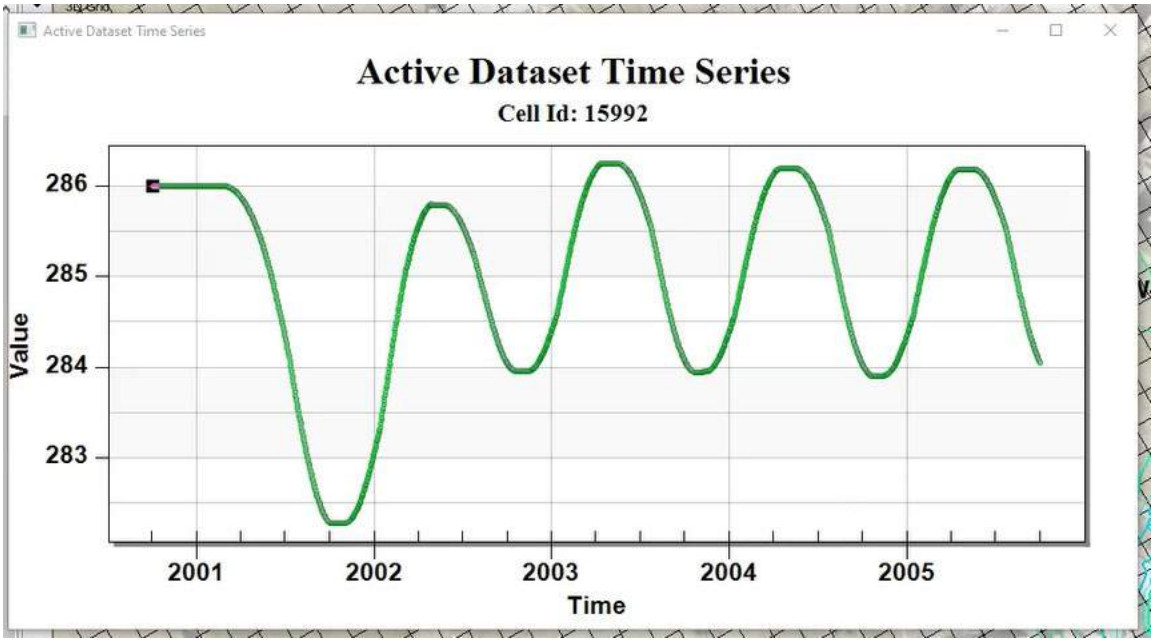


Figure C2. Timeseries of temperature in a cell in between the EW and IW (blue highlighted cell in the image above – about 300 ft down-gradient of the extraction well).

Case Study 2 (in degrees Kelvin)

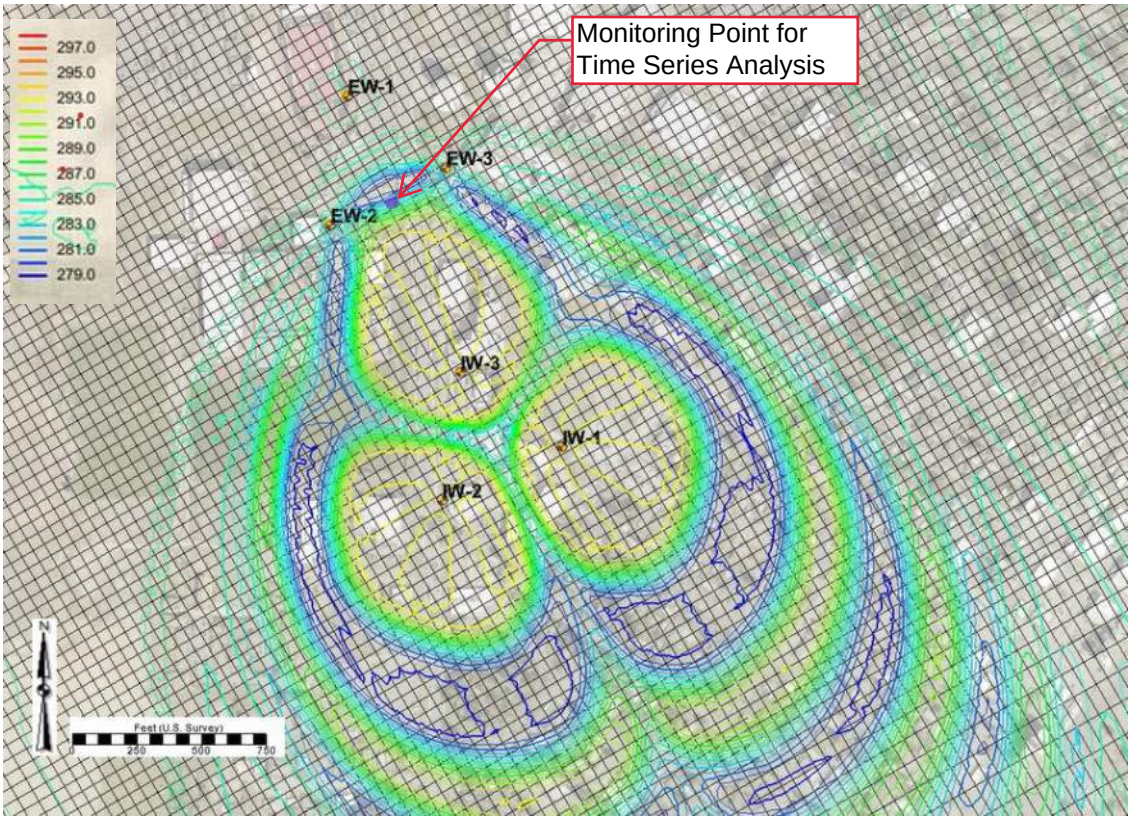


Figure C3. Temperature (Kelvin) at the end of the 5-year simulation.

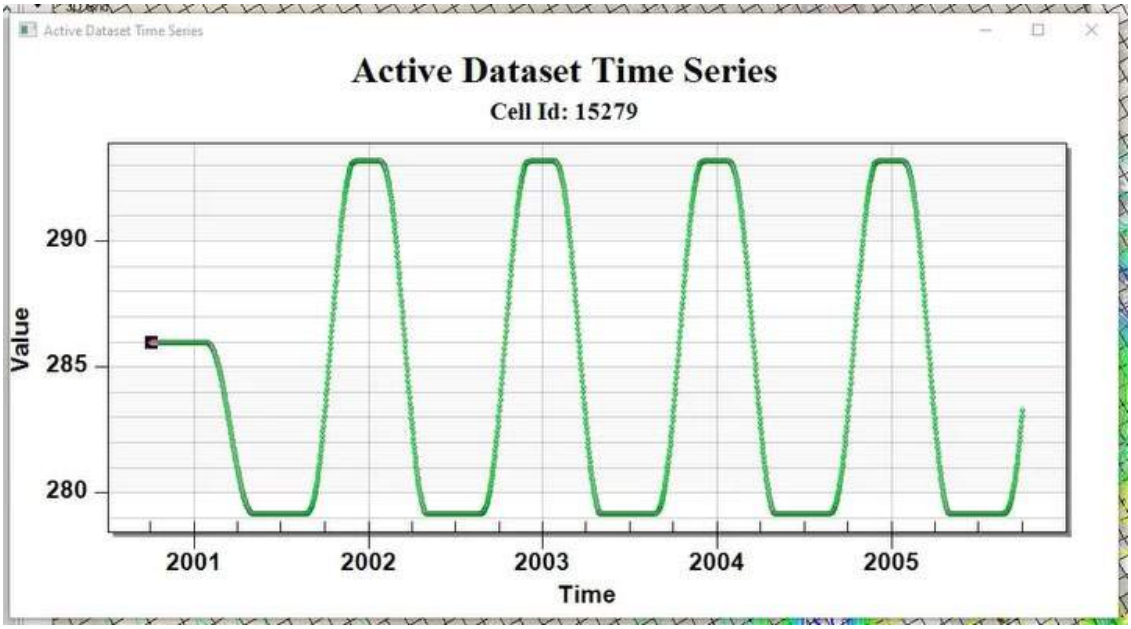


Figure C4. Timeseries of temperature in a cell in between the EW-2 and EW-3 and IW (blue highlighted cell in the image above).

Case Study 3 (in degrees Kelvin)

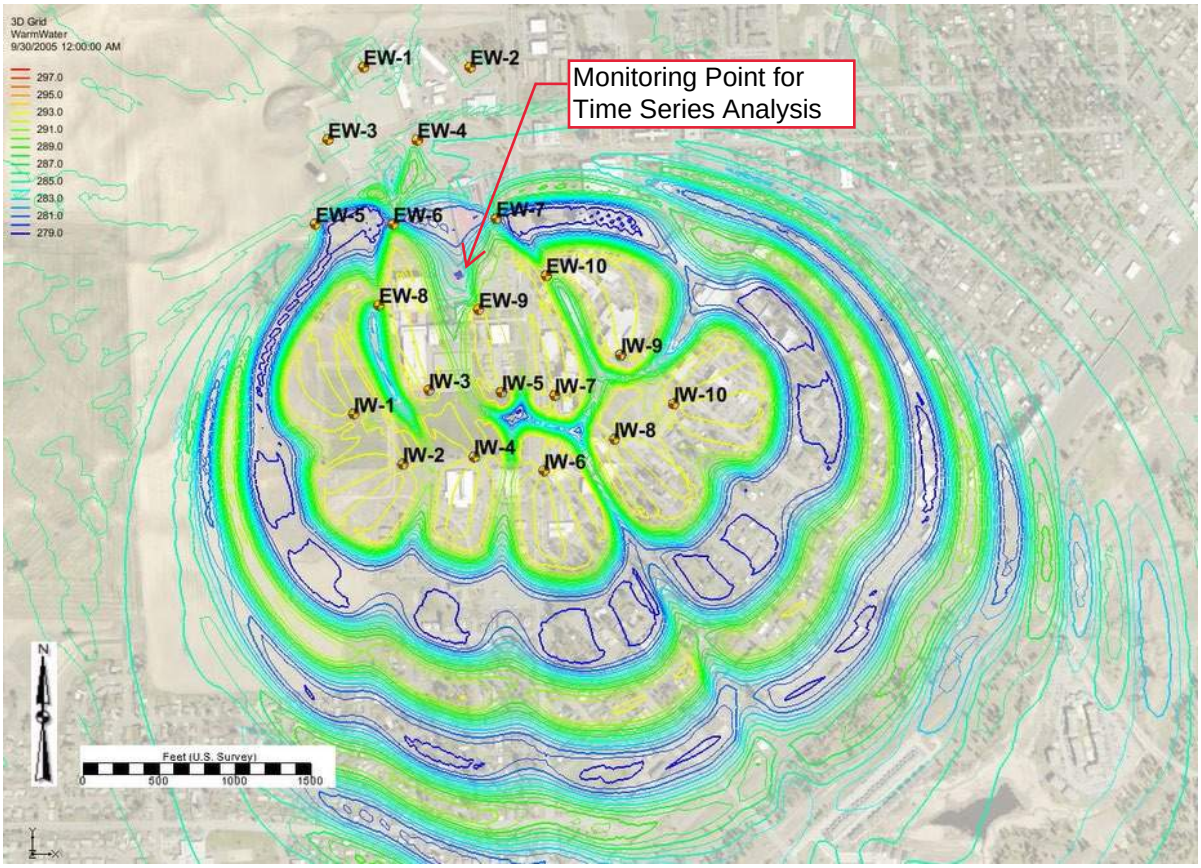


Figure C5. Temperature (Kelvin) at the end of the 5-year simulation.

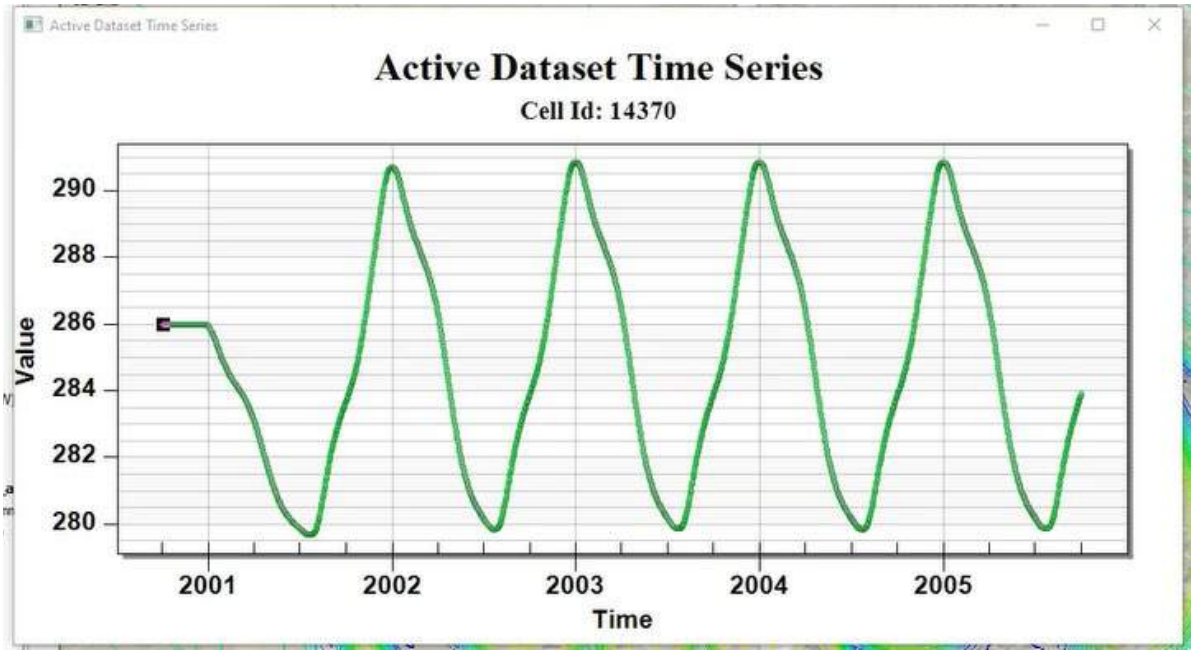


Figure C6. Timeseries of temperature in a cell in between the EW-6, EW-7, EW-8, EW-9, and EW-10 (blue highlighted cell in the image above).

APPENDIX D

Water Right Application

Application for a New Water Right Permit

Form No. ECY 040-1-14 (Rev 05-2020)

DEPARTMENT OF ECOLOGY
State of Washington

- Refer to accompanying guidance to complete this form.
- We strongly encourage applicants to seek pre-application consultation prior to applying.
- Incomplete applications will be returned.
- All fees are non-refundable (RCW 90.03.470(13)).

Processing option you are choosing:

X **Standard Processing** (Department of Ecology)	☐ **Cost Reimbursement Agreement Processing** (Ecology Contractor)
A minimum $50 fee is required to apply. Additional fees may apply. Drought applications are exempt.	Contact Department of Ecology to obtain information on this option.

Submit all applications and fees to:

DEPARTMENT OF ECOLOGY
CASHIERING SECTION
PO BOX 47611
OLYMPIA, WA 98504-7611

Check the box for the region where your project is located.

- ☐ Central Region
- X Eastern Region
- ☐ Northwest Region
- ☐ Southwest Region

ADA Requests

To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program at 360-407-6872. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

DEPARTMENT OF ECOLOGY
State of Washington

WATER RESOURCES PROGRAM
Application for a New Water Right Permit

For Ecology Use
(Date Stamp)

I am applying for a:

☒ New groundwater right permit
☐ New surface water right permit

☐ Short-term water right permit (less than 4 months, non-recurring)
Dates the water will be needed:
FROM: ____/____/____
TO: ____/____/____

☐ Cost Reimbursement Processing
☐ Drought (see Attachment A)

Required submittals:

- ☐ A $50 filing fee. This fee is not required for drought or cost reimbursement applications.
- ☐ A map showing the proposed point(s) of diversion/withdrawal and place(s) of use.
- ☐ A copy of the legal description of property where the water will be used (taken from a real estate contract, property deed, or title insurance policy).
- ☐ If platted property, a complete copy of the plat map.

Date of pre-application consultation with Ecology: ____

Name of Ecology contact for pre-application: ____

1. Applicant Information (Complete all applicable boxes)

APPLICANT/BUSINESS NAME:	PHONE NO:	OTHER NO:
Eastern Washington University, Attn: Steve Schmedding	509-359-4205	509-359-0455
ADDRESS: 101 Rozell		
CITY: Cheney	STATE: WA	ZIP: 99004-2464
EMAIL ADDRESS (IF AVAILABLE): sschmedding@ewu.edu		

CONTACT NAME (IF DIFFERENT FROM ABOVE):	PHONE NO:	OTHER NO:
Gene St.Godard	509-953-9395	
RELATIONSHIP TO APPLICANT: Consultant		
ADDRESS: PO Box 28755		
CITY: Spokane	STATE: WA	ZIP: 99228
EMAIL ADDRESS (IF AVAILABLE): wnrgroup@comcast.net		

FOR ECOLOGY USE	**ECY CODING: 001-001-WR1-0285-000011**
	APPLICATION NO:_____ DOC ID NO._____ SEPA: EXEMPT/NOT EXEMPT
	FEE PAID:_____ CHECK NO:_____
DATE RETURNED _____ BY_____ PRIORITY DATE _____ BY_____ WRIA:_____	
PRE-APPLICATION INTERVIEWER:	

2. Project Description

Attach a report with responses to the following required information, and reference the section number in your responses.

Section	Required information	Reference(s)
2.1	Provide a brief narrative explaining the general nature and intent of the proposed water use.	
2.2	If the proposed water use will include a diversion from a new or permitted reservoir, list any associated water rights, and the means of withdrawal.	
2.3	Attach a copy of any SEPA checklists or environmental analyses related to this project with this application.	
2.4	Describe how you will measure and control the rate and volume of your diversion or withdrawal.	

3. Purpose(s) and Period of Use

List all purposes for which water will be applied to a beneficial use, and provide the quantity required for each.

PURPOSE(S) OF USE	RATE (CHECK ONE BOX ONLY) ☐ CFS X GPM	ACRE-FEET PER YEAR (AF/YR)	PROPOSED NUMBER OF IRRIGATED ACRES	PERIOD OF USE (CONTINUOUS, OR DATES OF PROPOSED USE)
Heat Exchange	12,000	0	0	Continuous
TOTAL:	12,000	0	0	

Section	Required information	Reference(s)
3.1	For domestic water supply systems proposals with **fewer than 15 residential connections,** provide**:** • Projected number of connections to be served • Type of connections (e.g., home, recreational cabin)	
3.2	For domestic water supply systems proposals with **more than 15 residential connections,** provide**:** • Present population to be served water • Estimated future population to be served (20 year projection) • Whether you have a Water System Plan approved by the Washington State Department of Health, Drinking Water Division, and the date of plan approval. • Water System Identification Number • Name of water system	RCW 90.03.015
3.3	**For stockwater purposes,** provide the number of animals and type of stock, and daily water requirements per animal.	

Section	Required information	Reference(s)
3.4	**For agricultural irrigation,** calculate the acreage in which you have a controlling interest, including only: • Acreage irrigated under water rights acquired after December 8, 1977, • Acreage proposed to be irrigated under this application, and • Acreage proposed to be irrigated under other pending application(s). Is the combined acreage under existing rights greater than 6,000 acres? • Do you have a controlling interest in a Family Farm Development Permit? If yes, provide the permit number.	RCW 90.66
3.5	**For other farm uses,** describe all proposed uses.	
3.6	**For hydropower uses,** indicate: • Total feet of head • Proposed capacity in kilowatts • Describe works • Indicate all uses to which power is to be applied • FERC License Number	RCW 90.03.260
3.7	**For industrial/mining uses,** describe the type of industrial/mining operations, and the method of supplying and utilizing water.	
3.8	**For other uses,** describe your use in detail.	

4. Point(s) of Diversion or Withdrawal Location(s)

Use a separate application for each source (either surface water or groundwater). Attach additional sheets if more than four points of diversion or withdrawal are proposed. Refer to the application guidance document for more information.

Source Name	Source Location Information (Legal Description)					
SOURCE NAME (Reference by number below)	QTR QTR	QTR	SEC	TWP	RGE	PARCEL NO.
1 Extraction Well	SW	SE	11	23N	41E	13114.0005
3 Extraction Wells	SE	SE	11	23N	41E	13114.0006
3 Injection Wells	NW	NW	13	23N	41E	13132.7302, 13132.0003
1 Extraction Wells	NW	NW	13	23N	41E	13132.7302, 13132.0003
2 Injection Wells	SW	NW	13	23N	41E	13132.7302
4 Extraction Wells	NE	NE	14	23N	41E	13141.0001
3 Injection Wells	NE	NE	14	23N	41E	13141.0023, 13141.0001
1 Extraction Well	NW	NE	14	23N	41E	13141.0026, 13141.0024
2 Injection Wells	SE	NE	14	23N	41E	13141.0023

Complete one of the following tables: A for surface water, or B for groundwater

A) Point(s) of Diversion (SURFACE WATER ONLY)

☐ SPRING ☐ CREEK ☐ RIVER ☐ LAKE ☐ OTHER:		
SOURCE (identified above)	**TRIBUTARY TO:**	**GPS/ LAT-LONG**
1.		
2.		
3.		
4.		

DO YOU OWN THE POINT(S) OF DIVERSION? ☐ YES ☐ NO

B) Point(s) of Withdrawal (GROUNDWATER ONLY)

WITHDRAWAL DEVICE: X WELL ☐ OTHER:			
EXISTING WELL: ☐ YES XNO			
SOURCE (identified above)	**WELL NO.**	**WELL TAG NO.**	**GPS/ LAT-LONG**
1.	10 proposed extraction wells		Exact location to be detemined
2.	10 proposed injection wells		Exact location to be detemined

DO YOU OWN THE POINT(S) OF WITHDRAWAL? x YES ☐ NO

5. Water Storage

Section	Required information	Reference(s)
5.1	If you will be storing 10 acre-feet or more of water and/or if the water depth will be 10 feet or more at the deepest point and some portion of the storage will be above grade, you must also complete an "*Application for Permit to Construct a Reservoir*," and a *"Dam Construction or Decommissioning Permit Application*."	WAC 173-175 WAC 508-12-260
5.2	If applicable, describe your proposed impoundment, including the volume and maximum depth.	
5.3	If you are proposing an Aquifer Storage and Recovery project, Do not use this form. Use "*Form ECY 040-1-60: Application for a Reservoir Permit"* • https://fortress.wa.gov/ecy/publications/summarypages/ECY040160.html	

6. Place of Use

QTR QTR	QTR	SEC	TWP	RGE	COUNTY	PARCEL NO.	NO. OF IRRIGATED ACRES
	SE	11	23N	41E	Spokane	Area serviced by EASTERN WASHINGTON UNIVERSITY	
	SW	12	23N	41E			
	NW	13	23N	41E			
	NE	14	23N	41E			

Outline the area to be irrigated on your attached map, if applicable.

LEGAL LANDOWNER OF PROPOSED PLACE OF USE (IF DIFFERENT THAN APPLICANT)	PHONE NO.	ALT PHONE NO.
ADDRESS		
CITY	STATE	ZIP CODE
EMAIL ADDRESS (IF AVAILABLE)		

Attach additional sheets as necessary.

7. Related Water Rights (if applicable)

Section	Required information	Reference(s)
7.1	List any other water rights (applications, permits, certificates, or claims) related to this application. Include any rights that overlap the place of use.	
7.2	Explain how the water rights listed above have been exercised.	

8. System Design and Operation

Section	Required information	Reference(s)
8.1	Provide a description of the proposed water supply system from the point of diversion or withdrawal to the proposed place of use.	
8.2	Provide preliminary design plans and specifications for the proposed use, including diversion or withdrawal and conveyance facilities, if applicable, and the proposed flow rate and volume design capacity.	
8.3	Provide the projected system efficiency.	
8.4	**For surface water diversions,** describe how your plans comply with WDFW fish screening requirements.	RCW 77.57

DEVELOPMENT SCHEDULE

Section	Required information	
8.5	Provide a general timeline that includes the steps needed to begin the project, complete the project, and put the water to full beneficial use.	
8.6	Identify and discuss other land-use or environmental permits required and the timeline to obtain those permits.	

9. Hydrogeologic Analysis

We strongly recommend that applicants consult with Ecology in a pre-application meeting prior to conducting ***any*** hydrogeologic work, to determine the scope of data required for processing this application.

Section	Required information	Reference(s)
9.1	If known, describe the hydrogeologic setting and identify all groundwater bodies and surface water bodies involved.	
9.2	If known, describe: • Geographic recharge and discharge areas • Seasonal variations of groundwater elevations • Interrelationships between surface water and groundwater, and between aquifers • Barriers to flow • Hydrologic boundaries	
9.3	Attach any available well information including: • Water well report • Well diameter and depth • Motor and pump specifications (i.e., make, horsepower, and type) • Pump test data • Well locations (must be identified as outlined in Section 11)	
9.4	If known, describe the following charicteristics of the aquifer, and cite the source of that information: • Aquifer transmissivity • Aquifer storage coefficient and specific yield • Saturated thickness • Aquitard leakage • A detailed description of groundwater-flow boundaries • Water-level hydrographs for wells • Associated water-quality information	

If your proposed water use impacts or impairs a protected water source or an existing water right, you will need to discuss mitigation options in **Attachment B** with the appropriate regional office.

10. Environmental Assessment

Section	Required information	
10.1	Describe the aquatic uses of any related surface water bodies (i.e., fish and wildlife, recreation and aesthetic, water quality, etc.).	
10.2	Indicate whether the related surface water is fish-bearing, including whether it is inhabited by salmonids. List species and the times of year they are present. https://apps.wdfw.wa.gov/salmonscape/	

11. Driving Directions

Section	Required information	Reference(s)
11.1	Site address, and detailed driving directions to the project site.	

12. Maps and Other Documentation

Section	Required information	
12.1	Attach detailed map(s) clearly indicating the following: • The proposed places of use for all rights related to this application. If any overlapping water rights for the place of use, or multiple rights that share the same point(s) of diversion/withdrawal exist, provide one map depicting all of the historic points of diversion, means of conveyance, and places of use. Identify related rights as such by water right number. • The county parcel numbers for the proposed place of use, unless the place of use is for a large service area such as that served by an irrigation district or municipal water system. Identify the name of the irrigation district or the water system, if applicable. • The proposed locations of the point(s) of diversion/withdrawal. • The names, informal or formal, used to identify each point of diversion/withdrawal (e.g., Well No. 1, River Well, S01, Smith Dam, etc.). • A grid layer referencing Section, Township, and Range of the area. • The location of the water delivery system and other such features relevant to your proposed application (e.g., mainlines, reservoirs, booster pumps, etc.)	

13. Signatures

I certify that the information provided in this application is true and accurate to the best of my knowledge. I understand that in order to process my application, I grant staff from the Department of Ecology access to the site for inspection and monitoring purposes. Even though the employees of the Department of Ecology may have assisted me in the preparation of the above application, all responsibility for the accuracy of the information rests with me, the applicant.

Print Name (Eastern Washington University)	Signature	Date
Print Name (Legal Owner or Part Owner Place of Use)	Signature	Date
Print Name (Legal Owner or Part Owner Place of Use)	Signature	Date

For additional information, contact the Ecology regional office where your project is located:

Region	Counties served	Mailing Address	Phone
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	3190 160th Ave SE Bellevue, WA 98008	425-649-7000
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300

ADA Requests

To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program at 360-407-6872. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Attachment A: Drought Authorizations

Note: In order to apply for a new temporary drought permit, applicants must be conducting a previously established activity under a valid water right permit, certificate, or water right claim within an area covered by a formal drought declaration. (WAC 173-166).

Complete this attachment and the following sections of the Application for a New Water Right:

- Sections 1 through 5
- Section 11. Maps and other Documentation

Section	Required information	Reference(s)
A.1	Describe the specific circumstances pertaining to your water shortage. Describe how existing water rights are insufficient to address these impacts due to the drought.	
A.2	Describe how the water right proposed will address these impacts.	
A.3	Have you had any previous drought-specific authorizations for the subject parcels? If yes: • What are the Drought Authorization numbers? • Did those former authorizations cause impairment to other water users?	RCW 43.83B.410

Attachment B: Mitigation Plan

Section	Required information	Reference(s)
B.1	Identify the source of supply for the proposed mitigation water.	
B.2	Estimate the consumptive quantity of water for the proposed use. Describe the methodology used to support your estimate.	
B.3	Describe how the proposed mitigation would offset the impacts of the proposed withdrawal or diversion.	
B.4	Describe the measures that will be taken to ensure mitigation will be maintained for the duration of the water right authorization.	
B.5	Provide copies of any agreements between you and other parties regarding mitigation for impacts, if applicable.	
B.6	Describe the benefits and costs, including environmental effects, of any water impoundment or other resource management technique that is included as a component of the application.	RCW 90.03.255 RCW 90.44.055
B.7	**For surface water**, analyze whether there will be any increased water supply from the impoundment or technique, including recharge of groundwater, as a means of making water available or otherwise offsetting diversion impacts.	
B.8	**For groundwater**, analyze whether there will be any increased water supply from the impoundment or technique, including recharge of groundwater, as a means of making water available or otherwise offsetting the impact of the diversion of surface water.	
B.9	If you intend to offset your new use, describe how and when non-consumptive water returns to groundwater or surface water, and explain how this volume was estimated. Specifically describe how the quantity, timing and location of return flow would change if the proposed permit is approved.	WAC 173-500-050(5) WAC 173-500-050(9) POL 1020

Attachment
EWU Application for Non-Consumptive Water Right
Proposed Heat Exchange System at EWU Campus

SECTION 2: Project Description

2.1 Brief Narrative

Eastern Washington University (EWU) is evaluating a proposed heat exchange project plan at the EWU campus. This water right application is being submitted to support the non-consumptive use and consists of a phased proposal designed to determine the feasibility and design Ground Source based Heat Pump systems (GSHPs).

The GSHP system proposed by MSI Engineers (engineers under contract to EWU) is an open-loop type system, where groundwater is pumped out of the basalt aquifers, circulated through a heat exchanger, and reinjected back into the earth. Hydraulic and thermal modeling was completed to evaluate hydraulic and thermal capacity of the local aquifer to meet the GHSP demands for each case study (Landau, 2023). Aquifer extraction requires a water right from the Washington Department of Ecology (Ecology) and reinjection requires registration with Ecology's Underground Injection Control program. Permitting considerations are discussed in the appurtenant section below. A detailed discussion of the hydrogeologic assessment, modeling results, well design and recommendations are included in the Landau (2023) report completed for this project.

Closed-loop heat pump systems circulate water through buried piping to exchange heat with the ground, whereas open-loop type systems (Figure 1) pump water directly in and out of the earth, from an available aquifer source. The nature of heat transfer requires closed-loop type systems to utilize a significant number of expensive vertical wells, or large open fields for shallow horizontal loops, whereas open-loop type systems, which use water directly, instead of relying on heat transfer to the earth, only required a few wells. This allows for an economy of both scale and space constraints, especially in the context of a college campus, where open space for multiple wells or heat transfer fields is extremely limited.

The evaluation to be completed at the EWU facility is planned to be undertaken in a phased approach, with the three case studies described below. This application is being submitted assuming the project will continue to full buildout throughout the university. Should the project plans be modified during feasibility and/or construction activities, the application may be modified during development or at the proof of appropriation phase. The three case studies for the project are:

CASE STUDY – 1: MARTIN-WILLIAMSON HALL GSHP SYSTEM

The first case to be studied is based around the upcoming project involving the remodel and retrofit of the existing Martin-Williamson Hall facility. Because the existing, aging, HVAC system in Martin-Williamson Hall will be replaced with an entirely new, modern HVAC system, the application of a possible GSHP based system is easy to propose. This phase will require one 16-inch extraction well and one 16-inch injection well. Proposed Qi for the first phase is 600 gpm.

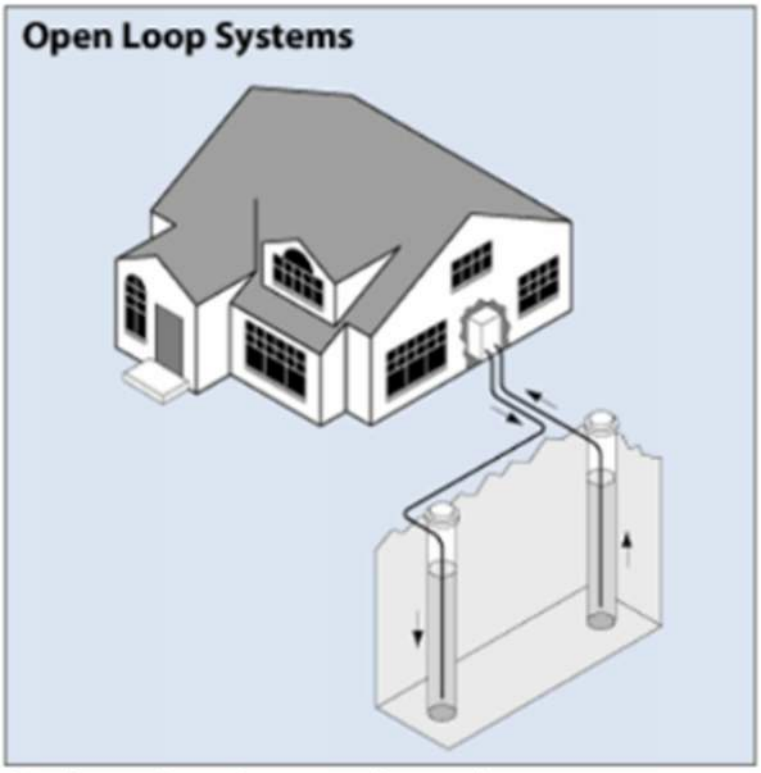
CASE STUDY – 2: FOUR (4) BUILDINGS – MICRO-DISTRICT GSHP SYSTEM

Then, considering the initial M-W case as a likely starting point for the campus transition to GSHP based systems, the nearby buildings that include the JFK Library, the Computing and Engineering Building (CEB) and the Art-Theater-Music (ART) complex, were chosen as part of a so-called Micro-District Heat Transfer Center, under the second case study. This would be a facility where the proposed several open-loop system source wells would deliver the ground water to heat exchangers for the building heat pump systems before the ground water was returned to the ground via the reinjection wells. This phase will require three 16-inch extraction wells and three 16-inch injection wells. Proposed Qi for the second phase is 3,600 gpm.

CASE STUDY – 3: ENTIRE CAMPUS – GSHP SYSTEMS

The third, and final, case study would provide a large network of source and reinjection wells, serving multiple micro-district heat transfer centers sprinkled around the campus, to support the entire campus using GSHP systems. This would be the upper boundary case in converting the whole campus to be conditioned by open-loop ground-source type heat pump systems. This phase will require ten 16-inch extraction well and ten 16-inch injection well. Proposed Qi for the full campus buildout phase is 12,000 gpm.

Figure 1: Generalized Schematic of Open Loop System.



Configuration of a groundwater heat pump system

2.2 Diversion and Other Water Rights

The proposed project will not include a diversion from a new or permitted reservoir. The project area is currently within the boundaries of the EWU Water System Service area. Water supplied to the municipal water system is provided by two wells as shown on Figure 2. This service area currently utilizes three water rights. These include:

Table 1: Summary EWU Existing Water Rights

Water Right No.	Type	Priority	Type	Qi (gpm)	Qa (AF)	Irr. Ac.
G3-*09810CWRIS	groundwater	9/19/1968	Certificate	200	162	--
G3-25018C	groundwater	8/9/1976	Certificate	150	200	125
G3-27882C	groundwater	5/28/1996	Certificate	550	520	125

Note: Water rights above have a provision that the total amount of water authorized for withdrawal under Groundwater Certificates No. 7218-A, G3-25018C and G3-27882C is limited to 900 gallons per minute and 922 acre-feet per year.

This proposal is independent of the three existing water rights currently owed by EWU. These water rights are currently undergoing a proof of appropriation and/or conforming documents for the rights.

2.3 SEPA

A SEPA determination evaluates if a proposed water right diversion will cause significant adverse environmental impacts. A SEPA threshold determination is required for:

- Surface water applications for more than 1 cubic feet per second (cfs). For agricultural irrigation, the threshold increases to 50 cfs, if the project isn't receiving public subsidies.
- Groundwater applications requesting more than 2,250 gpm.
- Projects with several water right applications where the combined diversions meet the conditions listed above.
- Projects subject to SEPA for other reasons.
- Applications that are part of several exempt actions that collectively trigger SEPA under WAC 197-11-305.

A SEPA will be required under this application. The SEPA will be completed upon final submittal of this application.

2.4 Measuring

The groundwater withdrawal will be measured by a dedicated meter at each of the well heads. Pumping rate and quantity withdrawn and injected will be recorded weekly.

SECTION 3: Purpose and Period of Use

3.1 – Not Applicable
3.2 – EWU water system has a DOH approved water system plan (WSP) for Water System ID# 21900. This project is proposed to be independent of those water rights.
3.3 - Not Applicable
3.4 – Not Applicable
3.5 – Not Applicable
3.6 – Not Applicable
3.7 – Industrial Use of Water

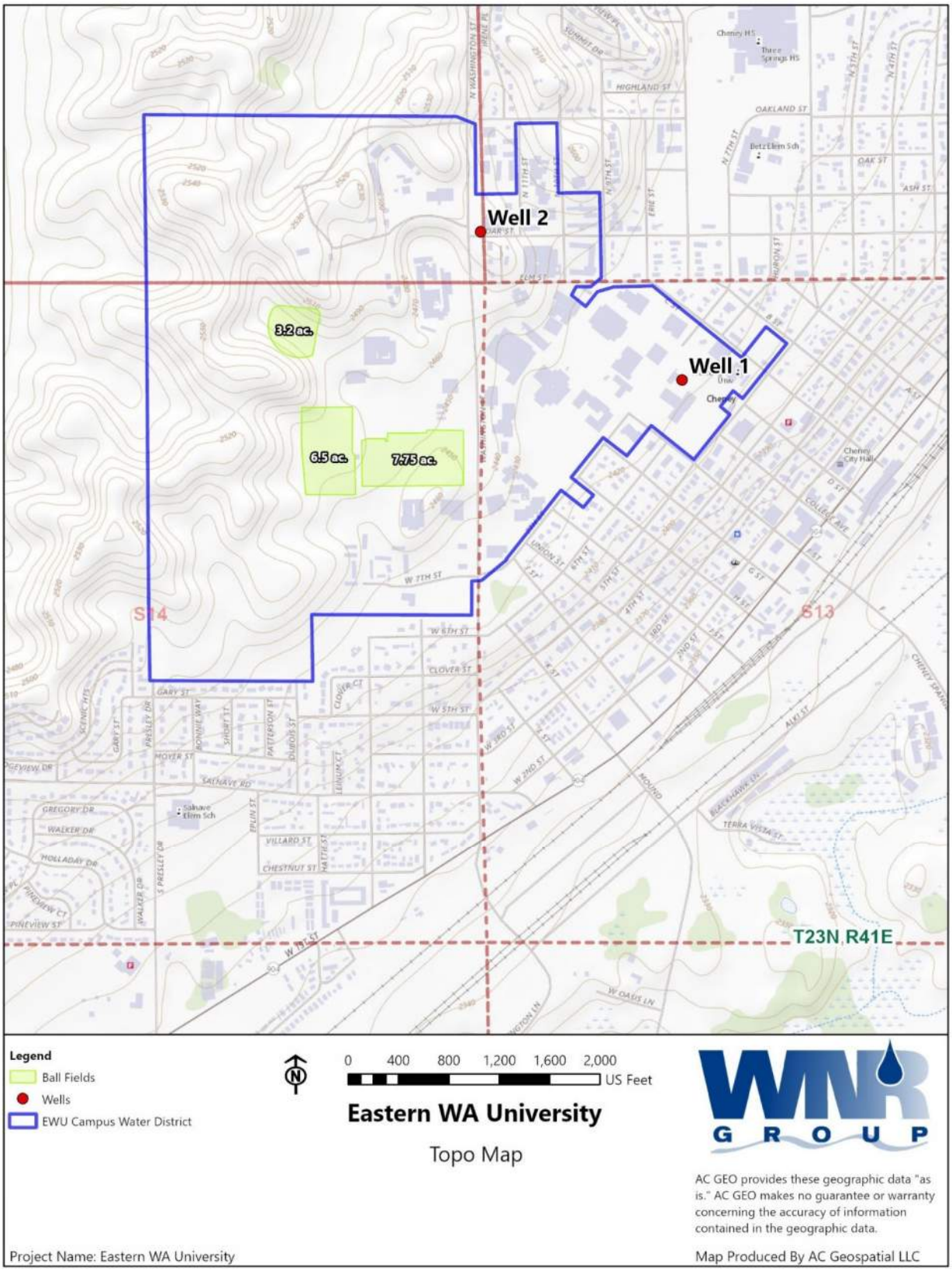


Figure 2: Location of existing municipal wells for EWU service area.

3.8 – Description of Use

The primary goal of this project is to provide EWU with information on a possible pathway to reducing fossil fuel use at the existing campus central heating (and cooling) plant, with the ultimate goal of achieving an Energy Efficient, Zero-Carbon campus. As such it will be looking at the availability of, and characteristics of, the existing aquifer water within the Grande Ronde aquifer beneath the EWU campus. The proposed use is using this ground water for the purpose of heating and/or cooling the EWU campus buildings, as this aquifer acts as a heat-source or heat-sink for efficient operation of ground-source heat pump systems. A ground-source heat pump system is an electric energy-based heating and cooling system, rather than a fossil fuel based system, which uses the earth as a source of stable "energy" for extracting or rejecting heat to (i.e., heat sink or heat source), for the purpose of heating or cooling buildings. Although there are other possible heat pump based systems that utilize the ambient outdoor air, rather than the earth, as the heat source or heat sink, using the earth is considered more efficient, since the thermal mass is much more dense than air, and the typical 50 to 60 deg. F ground temperatures are also more stable than the air, which can vary well over 100 deg. F throughout the seasons.

The heat exchange process calls for pumping water from the proposed source (extraction) wells, passing it through a heat pump exchange unit, for the purpose of heat generation, and then injecting it back into the ground through the proposed injection wells, currently planned at approximately a 600-foot spacing. The intent is to have the full discharge from the heat exchange system return to the source aquifer within a short time of being withdrawn. By doing this, the purpose is considered a non-consumptive use. The standard for the project is for the water to be returned to the same aquifer location from which it was withdrawn without any changes to its chemical content. The project will also require approval through the Underground Injection Control registration, discussed later in this document.

The use of water is proposed for heat exchange purposes and is defined in statute as a beneficial use (RCW 90.54.020(1)) and Ecology Policy-2020. The use is defined as a non-consumptive use.

SECTION 5: Water Storage

5.1 – Not Applicable

5.2 – Not Applicable

5.3 – Not Applicable

SECTION 6

The proposed Heat Exchange project is being evaluated for use within the boundaries of the EWU Water System area. However, the Heat Exchange program will be operated independently of the water supply system currently in use for the university.

SECTION 7 – Related Water Rights

7.1 - The EWU facility is currently developing the change to their three water rights shown in Table 1. These three rights are primarily used for municipal water supply and irrigation on the campus. The WNR Group also conducted a screen of the Ecology WRTS database to determine what water rights were within a ½-mile radius of the boundaries of the EWU service area. These results are shown in Table 2 and on Figure 3.

TABLE 2 – WATE RIGHTS AT AND WITHIN ½-MILE OF EWU WSA BOUNDARY

Water Right No.	Type	Priority Date	Wtr Rgt Type	Qi (gpm)	Qa (AF/yr)	Irrigated Area Quantity	Purpose Of Use Type Codes	Name on Certificate
G3-*09810CWRIS	groundwater	9/19/1968	Certificate	200	162	--	CI, CDS	Eastern Washington University
G3-25018C	groundwater	8/9/1976	Certificate	150	200	125	CDS, HE, Irr	Eastern Washington University
G3-27882C	groundwater	5/28/1996	Certificate	550	520	125	CDS, HE, Irr	Eastern Washington University
G3-*00661SWRIS	groundwater	1/1/1928	Certificate	75	12.3	--	RW (supply for locomotives)	Northern Pacific Railway Co
G3-*00359S	groundwater	8/1/1924	Certificate	625	245	--	MU CI	Cheney City
G3-*00720C	groundwater	1/28/1948	Certificate	900	550	--	MU CI	Cheney City
G3-*00358S	groundwater	8/1/1915	Certificate	475	100	--	MU CI	Cheney City
G3-*00720C	groundwater	1/28/1948	Certificate	900	550	--	MU CI	Cheney City
G3-25859CWRIS	groundwater	1/31/1978	Certificate	1250	2000	--	MU	Cheney City
G3-22439CWRIS	groundwater	1/30/1974	Certificate	500	804	--	MU	Cheney City
G3-*05472C	groundwater	1/25/1960	Certificate	900	1440	--	MU	Cheney City
G3-*07939C	groundwater	1/27/1966	Certificate	750	975	--	MU	Cheney City
G3-034030CL	groundwater	3/1/1954	Claim	80	3	--	DG ST	GREIN
G3-019199CL	groundwater	1/1/1918	Claim	20	1.9	0.5	IR	NABISCO
G3-018216CL	groundwater	6/1/1919	Claim	10	2	--	DG ST	CHRISTOPHER, STEFAN
G3-024741CL	groundwater	1/1/1944	Claim	15	2	--	DG	POPE, STEVE
G3-005892CL	groundwater	4/1/1959	Claim	5	2	--	IR	KINGSLY, Bernard
G3-038954CL	groundwater	1/1/1942	Claim	30	92	--	ST DG	NELSON, Marie
G3-146718CL	groundwater	--	Claim	--	--	--	DG IR	HENRY, Douglas
G3-053567CL	groundwater	--	Claim	--	--	--	DG	PRENTICE, Leonard
G3-139761CL	groundwater	--	Claim	--	--	--	IR	Ableman, Lee
G3-074259CL	groundwater	--	Claim	--	--	--	DG	THUROW, Carl
G3-059148CL	groundwater	--	Claim	--	--	--	DG	LOUTHAN, John
G3-014816CL	groundwater	7/1/1970	Claim	30	48	--	DG	WYATT, Anne
S3-027151CL	surface Wtr	1/1/1900	Claim	0.1	2	0.25	IR ST	DARE, Lisle

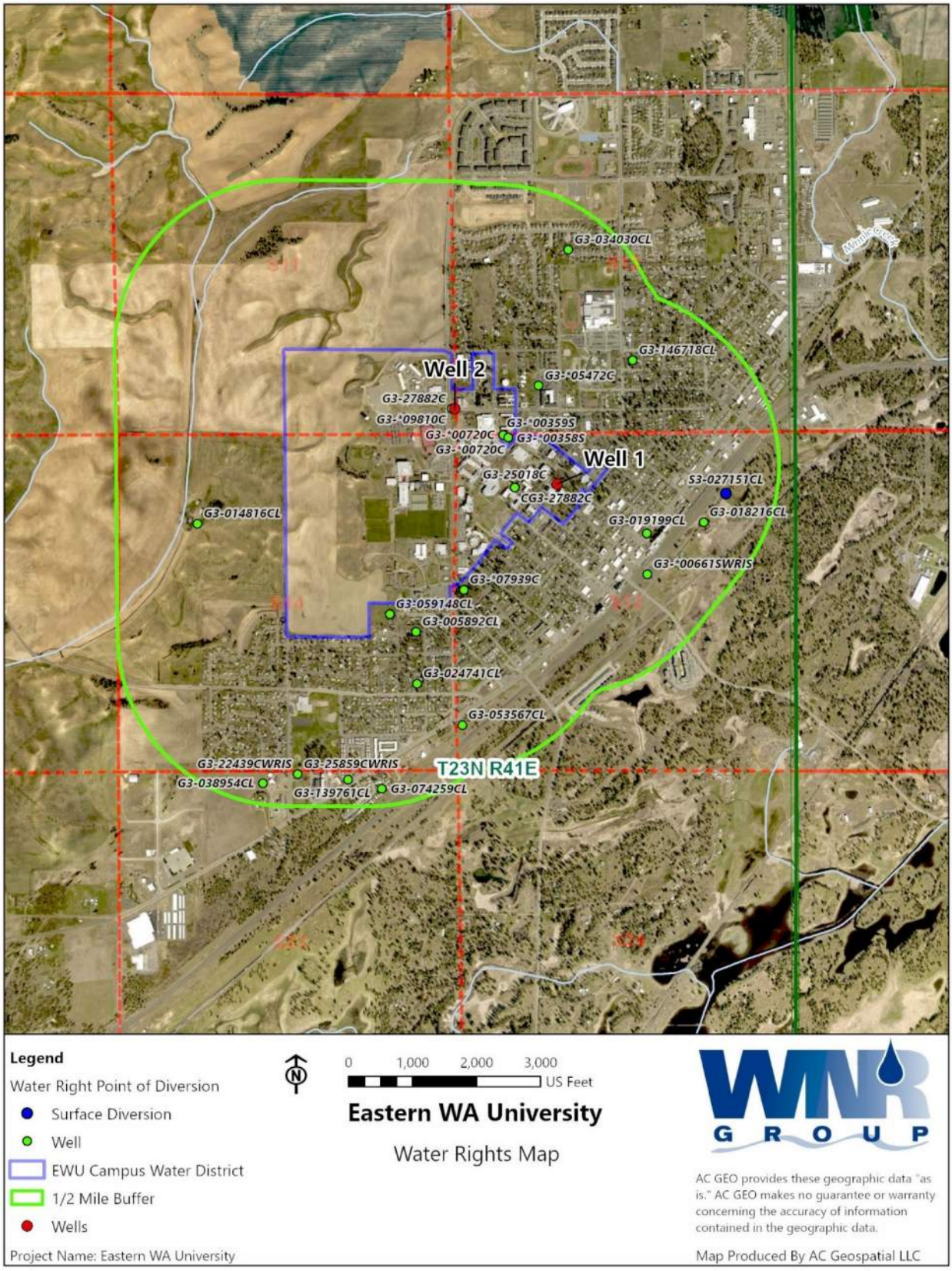


FIGURE 3: Map showing location of water rights within ½-mile of EWU Service Area boundaries.

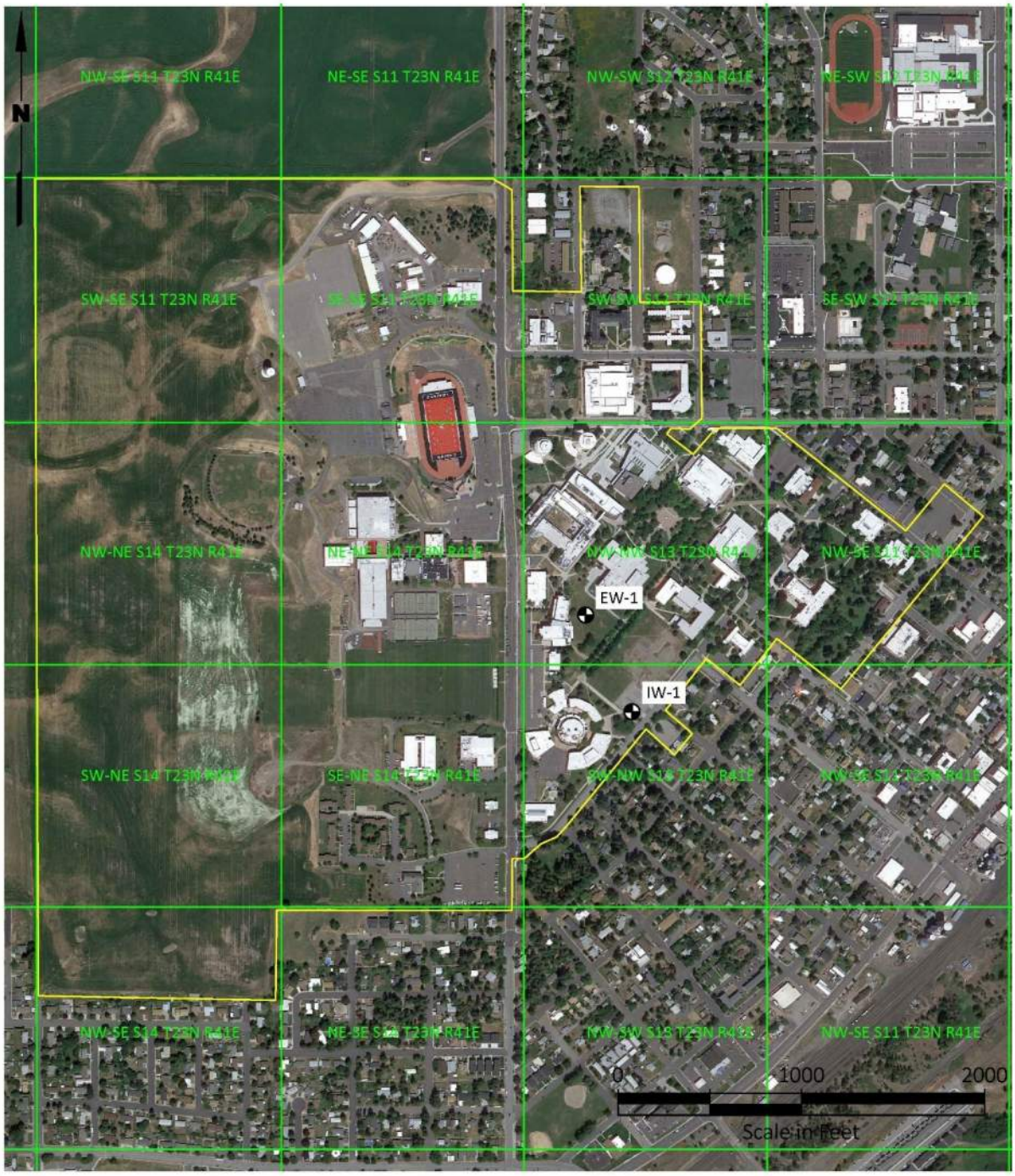
As shown on Table 2, EWU utilizes three water rights within their service area. The City of Cheney also utilizes nine water rights for their water system area. Although the water system areas do not overlap, the City does operate wells within the boundaries of EWU's service area. Outside of the two municipal water purveyors, no other certificates are located within ½-mile of the boundaries of EWU service area. Twelve groundwater and one surface water claims are within ½-mile of the EWU service area as shown in the water right summary Table 2. These claims are all for domestic water use with irrigation less than half an acre and stock watering. Review of well logs show that these small water uses are primarily using water from the shallow Wanapum formation and do not have wells completed into the deeper Grande Ronde aquifer like EWU and the City of Cheney. In addition, all but one of these Claims are located down or cross-gradient of the proposed heat exchange groundwater extraction wells.

7.2 – Water rights currently owned by EWU have been exercised to provide domestic and municipal use within the EWU water service area. Groundwater is also used for irrigation on sports fields around the campus, and for building land scaping and lawn irrigation throughout the campus. EWU is currently undergoing the CWRE evaluation for the proof of appropriation of the changes to these rights and completion of the conforming documents to change the water rights to municipal use. The water right being submitted under this request will be operated independently of the existing water rights and develop its own extraction and injection wells. No shared wells will be utilized under this request and the existing rights.

SECTION 8 System Design and Operation

The system design and operation are discussed in detail in the MSI Engineers GSHP Feasibility Report (MSI, 2023) and the Landau Groundwater Temperature Modeling Report (2023). Final design and operations will be based on any results of the feasibility phase of this project.

As discussed previously, three phases are proposed for this GSHP project. Preliminary modelling results completed by Landau (2023) have tentatively determined the proposed place of withdrawal of 10 wells and the proposed placement of ten injection wells. The following figures (4a, 4b and 4c) outline the location of the proposed extraction wells and accompanying proposed injection wells for each of the three phases discussed previously. These locations correspond to the 20 proposed wells included within this application.



Legend

- Approximate Well Location
- Place of Use
- Quarter Sections (Township & Range)

Source: Google Earth, accessed December 2015

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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LANDAU ASSOCIATES

Eastern Washington University GSHP Hydrogeological Evaluation Cheney, Washington	Case Study 1	Figure 4-A

Legend

- Proposed Well Location
- Place of Use
- Quarter-Quarter Sections (Township & Range)

Source: Google Earth, accessed December 2015

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Eastern Washington University
GSHP Hydrogeological Evaluation
Cheney, Washington

Case Study 2

Figure 4-B

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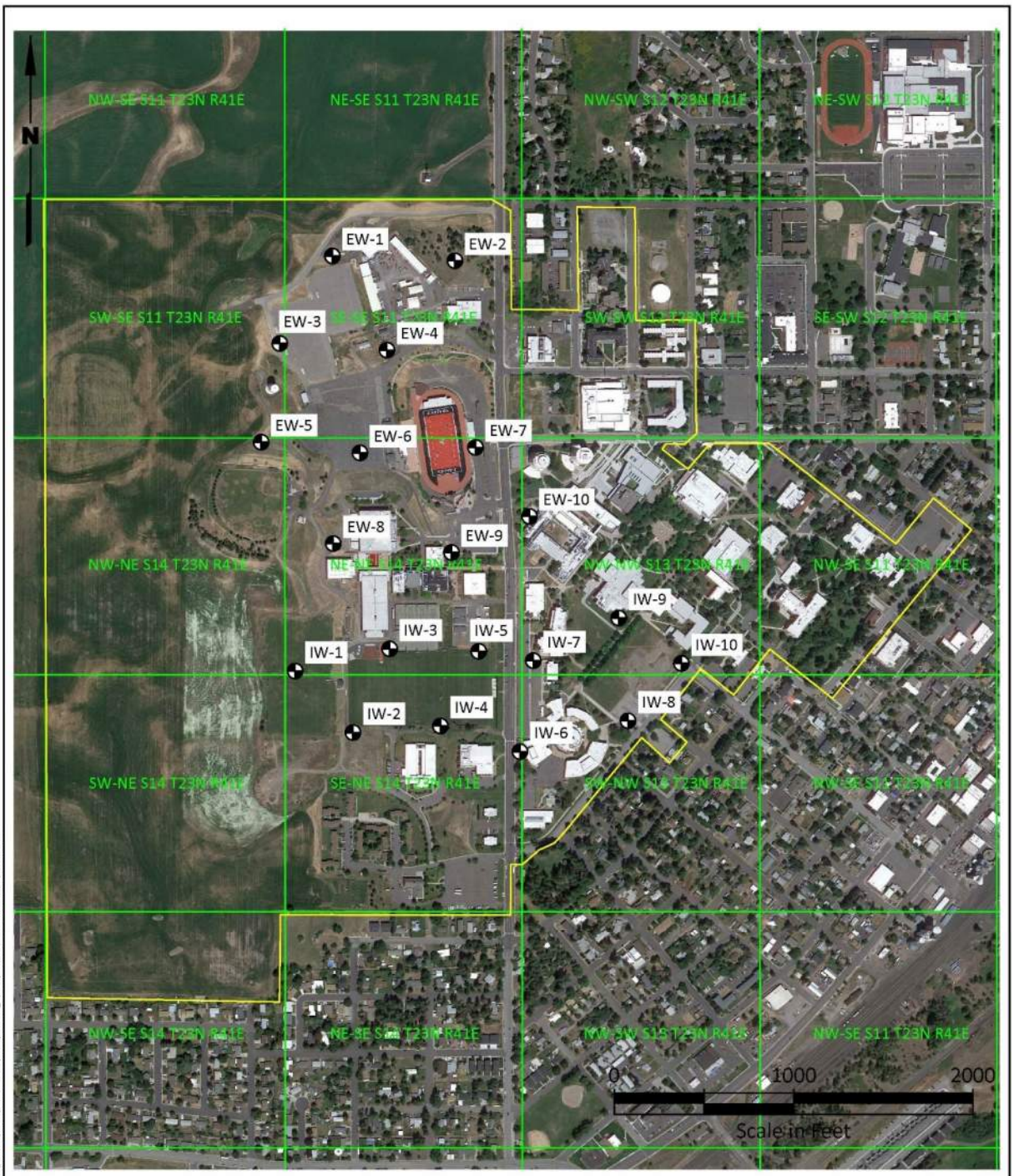

Legend

- Proposed Well Location
- Place of Use
- Quarter-Quarter Sections (Township & Range)

Source: Google Earth, accessed December 2015

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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LANDAU ASSOCIATES

Eastern Washington University GSHP Hydrogeological Evaluation Cheney, Washington	Case Study 3	Figure 4-C

8.5 Timeline

The timeline on this project will be defined by funding alternatives of the project. Initiation of the first phase of the project, to include the initial extraction and injection well is tentatively projected to be initiated by 2026. Full completion of the project through phase 3 may extend up to 10 years.

8.6 Other Permits

The project will first require a water right permit for the GSHP. Typically, new water right applications are acted upon in the order which they are received by the Department of Ecology, who assigns their priority date. Certain new water right applications are granted priority processing dependent upon certain proposed project requirements and conditions. Under WAC 173-152-050(2), an application may be priority processed if Ecology determines that: "the proposed water use is non-consumptive and if approved would substantially enhance or protect the quality of the natural environment (WAC 173-152-050(2)(b)). Ecology also has Policy 2020 – Priority Processing of Heat Pump Applications". This policy also states that a withdrawal for heat exchange purposes may be afforded priority processing if the conditions under WAC 173-152-050(2)(b) are met.

Ecology Policy 1020 governs determination of consumptive vs. non-consumptive water use. The policy defines groundwater use as non-consumptive when "there is no diminishment of the source." As proposed with this project, the groundwater withdrawn for the GSHP will immediately be injected back to the source "in the same quantity and quality (excluding temperature change) at a point in close proximity to the withdrawal wells. As shown previously in this document, this proposed project meets these standards.

The EWU GSHP proposed open-loop heat exchange system meets the criteria set forth in WAC 173-152-050(2)(b) and as such, Ecology should afford it a priority processing status.

As discussed previously, the proposed water right application exceeds the 2,250-gpm limit, and as such will require submitting the SEPA checklist. The SEPA process will be conducted upon submittal of the water right application.

The project will also be required to register in the "Underground Injection Control Registration" administered by Ecology. Owners or operators of proposed — or existing — underground injection control wells must register their wells online using the SecureAccess Washington website. All injection wells must either receive a program rule authorization or a state discharge permit in order to operate. Ecology guidance states that:

Heat pump/air conditioning (HAC) systems return water back into the subsurface groundwater after it has been used to heat or cool a structure by means of an Underground Injection Control (UIC) well — or injection well.

HAC systems heat or cool buildings by:

- *Extracting heat energy from groundwater.*
- *Using groundwater as a heat sink (heat is absorbed) when cooling.*

Ecology's Underground Injection Control rule, Chapter 173-218 WAC, authorizes open-loop HAC system wells when a well is registered and the environmental protection requirements of the rule are met.

The following conditions are required to authorize HAC systems as an injection well:

- No chemicals are added to the HAC system.
- HAC system meets water right permitting requirements.
- Discharges from wells do not affect the water quality in nearby waters on the 303(d) polluted waters list.
- Discharges from wells do not affect the water in nearby waters with a Total Maximum Daily Load (water quality cleanup) plan.
- Discharges from wells do not affect groundwater quality by concentrating or redirecting existing contaminant plumes.
- Groundwater used in the HAC system must be discharged back to the source aquifer.

EWU will coordinate with Ecology upon water right permit authorization to assure all injection well requirements are met.

SECTION 9 HYDROGEOLOGICAL ANALYSIS

9.1 THROUGH 9.4 – For detailed hydrogeologic interpretations, see the Hydrogeologic Report's cited in this application. Groundwater use for the proposed project exists in a basalt aquifer at the site. The existing EWU municipal system currently withdraws groundwater from two wells in the Grande Ronde basalt, which will also be the target aquifer for this project.

The WNR Group reviewed the Washington Division of Geology and Earth Resources geologic map for northeastern Washington (1991). The geologic map (Figure 5) revealed that the new and proposed sites are underlain by Miocene Wanapum basalts (Mvw) which overlie the deeper Grand Ronde basalt. The Columbia River Basalt Group, of which the Wanapum and Grande Ronde are members, represent a vast outpouring of basaltic lava flows from vents in eastern Oregon and southwestern Washington and Idaho from about 17 to 6 million years ago (Johnson et al, 1998). The two units exposed in Spokane County (Wanapum and Grande Ronde), were erupted from vents in Idaho and flowed to the Pacific Ocean. The Wanapum and Grande Ronde primarily consist of a black to dark gray fine-grained (Grande Ronde) to coarse-grained (Wanapum), basalt (Johnson et al, 1998). These units typically host multiple aquifers in the interflows or where they are heavily fractured.

The stratigraphic sequence beneath EWU can be generalized as follows (in feet below ground surface):

- Zero to 50 feet of unconsolidated surficial deposits; sand and gravel and wind-deposited silts.
- 50 – 1,300 feet of CRBG,
    - 50 – 300 ft, Wanapum basalt unit and sedimentary interbeds
    - 300 – 1,000 ft, Grand Ronde basalt unit and sedimentary interbeds
- 1,300 feet and below, Pre-CRBG basement rock (Kahle 2011, Buchanan 2007, and well log interpretation).

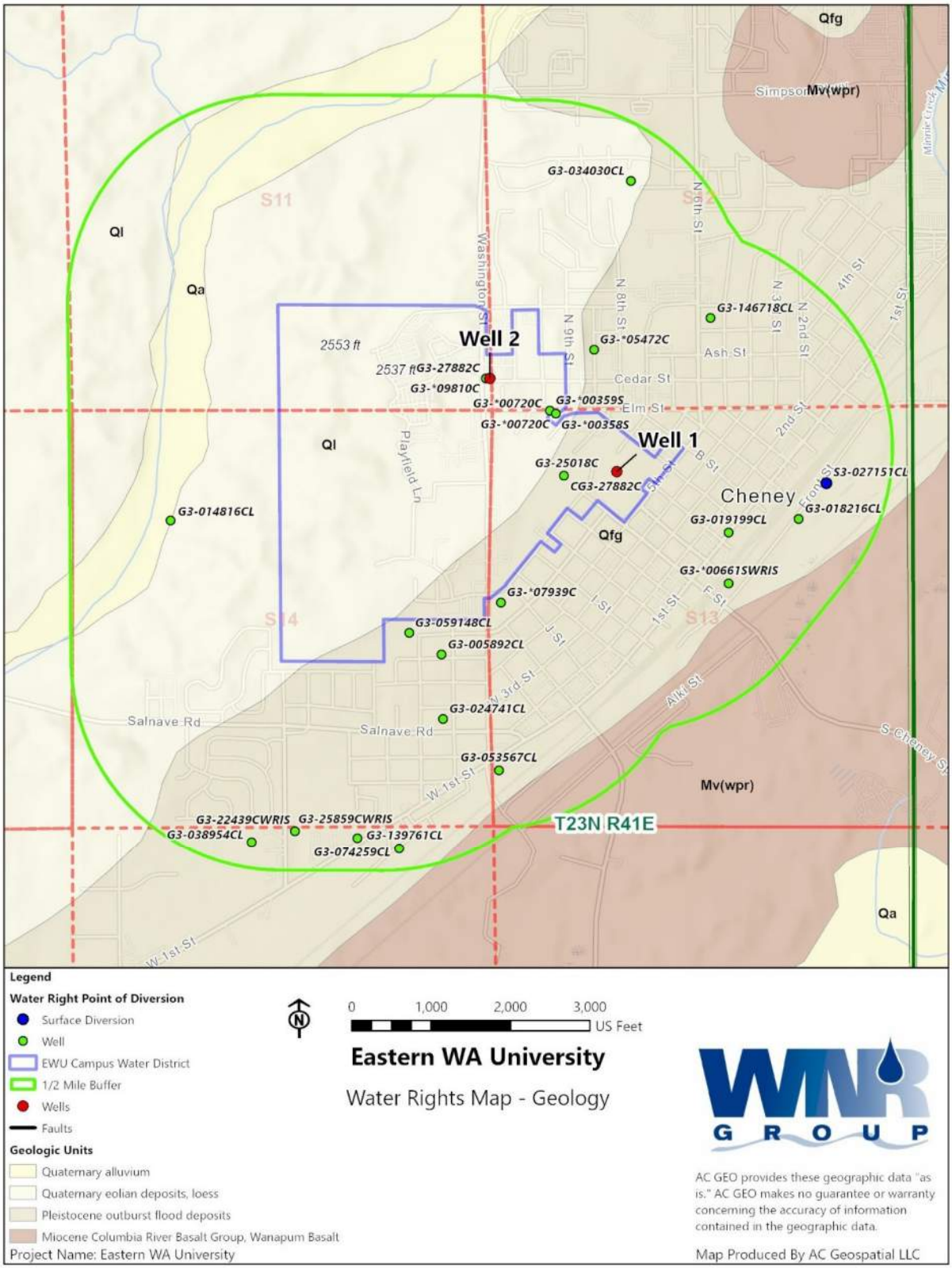

Figure 5: Geologic Map of the area around EWU

The following is presented from an Ecology Memo dated March 13, 2008 which described the hydrogeologic conditions for a proposed change to the City of Cheney water rights.

The area is underlain by the Columbia River Basalt Group, of which there are two major zones of public groundwater: the unconsolidated zone, and the basalt. The unconsolidated zone extends from the land surface down to the first solid basalt flow. It consists of unconsolidated and weakly consolidated sediments, chiefly sands, and gravels.

The basalt zone is part of a large groundwater reservoir occurring in a thick series of basalt flows. These flows primarily consist of the Saddle Mountain, Wanapum and Grand Ronde formations. Groundwater is found in a system of interconnected aquifers within the formations of the Columbia River Basalt Group.

The proposed project lies near the margin of the Columbia River Basalt Group. Steptoes consisting of pre-Cenozoic rocks lie to the north of Cheney. Miocene age Wanapum Basalt is exposed to the south and west of Cheney. The Wanapum basalt overlies the older Grand Ronde basalt, and a sedimentary interbed may be present at that contact.

Hydraulic heads indicative of the Grand Ronde aquifer do not necessarily appear at the base of that sedimentary interbed. Often, the hydraulic head does not appear until wells penetrate up to 200 feet into the Grand Ronde basalt. High hydraulic heads, typical of the overlying Wanapum basalt hosted are often closely connected to shallow groundwater.

Groundwater flow in the Cheney area is from SSW to SW with aquifers recharging along the margins of the basement outcrops which are exposed north of Cheney, or though the basin margins for the deeper basalt interflows. No evidence of significant connection to surface water is available.

Research compiled under this study and summarized in Landau (2023) temperature modeling report documents that the principal aquifer in the region is contained within the Columbia Plateau Basalt flows of the Wanapum and Grand Ronde formations. Regionally, these basalt flows erupted over a 10 million year period beginning approximately 16 million years ago. Each individual flow is typically 50 to 100 feet thick. Water migrates laterally through the high permeability interflow zones which are located at the intersection of the top of the underlying basalt flow and the bottom of the overlying basalt flow. The dense, basalt flow interiors typically display vertical hydraulic conductivity values that are orders of magnitude lower than the much higher conductivities of the interflow zones.

The CRBG aquifer system is a series of vertically stacked confined or semi-confined basalt aquifers with water concentrated interflow zones, i.e., the zone between two individual basalt flows. Interflow zones include a flow top, a flow bottom, and a sedimentary interbed if present. Interflow structures can include vesicular and/or brecciated flow tops, flow-bottom pillow complexes and/or brecciated zones, these features create permeability and storage (Kahle 2011). Water reaches the interflow zones and recharges the aquifers by downward percolation or by lateral groundwater inflow (Luzier and Burt 1974). Movement of groundwater vertically along joints in the basalt is estimated to be several orders of magnitude lower than the horizontal range of

movement. City of Cheney wells 1, 2, 3, 6 and 7 are developing in the CRBG aquifer, as are EWU wells 1 and 2R (Parametrix 2019).

The CRBG consists of the Saddle Mountain Basalt unit, Wanapum Basalt unit, and the Grande Ronde Basalt, and their sedimentary interbeds. The Wanapum and the Grande Ronde Basalts are present in the Cheney area, the Wanapum Basalt underlies the Grande Ronde Basalt. The Grande Ronde is the deepest and most-voluminous unit and the most productive basalt aquifer. The Grande Ronde Basalt aquifer is mostly confined and is recharged by lateral groundwater inflow. The Wanapum Basalt aquifer is partially recharged by precipitation and infiltration and is the source of water for many springs and lakes in the Cheney area (Buchanan 2007).
Well logs in and around the EWU campus record a substantial sedimentary interbed at depths of 500-600 feet bgs and a thickness of 75-100 feet. Previous hydrogeologic studies have interpreted this to be the Latah formation, which is broadly understood to have been deposited between the Wanapum Basalt and the Grande Ronde Basalt (Kahle 2011 and City of Cheney wellhead protection plan). However, recent geochemical analysis of samples collected from City of Cheney Well 5 identified the contact between the Wanapum and Grande Ronde Basalts at about elevation 2,200' (200-300 ft bgs) (Buchanan 2007 and GeoEngineers, 2015). This correlates to an approximate Wanapum Basalt thickness of 220 and 280 in the EWU campus area. Locally the Latah formation has been interpreted as a confining layer that restricts groundwater flow based on higher heads in the Wanapum Basalt respective to the Grande Ronde Basalt (Buchanan 2007).

A generalized geologic cross-section beneath the site is presented in Figure 6. The target aquifer for this project will be the lower Grand Ronde basalt Formation.

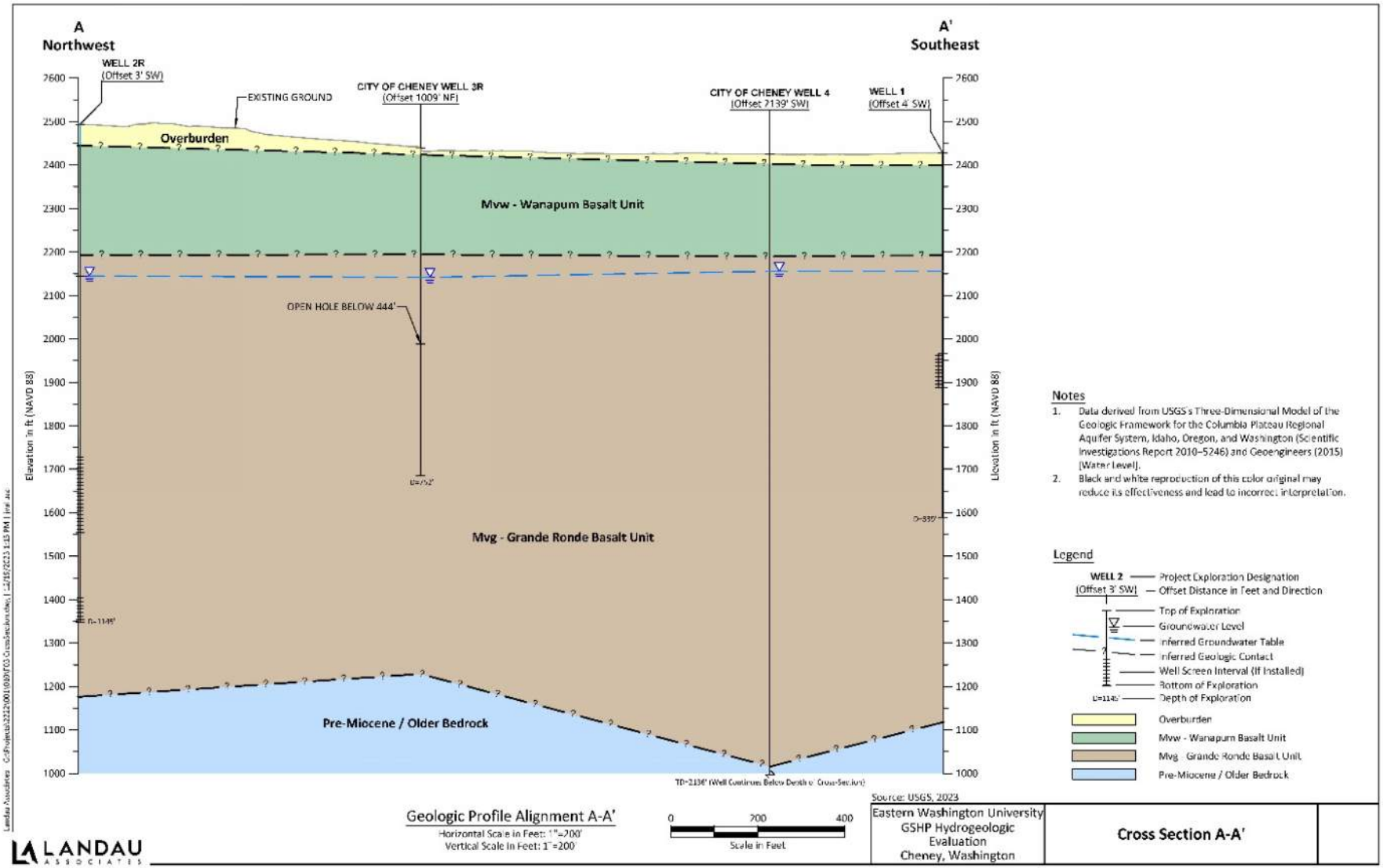

Figure 6: Generalized Geologic Cross Section in the area of EWU

Site Groundwater Conditions – A detailed review of well logs and available hydrogeologic data and reports were conducted for this study. At the Existing subject site, the groundwater within the Grand Ronde member was determined to have the following aquifer characteristics. The Columbia River Basalt Group is a regional aquifer system, and the Grand Ronde Aquifer extends across the basin. The aquifer hydraulic parameters may vary dependent upon the specific geologic conditions at a specific location within the basin. The following are the most representative parameters the project evaluation could develop.

Aquifer Hydraulic Parameters

Well testing and hydrogeologic reports were reviewed to estimate hydraulic parameters for the Grande Ronde aquifer in the vicinity of the EWU campus.

Table 3. Hydraulic Parameters

Model Parameter	**Value**
Aquifer Transmissivity (ft^2/day)	9,900
Aquifer Storativity (unitless)	0.0002
Static Water Level (ft bgs)	300 – 400
Hydraulic Gradient	0.01

Aquifer Transmissivity

Aquifer transmissivity (T) describes the ability of the aquifer to transmit groundwater throughout its entire saturated thickness. Transmissivity is the product of hydraulic conductivity (i.e., the capacity of the aquifer material to transmit water) and aquifer thickness:

$$T = Kb$$

Where K is transmissivity and b is aquifer thickness. Transmissivity can be determined via pumping tests, analysis of aquifer material, or calculations based on laboratory tests. Of these methods, transmissivity values established during pumping tests are the most accurate and should reflect the true hydraulic conditions within an aquifer. Due to the heterogeneity of hydraulic conductivity in the Grande Ronde Basalt aquifer and variability in saturated aquifer thickness, pumping test data from onsite EWU Well 2R is anticipated to be most representative of local conditions (versus pumping test data from wells at greater distances from campus).
In 2015, pumping tests were completed on a new water supply well (Well 2R) installed on EWU campus. Analysis of the constant-rate pumping test data estimated an aquifer transmissivity range of 9,900 ft^2/day to 14,000 ft^2/day, using the Cooper-Jacob graphical method and the Theis recovery method, respectively (GeoEngineers 2015). For conservatism, the lower transmissivity value was selected for modeling purposes.

The pumping well screen was open to 225-ft of the aquifer, and approximately 100-ft of that interval was water-bearing interflow zones, therefore for modeling purposes an aquifer thickness of 100-ft was used.

Aquifer Storativity

Aquifer storativity (S) is a measure of an aquifer's ability to store and release water and is defined as the volume of water that a unit will absorb or release from storage per unit surface area per unit change in head. Storativity is also known as the storage coefficient and is typically expressed in units of cubic feet per cubic feet, a dimensionless quantity. Storativity cannot be estimated from a pumping test without observation well data (testing of Well 2R did not include observation wells), therefore, a representative value was selected from available literature. The estimated median storage coefficient for the Grande Ronde unit of the CRBG is 0.0002 (Kahle, 2011).

Static Water Level and Hydraulic Gradient

Groundwater levels in the Grande Ronde basalt unit are around between 2,100 and 2,200 ft elevation in the Cheney area (Whiteman 1986), i.e., between 300 and 400 ft bgs in the EWU campus area. The groundwater flow direction is interpreted to be to the south-southeast with a gradient of 0.01.

During the production well evaluation at Well 2R, completed in 2015, the static groundwater level in the Grande Ronde Basalt aquifer unit was approximately 350 feet bgs (GeoEngineers 2015). The groundwater level was monitored for a 7-day period under non-pumping conditions. A cyclic fluctuation of 1½ feet was recorded and interpreted to be interference associated with the pumping cycle at Well 1. On a larger timescale, existing historical data indicate that groundwater mining is occurring in the aquifer system beneath the City of Cheney and modeling efforts predict that the rate of water level decline will increase as pumping demands grow with anticipated increases in City population (Buchanan, 2007).

Groundwater levels in the basalt units generally mimic the dip of the basalt, because most groundwater occurs and moves in the interflow zones (Kahle 2011). Groundwater flow in the CRBG near the Cheney area is generally to the south and southwest, towards the center of the Columbia Basin. However, flow in the Grande Ronde Basalt aquifer in the area of the EWU campus appears to be to the south-southeast due to the presence of a groundwater trough to the southeast of Cheney. Grande Ronde groundwater elevation contours are presented in Figure 4 (Whiteman 1986). Groundwater flow direction should be confirmed in the next phase of project design; it is an important design variable for sustaining groundwater temperature targets at the source well.

The altitude of the Grande Ronde Basalt Member (from the USGS WRI Report 87-4238, Sheet Three) for a well in the SE¼ Sec. 11, SW¼ Sec. 12, NW¼ Section 13, or NE¼ of Sec. 14, T. 23 N. R. 41 E.W.M. is approximately 2175'. With a land surface of ~2450', this puts the top of the Grande Ronde at approximately 275' below land surface. The casing call for a well at this site would be estimated at 475' below land surface for a Grande Ronde wells at this location.

To properly construct a well in the Grande Ronde Aquifer, the driller will need to case and seal the well as mentioned above to allow for production from only the Grande Ronde Aquifer. The annular space would need to be a minimum of 4-inches greater than the permanent casing. After the casing is sealed in place, the well may be completed by drilling out of the casing until sufficient

water is obtained. Sealing shall be placed from the bottom of the well to the top until undiluted sealing material returns to the surface.

Impairment Considerations

Impairment is an adverse impact on the physical availability of water for a beneficial use that is entitled to protection. In order to determine potential impairment, the following Theis non-equilibrium well equation analysis was completed.

In order to determine theoretical drawdown in wells at a given distance from the proposed wells, the Theis non-equilibrium equation (1935), modified by Cooper and Jacob (1946) was used as outlined in Driscoll (1986). The equation allows for the calculation of drawdown at any point away from a well pumping at a constant rate. The equation is presented as:

$$\mathbf{s = [264Q/T] * [\log(0.3Tt/r^2 S)]}$$

Where:

s = drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate;

Q = pumping rate in gpm;

T = coefficient of transmissivity of aquifer, in gpd/ft

t = time since pumping started, in days;

r = distance, in feet, from the center of a pumped well to a point where the drawdown is measured;

S = coefficient of storage (dimensionless)

A spreadsheet was developed for the equation and is attached to this memo. The equation was run for a pumping rate for each of the proposed phases (600, 3,600 and 12,000 gpm), with time of pumping at 1, 7, 30, 180, and 365 days, at a distance to observation well of ¼, ½, and 1 mile from a proposed theoretical well. The Thesis non-equilibrium equation generally revealed that a pumping rate of 600 gpm (the maximum amount proposed for each individual extraction well in the system) for 365 days drawdown (decline in hydraulic head) in an observation would be 9.34 feet (1/4-mile), 8.05 feet (1/2-mile), and 6.76 feet (1-mile). At a pumping rate of 3,600 gpm for 365 days, drawdown in an observation would be 56.04 feet (1/4-mile), 48.31 feet (1/2-mile), and 40.59 feet (1-mile).

As the proposed project is non-consumptive, the extracted groundwater will be immediately returned to the aquifer through an injection well within 600 feet of its extraction well. This theoretically creates the same mounding values as that calculated in the drawdown analysis, thus offsetting any drawdown or decline of the hydrostatic head. Figure 7 presents a schematic showing the theoretical effects on the potentiometric head gradient created during an open loop heat exchange system.

Therefore, it is assumed that no impairment to wells in the area may occur. Only the City of Cheney wells located within the EWU service area would be within the radius of influence.

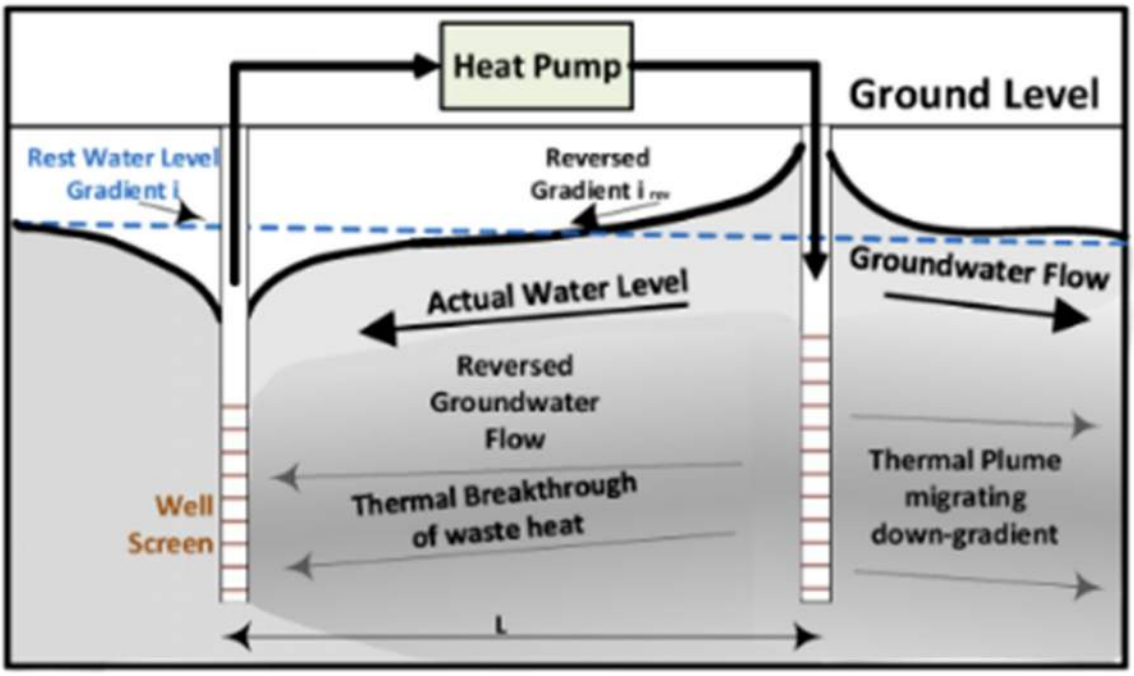

Figure 7: Schematic showing the theoretical drawdown and mounding of an open loop heat exchange project.

SECTION 10: Environmental Assessment

10.1 – Nearest surface water body: An unnamed intermittent creek which is tributary to Browns Lake is located approximately ½-mile north of the facility. The nearest surface water feature is Ames Lake and is located approximately ¾-mile southwest from the facility. There is no evidence of any significant connection to surface water to the basalt aquifers in the area of the site (Ecology, 2008).

10.2 – The project site is located on the Columbia Basalt Plateau and contains some intermittent water bodies perched on top of the basalts. No known salmonids are located in the immediate area of the facility.

SECTION 11: Driving Directions

11.1 The site is located at: Eastern Washington University campus in Cheney, WA 99004
The site is located approximately 17-miles southwest of Spokane Washington in Cheney, WA in Spokane County. To get to the site, drive east on I-90 from Spokane approximately 10 miles to Exit 270-Highway 904, Cheney. Continue approximately 4 miles south on Highway 904 until entering the City of Cheney. Upon entering Cheney, turn right (west) on Betz Road, and after a mile it will bend to the left (heading south) and becomes Washington Street. Drive approximately one mile to the site location.

Section 12: Maps and Other Documentation

12.1 – Various Maps are included in this document

Citations:

Buchanan, J.P., 2007, Modeling future groundwater withdrawals with an emphasis on potential well interference and groundwater mining for the area surrounding the City of Cheney, Spokane County, Washington, prepared for Department of Public Works, City of Cheney, Washington and Esvelt Environmental Engineering, June.

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GeoEngineers, July 16, 2015, Production Well Evaluation, Eastern Washington University Water System Improvements, Cheney, WA. Report prepared for TD&H Engineering, 117 pp.

Kahle, S.C., Morgan, D.S., Welch, W.B., Ely, D.M., Hinkle, S.R., Vaccaro, J.J., and Orzol, L.L., 2011, Hydrogeologic framework and hydrogeologic budget components of the Columbia Plateau Regional Aquifer System, Washington, Oregon, and Idaho: U.S. Geological Survey Scientific Investigations Report 2011-5124, 66 p.

Landau, 2023. Draft Eastern Washington University Ground Source Heat Pump Hydrogeologic and Thermal Modeling Assessment. December. With WNR.

Luzier, J.E., and Burt, R.J., 1974, Hydrology of basalt aquifers and depletion of ground water in east-central Washington: Washington State Department of Ecology, Water-Supply Bulletin 33, 53 p.

MSI, 2023. Draft Report: EWU Campus Hydro-Geological Assessment Open-Loop Ground-Source Heat Pump Feasibility Study. Eastern Washington University. Cheney, WA. December 22. With Landau Associates, Inc. and WNR.

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Tanaka, H.H., 1975, Seismic profile lines in the Spokane are [abs.]: U.S. Geological Survey Professional Paper 975, 115 p.

Washington State Department of Natural Resources-Stoffel and others, 1991: Geologic Map of Washington – Northeast Quadrant scale 1:250,000, Washington Division of Geology and Earth Resources, Geologic Map GM-39, 3 sheets.

Washington State Department of Ecology, March 13, 2008, Memorandum prepared by Guy Gregory for Hydrogeologic Analysis, Applications for Change to Groundwater Certificates Nos. 341-D, 342-D, 1418-A, 3969-A, 5967-A, G3-22439C and G3-25859C, 4 pp.

Washington State Department of Ecology, November 2023: Internet search of groundwater well log database, http://www.ecy.wa.gov.

Washington State Department of Ecology, November 2023: Internet search of water rights database (WRTS), http://www.ecy.wa.gov.

Whiteman, K.J., 1986, Ground-water levels in three basalt hydrologic units underlying the Columbia Plateau, Washington and Oregon, spring 1984: U.S. Geological Survey Water-Resources Investigations Report 86-4046, 4 sheets.

Theoritical Drawdown of A Well at a Given Distance and a Constant Pumping Rate Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where: s = drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q = pumping rate in gpm

b=100 ft — T = coefficient of transmissivity of aquifer, in gpd/ft

K=99 ft/day — t = time since pumping started, in days

T=9900 ft^2/day — r = distance, in feet, from the center of a pumped well to a point where the drawdown is measured

T=74056.95 gpd/ft — S = coefficient of storage (dimensionless)

K and T data derived from GeoEngineers 2015 Report — T= 74056.95

Drawdown of Well at a given distance (ft)	Constant	Discharge (gpm)	Transmissivity (gpd/ft)	Time since pumping started (days)	Distance to Well (feet)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
s	264	Q	T	t	r	S			
3.86	264	600	74057	1	1320	0.0002	2.138893	63.75430441	1.804509512
5.67	264	600	74057	7	1320	0.0002	2.138893	446.2801309	2.649607552
7.02	264	600	74057	30	1320	0.0002	2.138893	1912.629132	3.281630766
8.68	264	600	74057	180	1320	0.0002	2.138893	11475.77479	4.059782017
9.34	264	600	74057	365	1320	0.0002	2.138893	23270.32111	4.366802376
2.57	264	600	74057	1	2640	0.0002	2.138893	15.9385761	1.20244952
4.38	264	600	74057	7	2640	0.0002	2.138893	111.5700327	2.04754756
5.73	264	600	74057	30	2640	0.0002	2.138893	478.1572831	2.679570775
7.40	264	600	74057	180	2640	0.0002	2.138893	2868.943698	3.457722026
8.05	264	600	74057	365	2640	0.0002	2.138893	5817.580277	3.764742385
1.28	264	600	74057	1	5280	0.0002	2.138893	3.984644025	0.600389529
3.09	264	600	74057	7	5280	0.0002	2.138893	27.89250818	1.445487569
4.44	264	600	74057	30	5280	0.0002	2.138893	119.5393208	2.077510784
6.11	264	600	74057	180	5280	0.0002	2.138893	717.2359246	2.855662034
6.76	264	600	74057	365	5280	0.0002	2.138893	1454.395069	3.162682394
23.16	264	3600	74057	1	1320	0.0002	12.83336	63.75430441	1.804509512
34.00	264	3600	74057	7	1320	0.0002	12.83336	446.2801309	2.649607552
42.11	264	3600	74057	30	1320	0.0002	12.83336	1912.629132	3.281630766
52.10	264	3600	74057	180	1320	0.0002	12.83336	11475.77479	4.059782017
56.04	264	3600	74057	365	1320	0.0002	12.83336	23270.32111	4.366802376
15.43	264	3600	74057	1	2640	0.0002	12.83336	15.9385761	1.20244952
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34.39	264	3600	74057	30	2640	0.0002	12.83336	478.1572831	2.679570775
44.37	264	3600	74057	180	2640	0.0002	12.83336	2868.943698	3.457722026
48.31	264	3600	74057	365	2640	0.0002	12.83336	5817.580277	3.764742385
7.71	264	3600	74057	1	5280	0.0002	12.83336	3.984644025	0.600389529
18.55	264	3600	74057	7	5280	0.0002	12.83336	27.89250818	1.445487569
26.66	264	3600	74057	30	5280	0.0002	12.83336	119.5393208	2.077510784
36.65	264	3600	74057	180	5280	0.0002	12.83336	717.2359246	2.855662034
40.59	264	3600	74057	365	5280	0.0002	12.83336	1454.395069	3.162682394
77.19	264	12000	74057	1	1320	0.0002	42.77786	63.75430441	1.804509512
113.34	264	12000	74057	7	1320	0.0002	42.77786	446.2801309	2.649607552
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173.67	264	12000	74057	180	1320	0.0002	42.77786	11475.77479	4.059782017
186.80	264	12000	74057	365	1320	0.0002	42.77786	23270.32111	4.366802376
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87.59	264	12000	74057	7	2640	0.0002	42.77786	111.5700327	2.04754756
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147.91	264	12000	74057	180	2640	0.0002	42.77786	2868.943698	3.457722026
161.05	264	12000	74057	365	2640	0.0002	42.77786	5817.580277	3.764742385
25.68	264	12000	74057	1	5280	0.0002	42.77786	3.984644025	0.600389529
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88.87	264	12000	74057	30	5280	0.0002	42.77786	119.5393208	2.077510784
122.16	264	12000	74057	180	5280	0.0002	42.77786	717.2359246	2.855662034
135.29	264	12000	74057	365	5280	0.0002	42.77786	1454.395069	3.162682394

Eastern Washington University

Decarbonization Plan: Capital Request Report

Version 2

August 30, 2024

CONTENTS

Section 1

Executive Summary

Key Takeaways

- The decarbonization plan will identify a path to meet EWU's goal of carbon neutrality, and to comply with Washington State HB1390 legislation.
- This is an intermediate deliverable, providing supporting info for the 2025-2027 capital request.
- The preferred decarbonized system is a nodal open-loop geothermal system – the cost of that system is part of a separate request (the Geothermal Node Plant request).
- The budgetary cost of ~$20,000,000 noted in this report is to connect the first nine buildings to the geothermal system and implement energy efficiency measures. This does not include the cost of the geothermal plant itself.

Executive Summary

Introduction and Report Purpose

Eastern Washington University is developing a decarbonization plan with the long-term goal of eliminating fossil fuels at its central heating plant. This plan will not only help EWU achieve its goal of becoming a carbon neutral institution but will also align with the requirements of Washington State's House Bill 1390. This report outlines EWU's preferred decarbonized system vision and provides rough order of magnitude (ROM) costs for connecting the first group of existing buildings to that system and implementing energy efficiency measures. **The preferred decarbonized system is a nodal open-loop geothermal system. The cost of the geothermal plant itself and the associated distribution piping is being developed via the Geothermal Node Plant request. The ROM cost to convert the nine buildings in Figure 1 to the new plant is roughly $19,800,000.** These are "all in" costs, reflective of the total cost EWU can expect when implementing these projects. Costs at this stage are for budgetary purposes, and will need to be refined during the next stage of development/implementation.

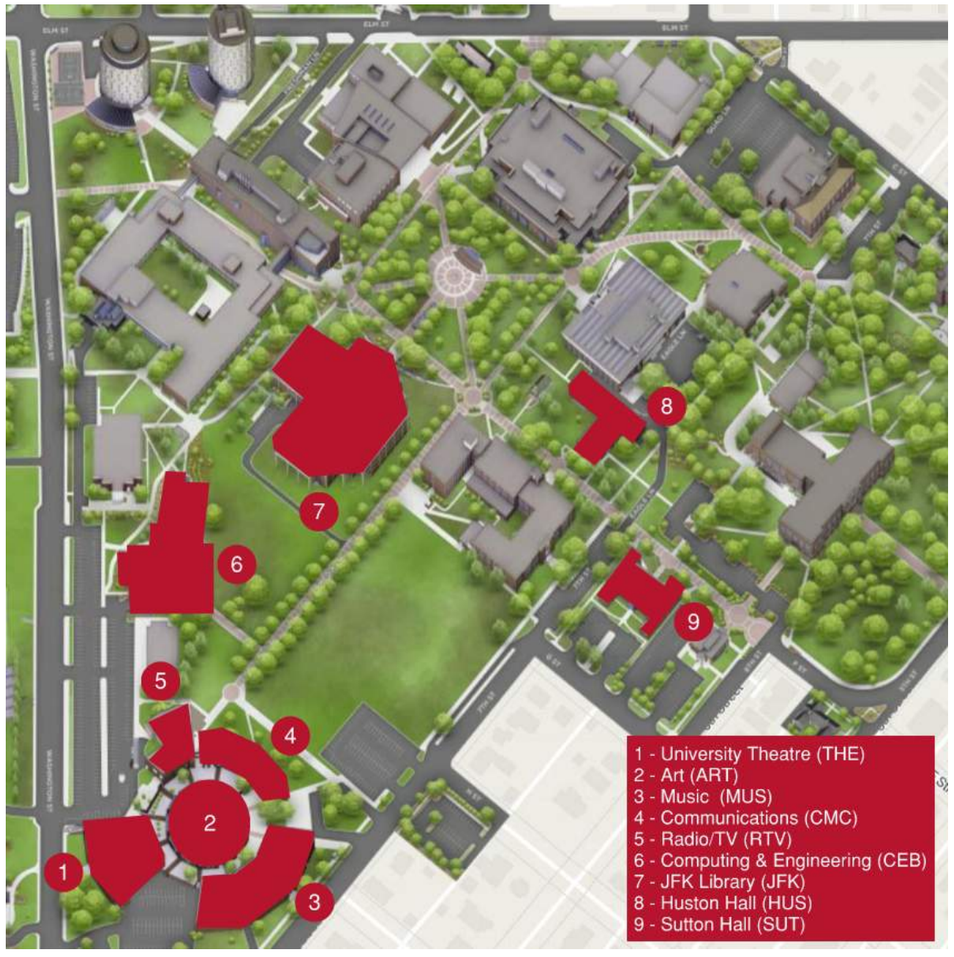


Figure 1: Buildings Connecting to First Geothermal Node

Key Considerations

- **Capital Request:** This report provides the ROM costs for converting nine existing buildings (see Figure 1) for connection to the first nodal geothermal plant. It also includes the cost of implementing specific energy efficiency measures, which should be implemented simultaneously with the building conversions for optimal value. The cost of the plant and other projects are budgeted through separate efforts as follows:
    - The cost of the first geothermal nodal plant and the associated distribution piping is being provided via the Geothermal Node Plant request.
    - The cost for converting the Martin/Williamson building and connecting it to the first plant is included in a separate Predesign Estimate (not included here).
- **House Bill 1390 Compliance:** This report forms the basis for the Decarbonization Plan (required for HB 1390 compliance) that will be submitted to the Department of Commerce in 2025. In addition to the long-term goal of removing natural gas, the campus will also need to meet an **EUI target of 112 kBtu/sf/yr (to be confirmed with Commerce) and to establish Energy Management and Operations & Maintenance Plans (EMPOM).** ***Converting these buildings and implementing the recommended nodal geothermal system will meet the EUI target required for HB 1390 compliance.*** Key dates for 1390 compliance include:
    - 6/1/25: EMPOM period for buildings over 220,000 sf starts (outside the scope of this project)
    - 6/30/25: Decarb plan due to Commerce **(in progress)**
    - 2026 and 2027: EMPOM periods start for buildings 90,000 sf - 220,000 sf and 50,000 sf - 90,000 sf (outside the scope of this project)
    - 2030 and 2035: Decarb Plan update due to Commerce
    - 2040: Decarbonized campus, EUI target met
- **Funding:** Design and construction of the preferred decarbonized system depends on the State of Washington's continued support of decarbonization efforts (including geothermal technology). Geothermal projects are eligible for federal funding via the Inflation Reduction Act. A tax consultant can quantify the exact funding amount, depending on project phasing and construction. This report does not quantify those benefits.
- **Phasing:** The preferred geothermal nodal system is ideal for long-term phasing. This allows for the cost to be spread out over multiple biennium and provides flexibility in project implementation and sequencing.
- **Capital planning:** The decarbonization plan and capital planning will be strategically aligned. For instance, the demolition of older, less efficient, underutilized buildings not only supports the decarbonization objectives by reducing campus energy consumption but also offsets the costs associated with upgrading these less efficient structures to the new decarbonized system.

Preferred System

Based on the work done to date, a **nodal open-loop geothermal mechanical system** is the preferred system for reducing reliance on fossil fuels at a campus scale. The key components of this system include:

- **Open-Loop Geothermal:** The system will extract and reject heat to and from the aquifer beneath the campus. Electrically-powered water-to-water heat pumps will create heating hot water that will be distributed to individual buildings. This is opposed to the current heating system, which creates heat by burning fossil fuels. **This recommendation is based on the analysis performed in the previous geothermal study, which will need to be validated eventually by a geothermal test well.**

- **Nodal Plants:** The mechanical equipment needed to transfer the heating/cooling to the buildings will be in several smaller plants distributed across campus. This is opposed to the current plant configuration, which houses all heating/cooling equipment in a single central plant building. This approach allows for construction phasing, flexibility, and increased campus resilience.

- **Transitioning from Steam to Hot Water:** The current central system provides building heating primarily via steam. The proposed system will provide heating to buildings via hot water, removing steam as the primary source of heating. This will require new hot water distribution piping across campus. This will most likely employ a mix of low temperature hot water (i.e. 120-130°F) and high temperature hot water (i.e. 160-180°F), depending on the existing mechanical systems in the buildings.

- **Resiliency:** The existing central steam plant will remain in-place to provide backup to the decarbonized system. EWU recently received grant funding to install a carbon capture system on the existing fossil fuel-fired steam plant. In addition, if economics and supply become viable, the steam plant could be fired by renewable natural gas.

- **Cost, Incentives, Construction:** The proposed strategy's modular nature enables a gradual rollout that can be synchronized with the capital budget cycle, extensive renovations, and new construction, allowing for less impact to campus. The system is well-positioned for funding from the Inflation Reduction Act, ensuring the most cost-effective use of resources.

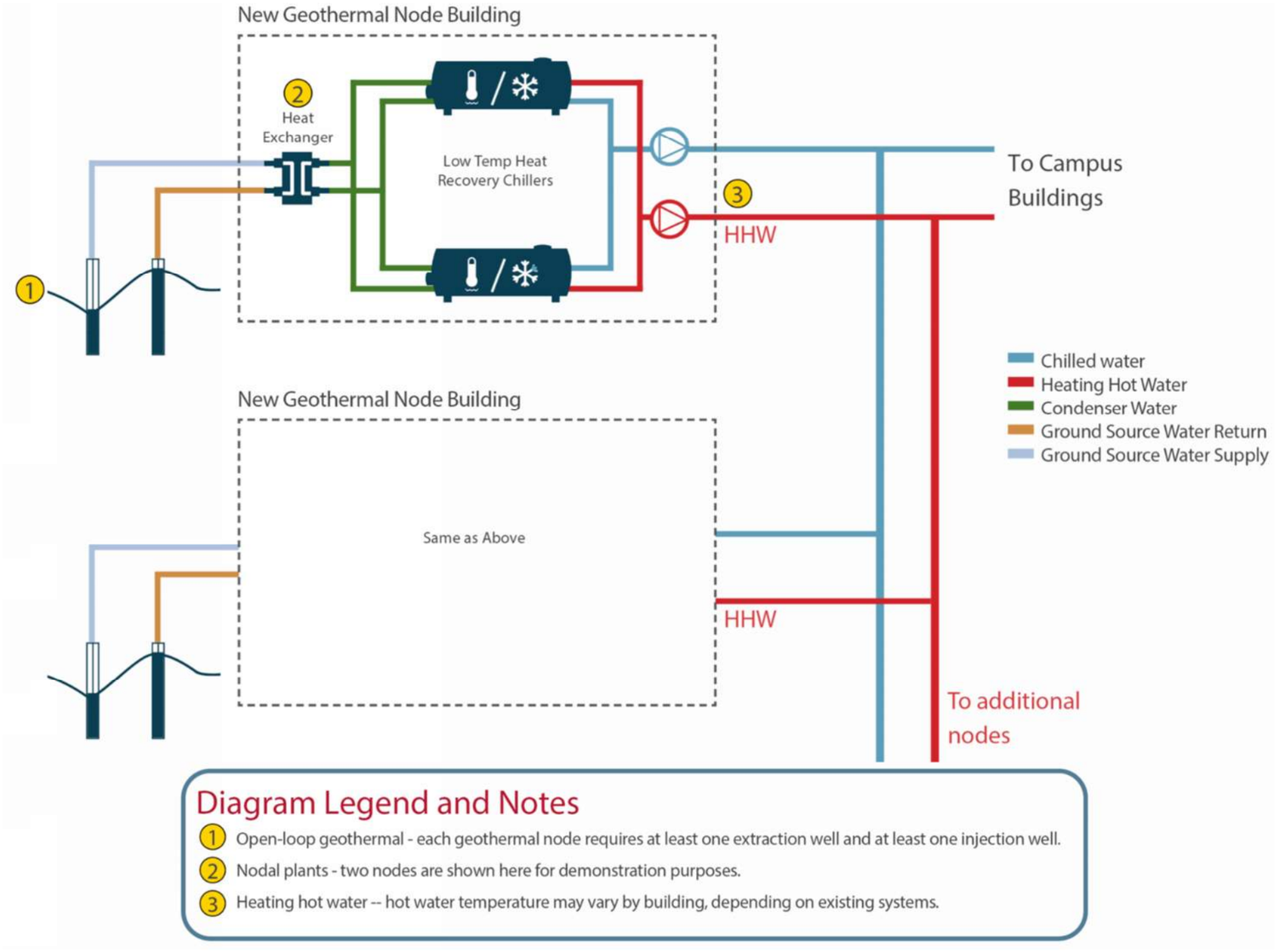


Figure 2: Proposed Nodal Plant Configuration

In-Building ROM Costs

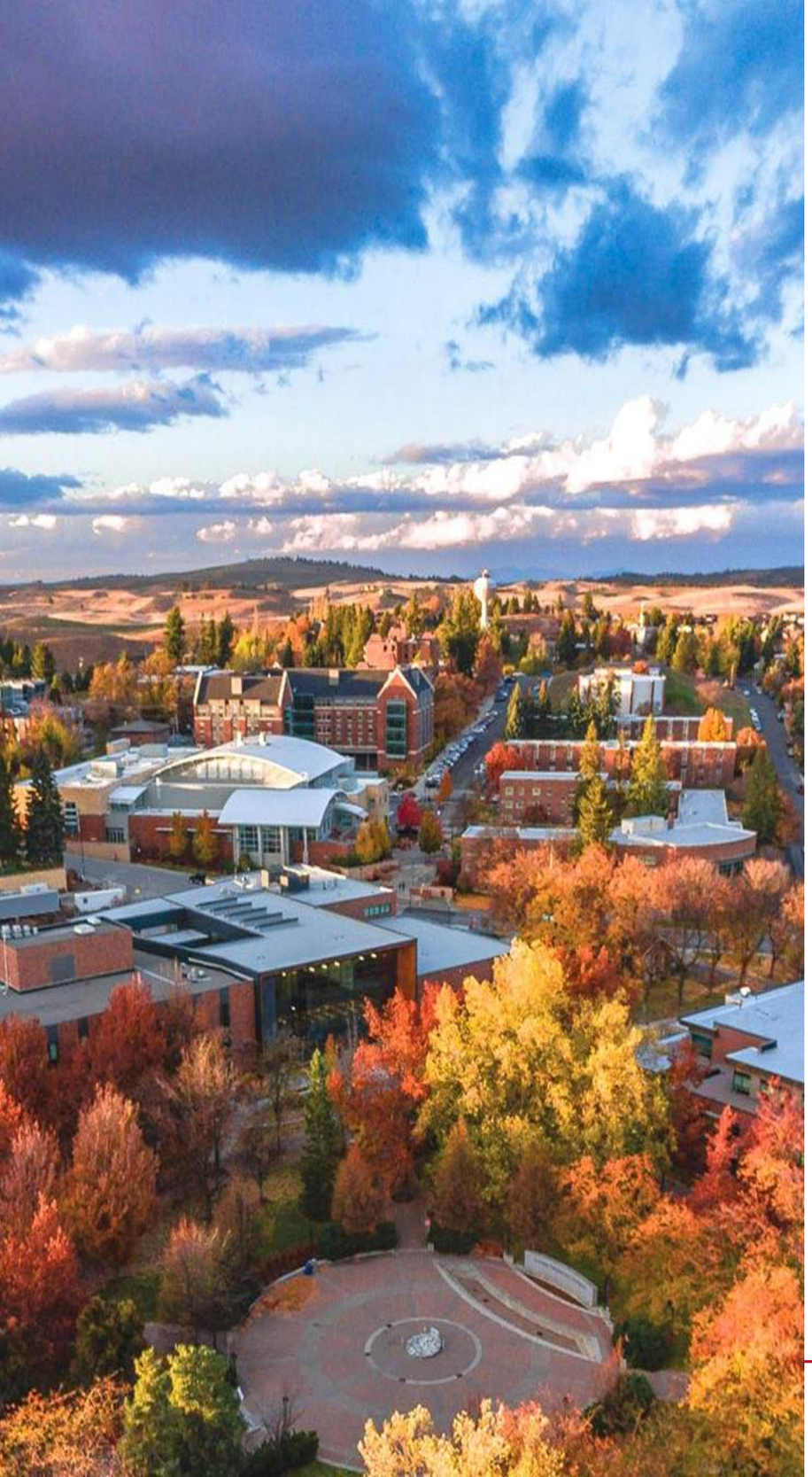
Table 1 presents the turnkey renovation ROM costs to convert the existing buildings to the preferred decarbonized system and implement recommended energy efficiency measures. The extent of these retrofits, the decision-making process behind them, and the recommended measures are described in Section 4 of this report. **These are "all in" costs, reflective of the total cost EWU can expect when implementing these projects. They are ROM costs for budgetary purposes, which will need to be refined during the next stage of development/implementation**. Additional cost estimating info is provided in Section 4 and the Appendices.

Project Next Steps

- Further define preferred decarbonized system and coordinate with utility.
- Further develop decarbonization plan for submittal to Commerce in May 2025.
- Construct test well to validate recommended system approach.

Table 1. In-Building Retrofit ROM Costs.

Building		Building Area [s.f.]	Renovation Cost [$]
JFK	JFK Library	124,496	$ 2,900,000
CEB	Computing & Engineering	98,476	$ 4,500,000
MUS	Music Building	47,618	$ 2,400,000
THE	University Theater	41,164	$ 1,900,000
ART	Art Building	34,469	$ 3,100,000
SUT	Sutton Hall	31,927	$ 900,000
HUS	Huston Hall	27,424	$ 1,700,000
CMC	Communications Building	19,289	$ 1,100,000
RTV	Radio/TV Building	16,980	$ 1,100,000
Total			**$ 19,600,000**



Section 2

Campus Existing Conditions

Key Takeaways

- The existing steam heating system accounts for 95% of Scope 1 campus carbon emissions and ~70% of Scope 1 and 2 carbon emissions.
- The campus is heating-dominated with spare steam capacity.
- The campus electrical system has significant capacity available to accommodate added loads.

Campus Energy Use

The EWU campus is served by electricity from the City of Cheney and natural gas from Avista. The central plant provides most of the heating and cooling on campus. Natural gas is consumed at the central utility plant to produce campus steam. Natural gas is also used in a smaller magnitude throughout campus at individual buildings for domestic hot water heating systems, process loads, and for cooking. Campus data below is based on utility bill data and Department of Ecology reporting.

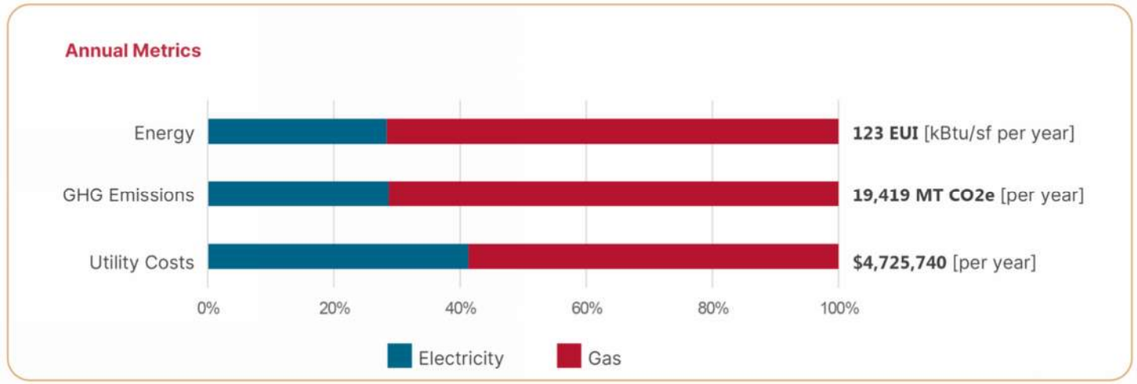


Figure 3: Annual Primary Energy Use

Campus Energy - Enduse Breakdown

The sankey diagram to the right shows how energy is used across the EWU campus. While there are some disparate fossil fuel (natural gas) uses across campus, the majority of fossil fuel use is attributed to the central steam plant loop. Note this diagram does not include campus vehicles using fossil fuels, as that usage is outside the scope of this project. For the electricity and gas breakouts in this chart, data is based on:

- Natural gas: the breakout between district heat and remaining gas is based on utility data.
- Electricity: the breakout between electricity and district cooling is based on similar campuses. It has been adjusted to account for Cheney's cooling degree days.

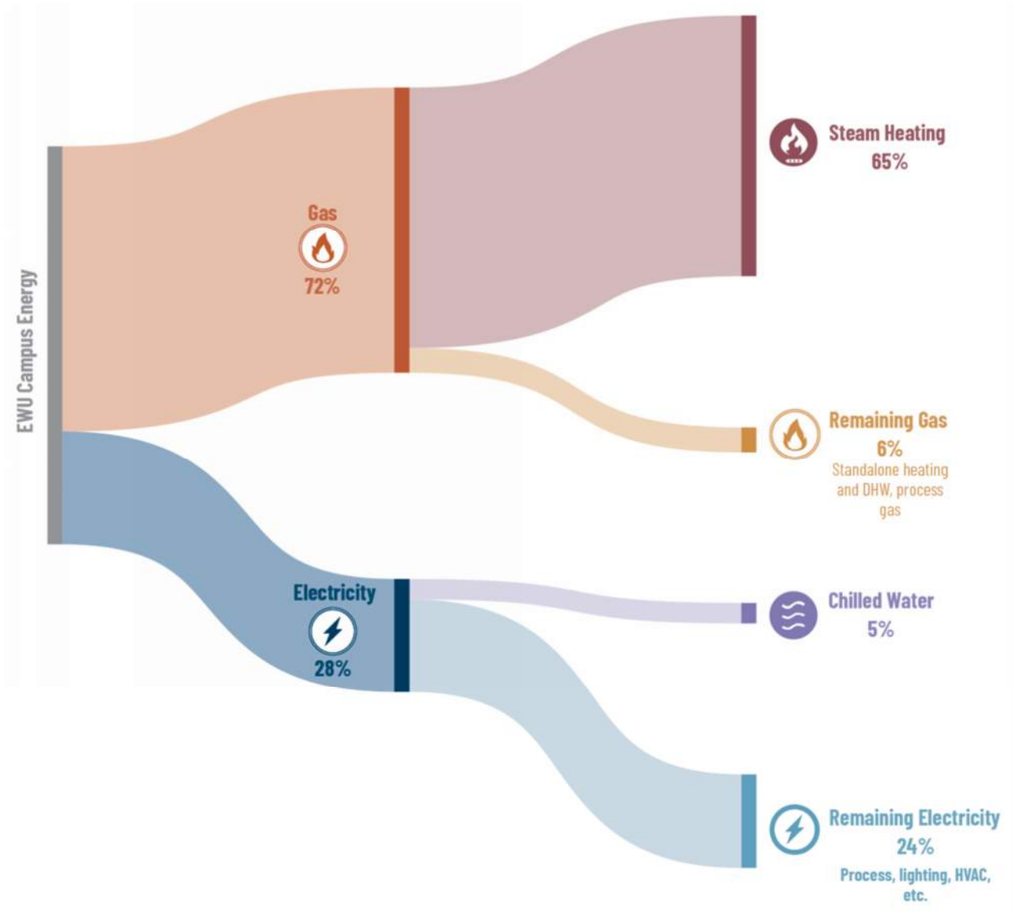


Figure 4: EWU Sankey Diagram of Campus Primary Energy Use

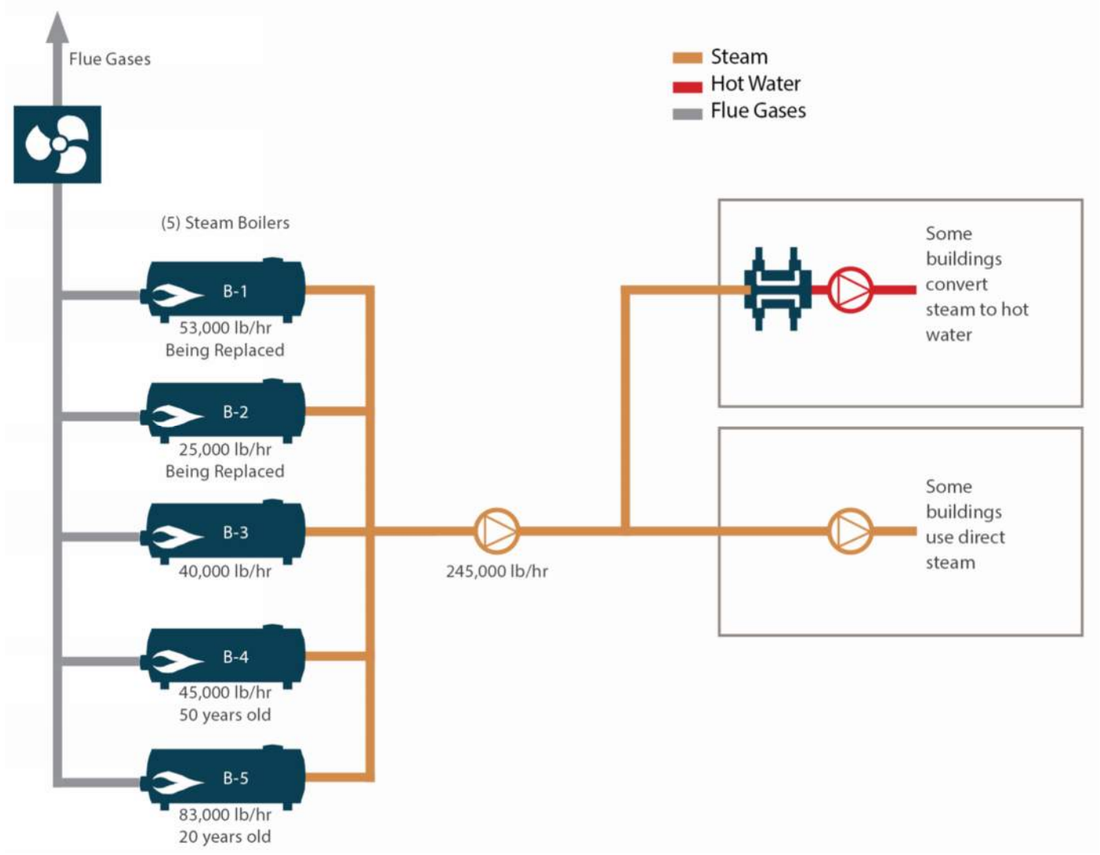


Figure 5: Diagram of Existing Campus Heating System

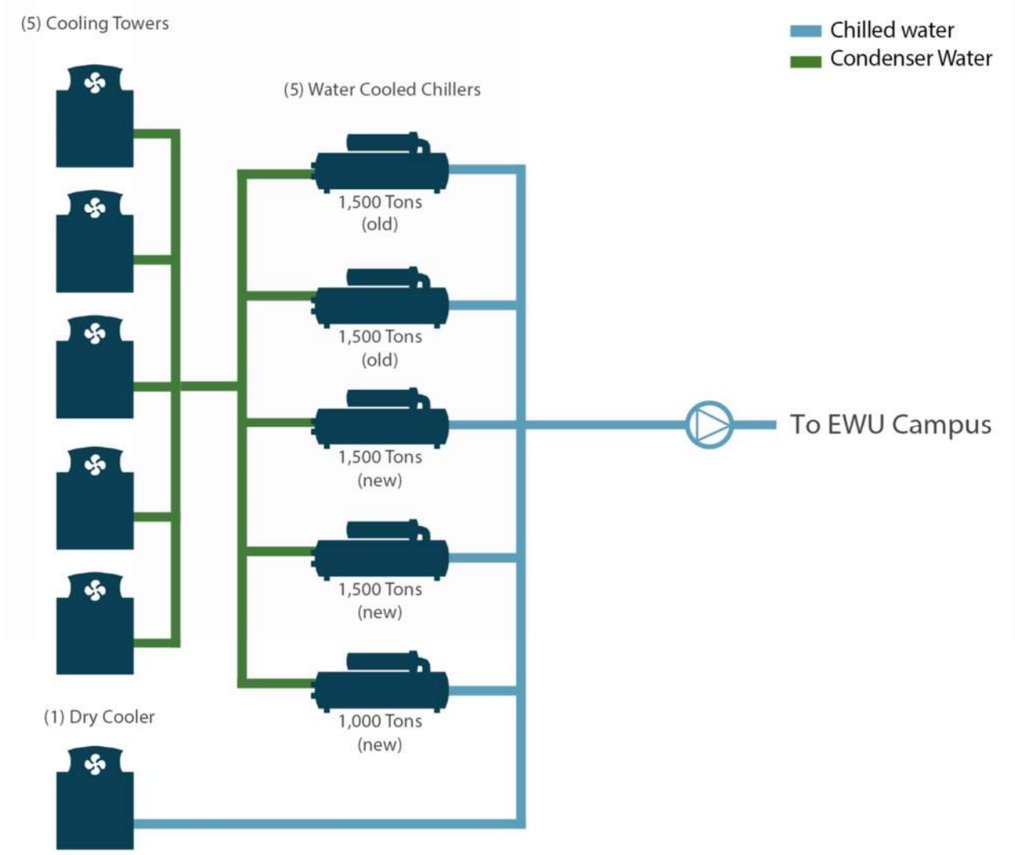


Figure 6: Diagram of Existing Campus Cooling System

Campus Heating

Most of the campus (2.6 million sf) is served by the central steam heating plant at the Central Rozell Energy Plant. This plant consists of five (5) high-pressure steam boilers with a total capacity of 245,000 lb/hr. The boiler ages vary, and boilers 1 and 2 are in the process of being replaced with new gas-fired boilers. The highest observed steam load on campus was approximately 75,000 lb/hr. Steam is distributed to campus via the utilidor system. While some buildings have hydronic heating via steam to hot water converters, many buildings receive heating via direct steam coils. Steam condensate is pumped back to the central plant for collection, at an estimated return rate of 92%.

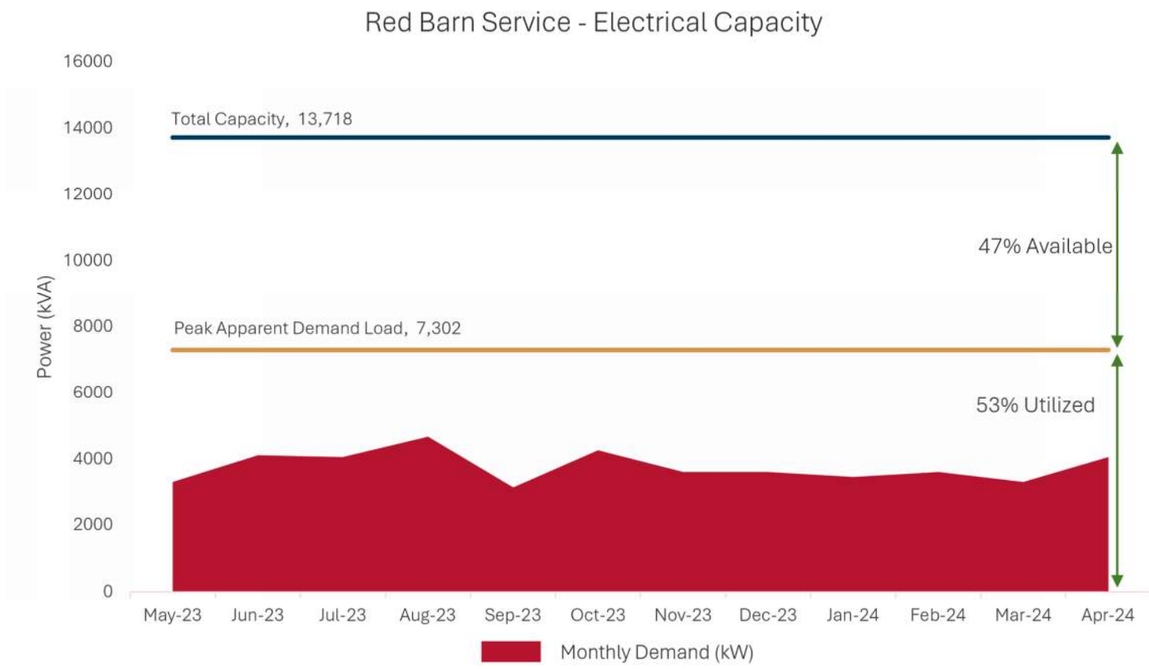
Campus Cooling

Most of the campus (2.1 million sf) is served by the central chilled water system at the Central Rozell Energy Plant. Residence halls are the main exception, as most do not have cooling. This plant consists of five (5) water-cooled chillers and open draw-thru cooling towers for a total capacity of 7,000 tons. The chiller plant is in the process of several modernization and energy upgrades, including water-side economizers and variable speed chillers and pumps. The chillers are turned off October thru April, and winter cooling is provided by a separate dry-cooler unit, with glycol anti-freeze protection. The connected buildings do not have heat exchangers for isolation, and chilled water is typically fed directly into the building's HVAC systems.

Summary of Campus Electrical Infrastructure

The existing campus electrical infrastructure at Eastern Washington University is powered via two service entrance points from two different City of Cheney Substations. Each service consists of a 600A, 13.2kV metal enclosed switchgear . The first service is located at Red Barn and powered from the Turnbull Substation. The second is located at Rozell and powered from the 4 Lakes Substation. Each of the two services feeds either of the two busses within a double-ended 1200A 13.2kV switchgear. This switchgear provides distribution to the remainder of the campus. In addition to powering this switchgear, the Rozell services also provides a 4000KVA feeder to the Rozell Chiller Plant.

Each service has the capacity to deliver up to 13.7MVA to the campus, for a total combined capacity of 27.4 MVA. Utility metering data was reviewed over the course of the year from May 2023 to April 2024 and the peak electrical demand was observed for both services. These values helped to determine the existing utilization of each of the electrical services. Significant capacity exists on both services to accommodate additional electrical load, and the campus loop is designed to allow for physical expansion on either end of the service switchgear busses. Further study will be conducted to calculate the total added electrical load from decarbonization, and will determine if the existing campus infrastructure is sufficiently sized to accommodate the new load



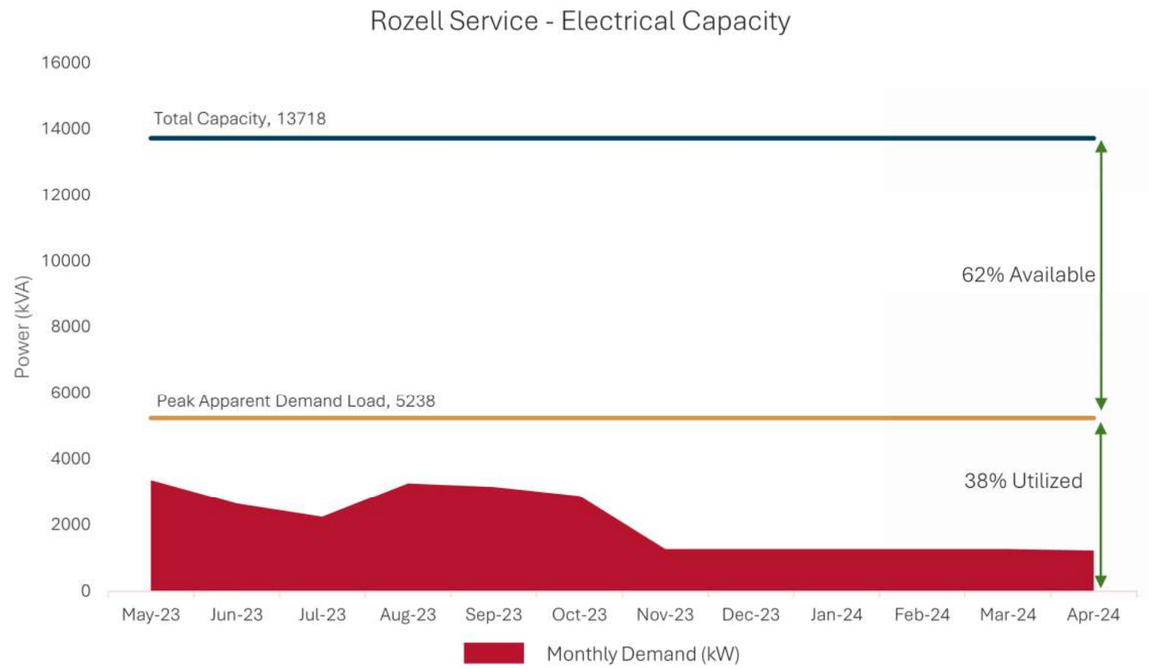


Figure 7: Red Barn and Rozell Plant Capacity Analyses

Section 3

Decarbonization Solution – Energy Plant

Key Takeaways

- The preferred system is an open-loop geothermal system with nodal plants.
- A wide variety of heat sources and sinks were considered, and a qualitative comparison was performed for three options to determine the preferred option.
- The added electrical load to the campus infrastructure has not yet been evaluated. This will be analyzed later in this project.

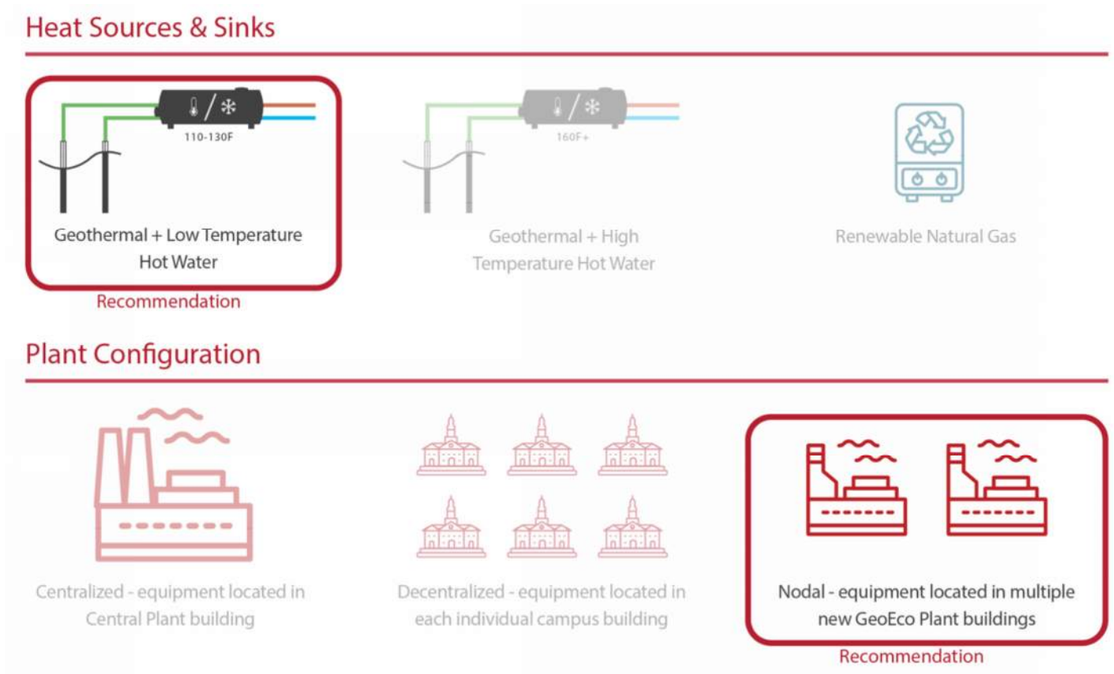
System Scoring Summary

As described in the following pages, several system options were considered for heat sources/sinks and plant configuration. For each system component, the options analysis answered the following key questions:

Heat Sources and Sinks: How will EWU generate heating and cooling?

Plant Configuration: Will the decarbonized system have a central location, or will it be dispersed across campus?

Based on this exercise, and with the approval of EWU, the preferred system is a nodal open-loop geothermal system.



System Scoring Criteria

Table 2 presents the scoring criteria and weightings used to determine the preferred system. These criteria were developed with EWU Construction, Planning, and Facilities groups input and considers the University's priorities and preferences.

Table 2: Relative Weights for Scoring Criteria

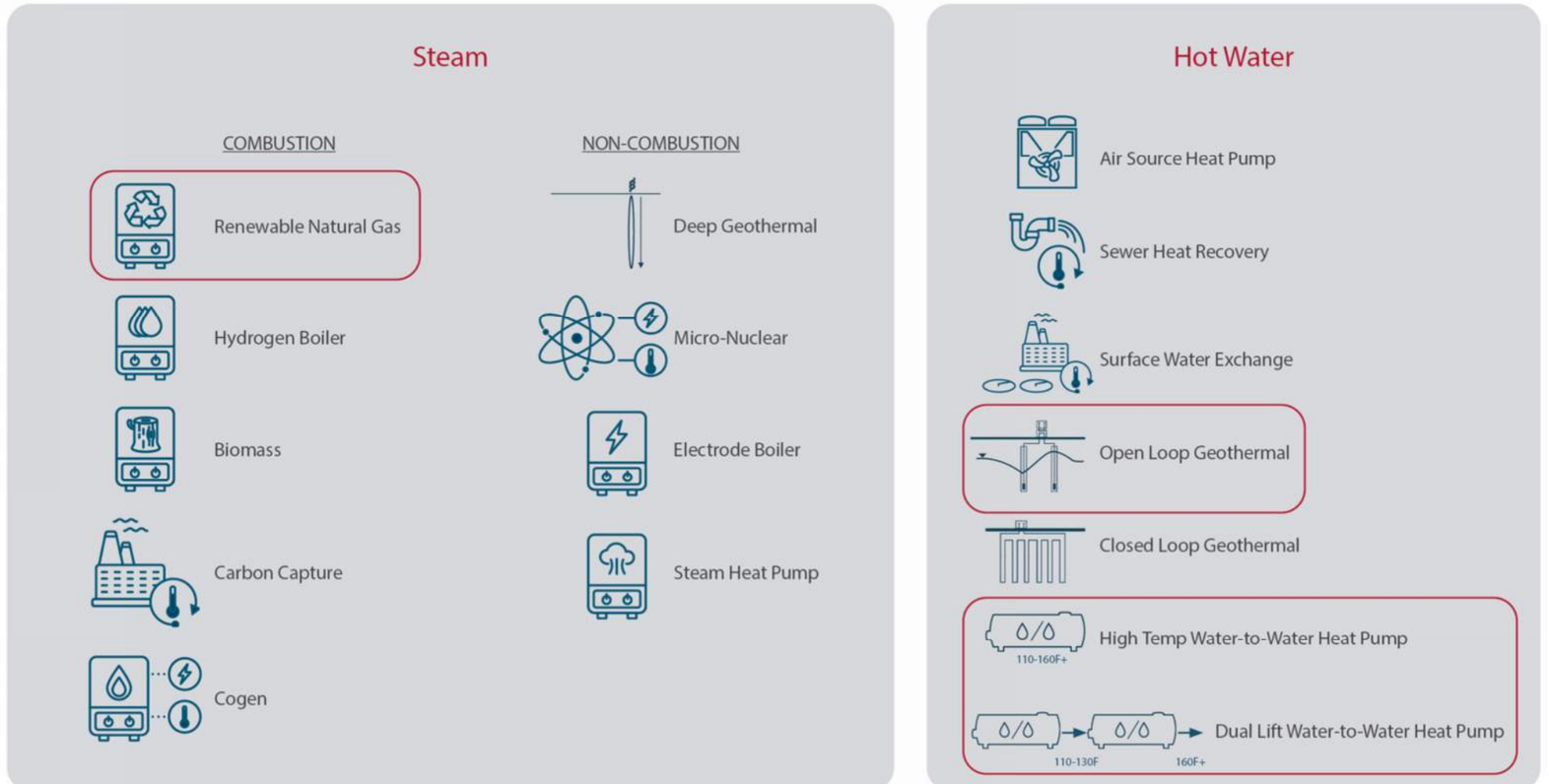
Scoring Variable	Weighting
First Cost	30%
Utility Cost	20%
Maintenance Cost	20%
Carbon Cost Effectiveness	10%
Teaching / Curriculum Opportunity	20%

System Considerations

Heating is currently provided by fossil fuel-fired steam boilers, which are a prime source of scope 1 carbon emissions. Transitioning that fossil fuel-based system to one not requiring natural gas is a primary piece in driving decarbonization on campus. Since EWU receives electricity from a utility that is powered predominantly by hydropower, transitioning the gas-based system to an electrified system is a key strategy for decarbonization. The system options list below summarizes the systems considered for electrification of the EWU heating system. Qualitative scoring for three options is included on the next page, followed by a complete list of options with further context. **Based on this analysis, open-loop geothermal is the preferred electrified system. Note: this recommendation must be validated by favorable results from a geothermal test well.**

System Options

Systems that would maintain the steam distribution system, as well as those that would transition heating from steam to hot water were considered. In addition, the temperature of the hot water was considered, as different technologies have different capabilities. Based on guidance from EWU, the systems in red boxes in the figure below were compared qualitatively, as shown on the next page.



Low Temperature vs High Temperature Hot Water

When switching from steam to hot water the temperature of that water is a critical consideration. Many of EWU's buildings currently have mechanical systems with direct steam heating. These buildings will require more invasive mechanical system retrofits to switch from steam to hot water. The retrofitted hot water system should be low temperature. Other scenarios will need to be considered on a case-by-case basis. The first nine buildings for conversion are described in the next section of this report.

Low Temperature Hot Water (LTHW)

- Least amount of mechanical plant equipment needed.
- Some existing hot water systems may be able to operate on lower temperatures, requiring minimal in-building upgrade. For those that can't, and for existing steam systems, LTHW may require significant in-building retrofits.
- Mandated for new construction buildings in Washington State.

High Temperature Hot Water (HTHW)

- Requires either two-stage heating systems (with two pieces of equipment), or high temperature heat pumps, which are an emerging technology.
- Does not usually require invasive retrofits to existing in-building mechanical systems.
- Of the buildings that currently have hot water, most operate with HTHW.

The heat source/sink analysis compared the relative merits of three systems qualitatively and scored them against performance criteria identified in collaboration with EWU stakeholders. Table 3 presents the results of the scoring analysis.

Table 3: Relative Scoring of Decarbonization Strategies

Geo + Low Temperature Hot Water (LTHW)	Geo + High Temperature Hot Water (HTHW)	Steam via Renewable Natural Gas
Recommendation		
While low temperature hot water is the best-scoring option, most likely the solution will use a mix of low temperature and high temperature hot water, depending on existing building systems. A low temperature hot water system depends on the operating conditions of in-building heating systems, as some buildings may need extensive retrofit to accommodate a low temperature heating system.		
Description		
Open loop geothermal with water-to-water heat pumps providing 110-130F hot water.	Open loop geothermal with water-to-water heat pump(s) providing 160F+ hot water. Bringing hot water up to high temperatures may be achievable with a single heat pump or may require two heat pumps in a dual-lift configuration.	Renewable natural gas (RNG) boilers to provide steam to existing systems. As it is currently written, HB 1390 only allows for 10% of annual heating to be provided by gas or electric resistance. Commerce has not yet provided guidance on alternative fuels.
First Cost		
$$$$	$$$$	$
Utility Cost		
$	$$	$$$$$
Maintenance Cost		
$$$	$$$$	$$$$$
Carbon Cost Effectiveness		
High	Medium	Low
Teaching / Curriculum Opportunity		
High	High	Low
Overall Score		
3.70	**3.10**	**2.20**
Advantages		
- More efficient - Less electrical load - Fewer pieces of equipment - Provides cooling and heat recovery	- Fewer pieces of equipment - Avoids potentially expensive in-building retrofits - Provides cooling and heat recovery	- Familiar Technology - Avoids potentially expensive in-building retrofits
Disadvantages		
- Will require some substantial/significant building retrofits to convert to LTHW - Assuming new pipes can't fit in existing tunnel, will require sitework to install new distribution piping.	- High temperature heat pumps are an emerging technology - Higher equipment first cost - Higher O&M costs - Dual-lift systems would need additional space - Assuming new pipes can't fit in existing tunnel, will require sitework to install new distribution piping.	- Current RNG price 5 to 7 times higher than natural gas. Price needs to come down significantly. - RNG supply is not currently mature. System is reliant on utility's ability to provide sufficient RNG. - Boiler System is a heating-only solution that offers no benefit to the central chilled systems. Does not allow for heat recovery. - High maintenance costs in the plant, distribution piping, and in-building systems.

Decarbonization Solution | Heat Sources & Sinks Technology Options

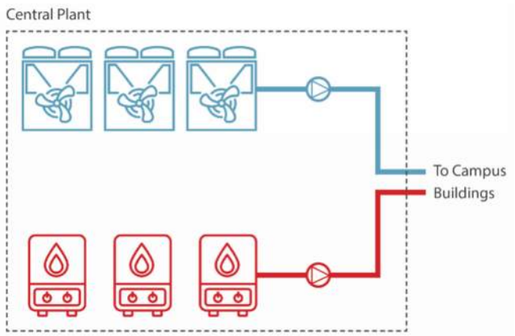
Heat can be introduced to the campus from a wide variety of possible sources via a wide variety of technology. Table 4 presents the options considered for the EWU campus and considerations for their applicability.

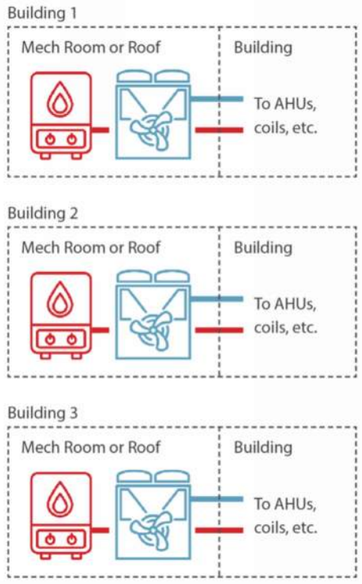
Table 4: Heating Technology Options

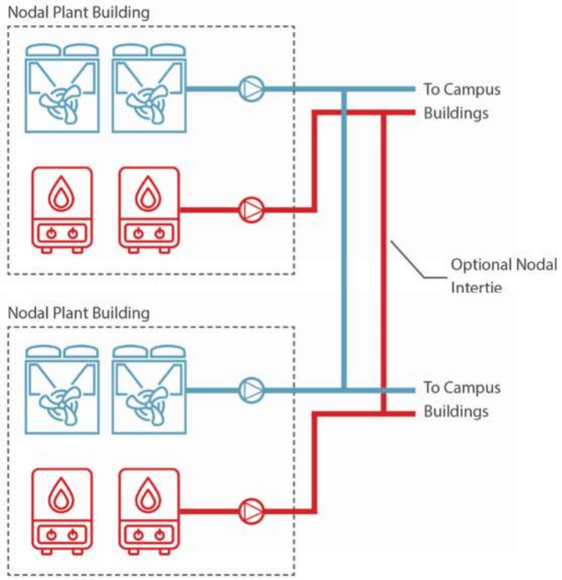
		Concept	Heating?	Cooling?	Suggested Action	Notes
Steam	Combustion	**Renewable Natural Gas Boilers**	Yes	No	Evaluate Qualitatively	Currently utility RNG market is not mature in local market. With HB 1589 passed, gas utilities may evolve in the near future. Limitation of current options puts resiliency at risk. Additionally, HB 1390 has not ruled on validity of alternative fuels that use combustion. Gasification of biomass is possible, but will be space intensive and have similar challenges as biomass boilers.
		Biomass Boilers	Yes	No	Fast Fail	Requires consistent supply, is labor-intensive, and requires large footprint for boiler feed. There is also debate as to whether biomass is carbon-free. Additionally, HB 1390 has not ruled on validity of alternative fuels that use combustion.
		Hydrogen Boilers	Yes	No	Fast Fail - Not At Scale Yet	Provides resiliency through hydrogen storage, but is not commercially viable at scale yet. CU Boulder is currently undertaking a pilot program for research purposes. Additionally, HB1390 has not ruled on validity of alternative fuels that use combustion.
		Cogeneration Boilers	Yes	No	Fast Fail	Provides campus resiliency though on-site power generation, and also reduces electrical load on City Utility. Burns fossil fuels to create heating, so cannot be used for HB 1390 compliance
		Carbon Capture	Yes	No	Pilot Project Underway	EWU was recently awarded grant funding to design and construct a carbon capture system for the existing fossil fuel-based steam boilers.
	Non-Combustion	**Deep Geothermal**	Yes	No	Fast Fail	Deep geothermal is possibly feasible, but requires further study and would most likely have a large first cost. It is currently more suited for utility scale.
		Micro-Nuclear	Yes	No	Fast Fail	Microreactors (5-10 MW) are currently in early stage of design/development. Won't be available until late 2020's/early 2030's at the earliest
		Electrode Boiler	Yes	No	Fast Fail - Not Allowed by 1390	Can only contribute 10% of annual heat input per HB 1390 requirements, not a solution on its own. Likely improves overall plant heating efficiency ~15-20%. EWU already evaluated this (before 1390) and found it too expensive.
Hot Water	High Temp	**Heat Exchange Source + High Temp Heat Pump (Single Lift)**	Yes	Yes	Evaluate Qualitatively	High-temperature heat pumps are a quickly emerging technology. While typically used for industrial applications, manufacturers are quickly providing new models with better performance for higher education applications.
		Low Temp HW (LTHW) + Secondary Heat Pump (Dual Lift)	Yes	Yes		1st step heating can be any LTHW concept (e.g. geothermal). 2nd step heat from LTHW to HTHW achieved via water-to-water heat pumps (WWHP) in each building or at certain nodes. In-building WWHPs limited by available mech room space and electrical capacity.
		Steam Heat Pump (Single Lift)	Yes	No	Future Consideration	Similar to High Temp heat pump, these are being seen first in industrial applications and emerging quickly. Development for commercial applications is slightly lagging behind high temp heat pumps.
		Low Temp HW + In-Building Elec Boiler (Dual Lift)	Yes	No	Future Consideration	In-building electric heating is not limited by HB 1390. 1st step heating can be any LTHW concept (e.g. geothermal). 2nd step heat from LTHW to HTHW achieved via electric boiler/heating in each building or at certain nodes. In-building electric heating limited by available mech room space and electrical capacity. Electric boilers are significantly less efficient than WWHPs and aren't ideal for two-step controllability. Could be considered in future phase if mechanical room space becomes a limiting factor for the WWHP option.
	Low Temp	**Open Loop Geo-Exchange**	Yes	Yes	Evaluate Qualitatively	EWU conducted a geothermal evaluation with system options, which found the aquifer beneath campus could have capacity to meet campus heating/cooling needs. The findings of the evaluation are based on computer modeling and available data, and need to be validated via geothermal test well.
		Closed Loop Geo-Exchange	Yes	Yes	Fast Fail - Open Loop is More Viable	More costly per unit capacity than open loop and requires significantly more site area. Viable option for sites that don't have a viable open loop aquifer.
		Air-to-Water Heat Pump	Yes	Yes	Future Consideration	Could be included for peaking heating/cooling loads in campus system, depending on aquifer viability and total system cost. Viable option for standalone buildings not connected to campus system.
		Surface Water Exchange	No	Yes	Fast Fail	EWU campus is not directly adjacent to a significant body of water.
		Campus Sewer Heat Recovery	Yes	Yes	Fast Fail	Campus sewer line would have insufficient flow to make a meaningful impact. Makes more sense for sites that are near very large citywide sewer lines. Otherwise, the added maintenance and cost are not worth the energy recovered.

Decarbonization Solution | Plant Configuration Options

The plant configuration dictates where the heating/cooling equipment is located and the general quantity of pieces of equipment. The existing heating/cooling system is centralized, with all the main equipment located in the Rozell Energy Plant. The main tradeoffs between a centralized plant and several smaller distributed plants include maintenance, phasing, and space requirements. **The nodal system is preferred, largely due to its flexibility and phase-ability, as well as the opportunity to showcase decarbonization to the campus.**







Centralized

A centralized system houses all heating and cooling equipment in a single location. This allows for larger equipment with less maintenance but is not ideal for phasing and flexibility.

Decentralized

A decentralized system houses all heating and cooling equipment in individual buildings. All buildings are independent of a central loop and mechanical equipment is standalone. In essence, the existing central heating/cooling loop would be abandoned. While this reduces overall pumping energy, it also significantly increases maintenance costs. It is also difficult from a constructability perspective since existing buildings don't typically have extra space or electrical capacity for large new equipment. This approach is also challenging to integrate with geothermal as it is impractical for each building to have its own wells.

Nodal

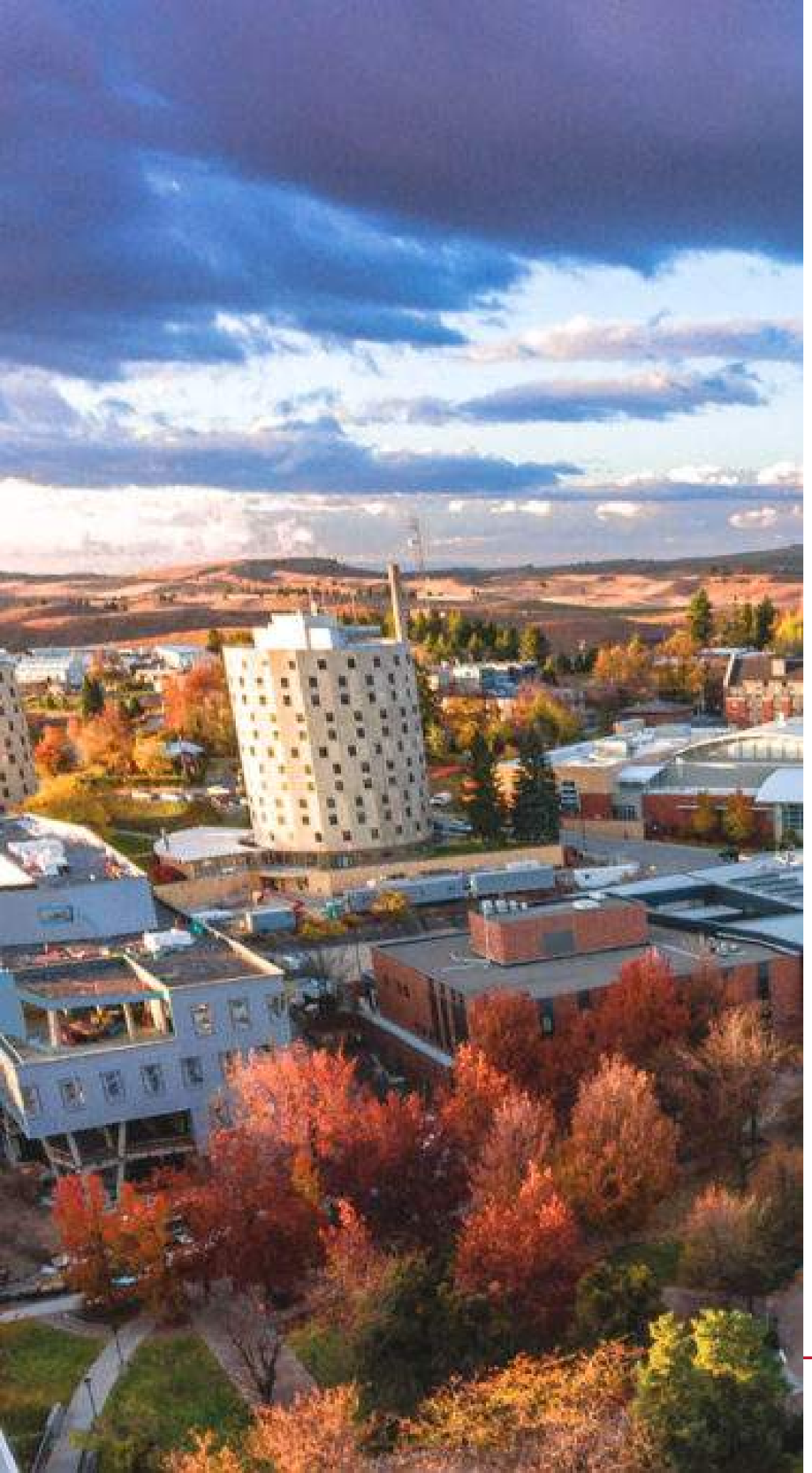
A nodal system houses all heating and cooling equipment in several smaller distributed plant buildings, meaning new plant buildings would be built across campus. This approach is a blend of centralized and decentralized, and each plant building would house mid-size mechanical equipment.

Decarbonization Solution | Plant Configuration Scoring

The plant configuration analysis compared three options for the distribution of central plant equipment and distribution of thermal energy across the campus. These options were scored against performance criteria identified in collaboration with EWU stakeholders, and the results are shown in Table 5.

Table 5: Relative Scoring for Plant Distribution Strategies

Centralized	Decentralized	Nodal
Recommendation		
The nodal configuration is recommended as it has many of the benefits of the centralized system while being flexible and well-suited to phasing.		
Description		
This option is most similar to the existing central plant configuration, with all major mechanical equipment located in one central location.	This option would employ major pieces of mechanical equipment (i.e. water-to-water heat pumps, air-source heat pumps) at each building to produce heating and cooling at the building level.	This option would utilize multiple "nodal" plants, each with major mechanical equipment, spread across campus.
First Cost		
$$	$$$$$	$$$
Utility Cost		
$	$$	$
Maintenance Cost		
$	$$$$	$$
Carbon Cost Effectiveness		
High	Medium	High
Teaching / Curriculum Opportunity		
Medium	Low	High
Overall Score		
4.10	2.00	4.20
Advantages		
- Fewer pieces of major mechanical equipment mean less maintenance - Fewer wells - Reduced well maintenance - Reduced infrastructure costs - Doesn't require new buildings across campus	- Doesn't require new or modified distribution piping - Buildings can be built and operated independently of each other - No new dedicated building for plant equipment needed	- Better for phasing than central plant - Flexible to evolving campus plans - Lower conveyance piping costs for geothermal - Lower likelihood of overdesigning wellfields - Provides opportunity to showcase decarbonization
Disadvantages		
- Higher conveyance piping costs for geothermal - Fewer pieces of equipment mean less redundancy/resiliency - Harder to phase, resulting in larger capital requests - New hot water distribution piping across campus has high campus impact	- Higher O&M costs from increased quantity of equipment - Reduced Space/roof area in buildings to fit mechanical equipment - Most likely requires substantial electrical upgrades at most buildings - Abandons existing infrastructure - No heat sharing	- More maintenance than central system - Requires small new plant buildings and new hot water distribution piping



Section 4

Decarbonization Solution – Building Conversions

Key Takeaways

- The nine buildings were scoped for decarbonized space heating and water heating based on their existing systems.
- No electrical service upgrades are required at any of the nine buildings.
- The total ROM cost to convert these nine buildings so they can connect to the first geothermal node is ~$20,000,000.

Building Renovations

Achieving decarbonization at EWU hinges on ensuring that the existing buildings can utilize thermal energy from the proposed nodal geothermal plants. Sharing thermal energy is the defining feature of any district energy system. This study has scoped decarbonization renovations to connect nine buildings to the first nodal plant. The district connection is intended to allow the sharing of thermal energy for both space heating and domestic water heating systems. The proposed renovations also dovetail with a variety of efficiency improvements that are outlined in the Energy Upgrades ROM Pricing Report and included in the 2025-2027 capital request. Improving the functionality, efficiency, and control of any system will improve the overall performance of the district. The exact implementation of building renovations is dependent on the funding received. Figure 8 below shows the nine buildings considered for connection to the first nodal central plant. The specific renovations required are discussed in the following pages.

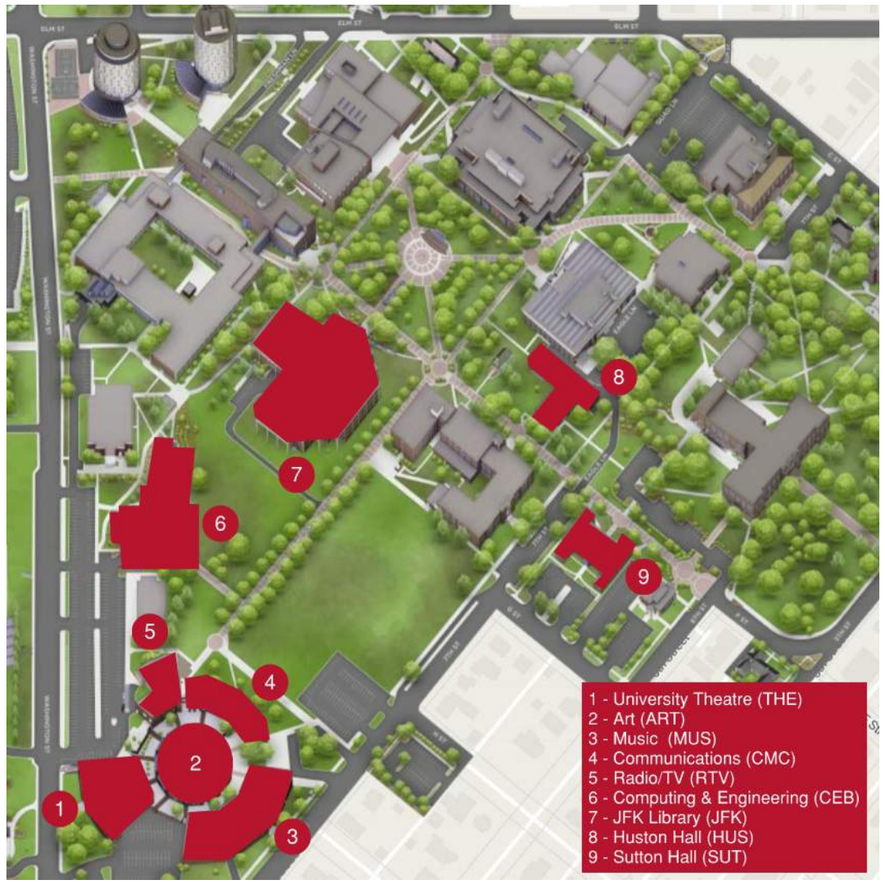


Figure 8: Buildings Studied for District Interconnection

Mechanical Decarbonization Strategies

Table 6 and Table 7 below describe the recommended strategies for decarbonizing the space heating and DHW systems. The proposed in-building solutions assume low temperature hot water (LTHW) is provided to the buildings at approximately 120°F. The appendices include detailed descriptions of the existing systems in each building.

Table 6: Space Heating Decarbonization Strategies

Decarbonization Strategy	Existing Mechanical System	Proposed Mechanical System	Applies To
HHW Strategy 1 **High Temp Hot Water (HTHW) Double Lift**	Many heating coils served by HTHW.	Add in-building water-to-water heat pump to boost district energy LTHW supply up to 180°F to serve existing coils. No coil replacement.	JFK - Kennedy Library SUT - Sutton Hall
HHW Strategy 2 **Coil Replacement**	Relatively few heating coils. All coils are either direct steam OR HTHW.	Replace coils and piping with LTHW. Replace existing fans with new fan walls.	CEB - Computer & Engineering CMC - Communications HUS - Huston Hall MUS - Music Building RTV - Radio & TV
HHW Strategy 3 - **Hybrid Coil Replacement & Double Lift**	Direct steam heating coils AND HTHW coils.	Replace steam coils with LTHW piping and coils. Add in-building water-to-water heat pump to boost district energy LTHW supply up to 180°F to serve existing HTHW coils	ART - Art Building THE - Theater

Table 7:Domestic Hot Water Decarbonization Strategies

Decarbonization Strategy	Strategy Description	Applies To
DHW Strategy 1 **Existing Electric DHW Heater**	Maintain existing electric DHW heater(s), tanks(s) and infrastructure.	CMC - Communications MUS - Music Building RTV - Radio & TV SUT - Sutton Hall THE - Theater
DHW Strategy 2 **DHW Double Lift Heat Pump**	Add an in-building DHW heat pump and storage tank to use district energy LTHW and maintain DHW @ 140°F. Existing steam converter to be left in place for optional backup.	JFK - Kennedy Library CEB - Computer & Engineering HUS - Huston Hall ART - Art Building

Building Decarbonization Strategy 1

Mechanical

Strategy 1 will add an in-building water-to-water heat pump to boost district energy LTHW and supply up to 180°F to serve the existing coils. All existing coils will remain, which will limit the scope of work to the main mechanical room near the existing steam converter. The existing steam converter will be left in place for backup to allow for sizing the booster WWHP for 60-80% of the true building peak load, saving cost, while still delivering ~90-95% of annual building heat. The hot water reset schedule should be optimized to maintain the lowest temperature HW necessary to provide heat to the building.

Domestic Hot Water

If the building currently utilizes electric boilers or electric tank style heaters for domestic hot water, they are to remain in place. If campus steam is used to heat domestic hot water, a new in-building DHW heat pump and storage tank will be added to use district energy LTHW and maintain DHW @ 140°F. The existing steam converter to be left in place for optional backup and can be removed if and when campus steam becomes obsolete.

Application

Strategy 1 is applicable for buildings without steam, where there exists a large quantity of hot water coils requiring High Temperature Hot Water. The Kennedy Library (JFK) is shown in Figure 9, but this strategy can also be applied to Sutton Hall (SUT) which has similar systems.

Additional Considerations

Further study of the actual building loads will impact how this strategy is implemented. The continued use of steam provides flexibility and resiliency while decarbonized systems are implemented and commissioned. In some cases, it may be possible to decommission the steam system once the decarbonized system is operational and demonstrates the ability to meet the building loads. Depending on the timeline for implementation, new technologies in high-temperature heat pumps may reduce cost and

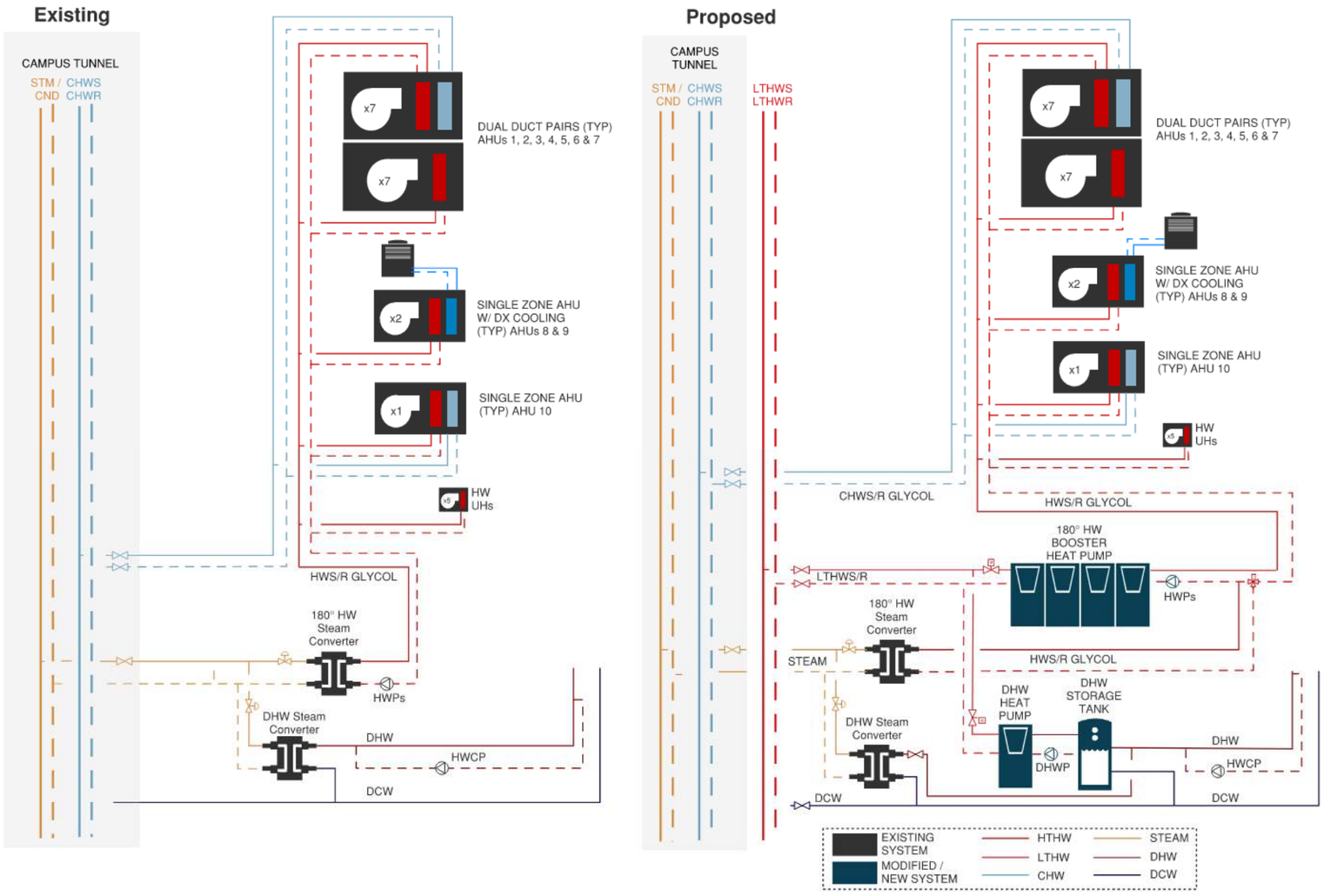


Figure 9: Strategy 1 Mechanical Diagrams

Building Decarbonization Strategy 2

Mechanical

Strategy 2 will replace all steam coils and piping with low temperature hot water (LTHW) coils and piping to utilize district energy LTHW. A new heat exchanger will be necessary to isolate building LTHW loop from district LTHW loop and allow for glycol freeze protection in the building loop. To allow both space and capacity for new LTHW coils, the fans will need to be replaced with new fan walls.

Domestic Hot Water

If the building currently utilizes electric boilers or electric tank style heaters utilizes for domestic hot water, they are to remain in place. If campus steam is used to heat domestic hot water, a new in-building DHW heat pump and storage tank will be added to use district energy LTHW and maintain DHW @ 140°F. The existing steam converter to be left in place for optional backup and can be removed if and when campus steam becomes obsolete.

Application

Strategy 2 applies to buildings that have steam heating and limited or no terminal systems with coils. These systems are ideally suited to change out steam coils and piping and serve with district energy LTHW. The Computer & Engineering Building (CEB) is shown in the diagram below, but this strategy can also be applied to Communications (CMC), Huston Hall (HUS), Music (MUS) and the Radio & TV Building (RTV), which have similar systems.

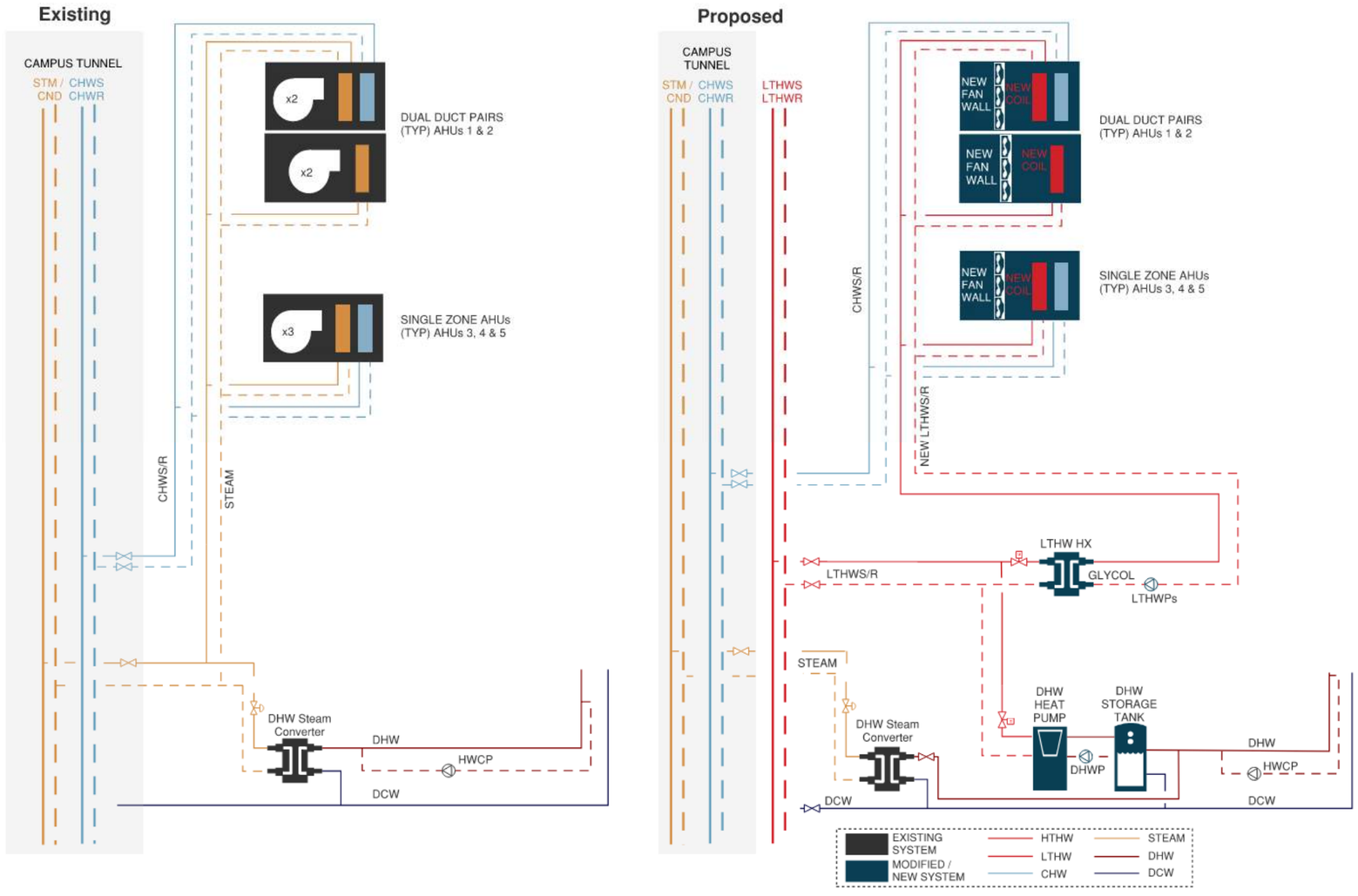


Figure 10: Strategy 2 Mechanical Diagrams

Building Decarbonization Strategy 3

Mechanical

Strategy 3 will replace large steam coils in air handlers with low temperature hot water (LTHW) coils to utilize district energy LTHW. To allow both space and capacity for new LTHW coils, the air handler fans will need to be replaced with new fan walls. A new heat exchanger will be necessary to isolate the building LTHW loop from the district LTHW loop and allow for glycol freeze protection in the building loop.

Terminal heating systems will be served by a new in-building water-to-water heat pump to boost district energy LTHW up to180°F HW. The hot water reset schedule should be optimized to maintain the lowest temperature HW necessary to provide heat to the building. The existing steam converter to be left in place as back up to allow for sizing the booster WWHP for 60-80% of the true building peak load, saving cost, while still delivering ~90-95% of annual building heat.

Domestic Hot Water

If the building currently utilizes electric boilers or electric tank style heaters utilizes for domestic hot water, they are to remain in place. If campus steam is used to heat domestic hot water, a new in-building DHW heat pump and storage tank will be added to use district energy LTHW and maintain DHW @ 140°F. The existing steam converter to be left in place for optional backup and can be removed if and when campus steam becomes obsolete.

Application

Strategy 3 applies to buildings that have steam heating and hot water terminal heating. These systems are ideally suited to change out steam coils and serve directly with district energy LTHW but will also require an in-building heat pump to maintain the terminal heating hot water loop temperature up to 180°F. The Art Building (ART) is shown in the diagram below, but this strategy can also be applied to the Theater Building (THE), which has similar systems.

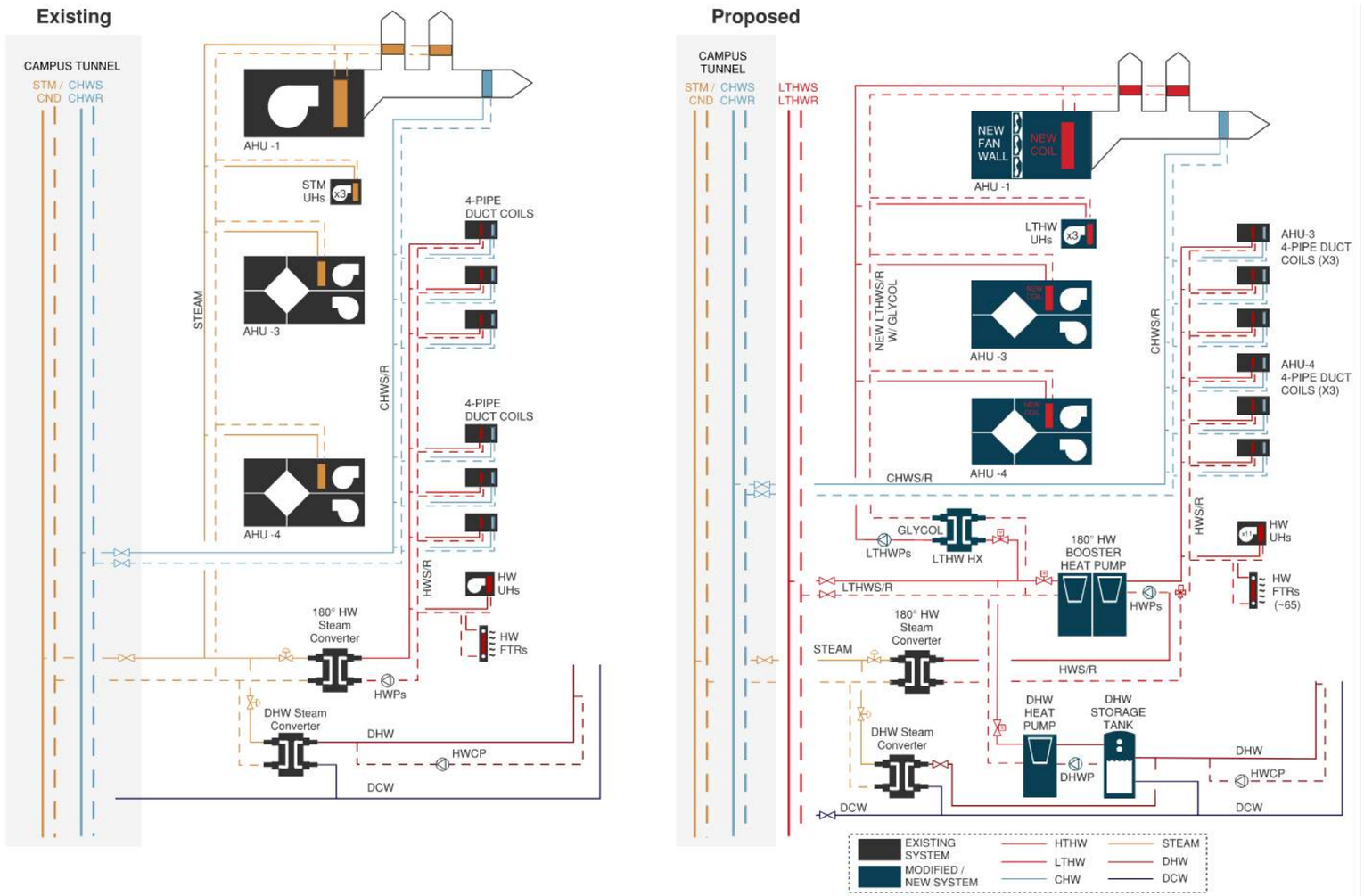


Figure 11: Strategy 3 Mechanical Diagrams

Summary of In-Building Infrastructure

The available electrical capacity and the increased load required to accommodate the proposed upgrades was reviewed at all nine buildings on campus. Metering data was reviewed at each of the buildings, where available, and compared to the capacity as determined from the building service nameplate ratings. **All the buildings reviewed were found to have sufficient electrical capacity available and can accommodate the proposed mechanical revisions without requiring a new electrical service.**

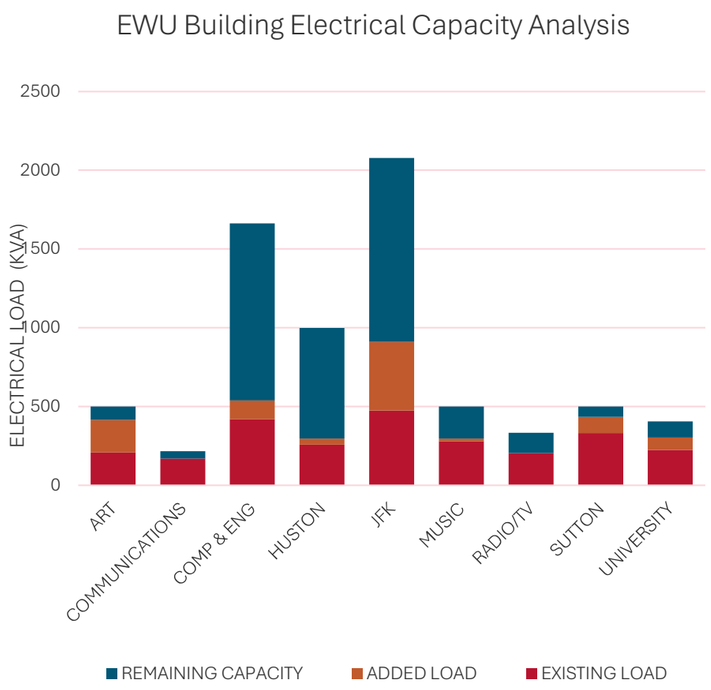


Figure 12: Summary of Existing Electrical Capacity Analysis

Table 8: Summary of Building Electrical Services

Description			Existing Electrical Summary			Decarbonized Electrical Summary			
	Building	Building Area [s.f.]	Existing Electrical Service	Total Electrical Capacity (KVA)	Existing Demand Load (KVA)	Added Electrical Load (KVA)	Total Decarbonized Electrical Load (KVA)	Percentage of Electrical Capacity Utilized	Electrical Service Upgrade Required? (Y/N)
JFK	JFK Library	124,496	2500A, 480Y/277V,3Ø	2078	473	436	910	44%	N
CEB	Computing & Engineering Building	98,476	2000A, 480Y/277V,3Ø	1663	419	119	538	32%	N
MUS	Music Building	47,618	600A, 480Y/277V,3Ø	499	278	18	296	59%	N
THE	University Theater	41,164	1125A, 208Y/120V,3Ø	405	223	79	303	75%	N
ART	Art Building	34,469	600A, 480Y/277V,3Ø	499	208	207	415	83%	N
SUT	Sutton Hall	31,927	600A, 480Y/277V,3Ø	499	331	102	433	87%	N
HUS	Huston Hall	27,424	1200A, 480Y/277V,3Ø	998	258	38	295	30%	N
CMC	Communications Building	19,289	600A, 208Y/120V,3Ø	216	169	0	169	78%	N
RTV	Radio/TV Building	16,980	400A, 480Y/277V,3Ø	333	205	0	205	62%	N

Summary of Energy Efficiency Measures

The energy efficiency measures below are recommended for implementation. While these measures can occur independently of the decarbonization conversions, they should happen concurrently to capture complementary benefits.

Table 9: Energy Efficiency Measures by Building

Energy Efficiency Measure	Strategy Description	Applies to
Lighting Upgrade	Savings is a result of decreased power draw of LED lamps versus fluorescent lamps	JFK - Kennedy Library CEB - Computer & Engineering HUS - Huston Hall SUT - Sutton Hall ART - Art Building MUS - Music Building THE - Theater Building RTV - Radio & TV CMC - Communications Building
Lighting Controls	Room- or luminaire-based occupancy sensors will reduce lighting runtime. Recommend installing in study rooms, conference rooms, restrooms, etc..	JFK - Kennedy Library CEB - Computer & Engineering HUS - Huston Hall SUT - Sutton Hall ART - Art Building MUS - Music Building THE - Theater Building RTV - Radio & TV CMC - Communications Building
Window Upgrade	Energy savings is a result of reduced heat loss through energy efficient windows	ART - Art Building MUS - Music Building
Demand Control Ventilation (DCV)	DCV automatically reduce ventilation intensity during off-peak hours, saving energy. Consists of sensors and controllers that adjust ventilation based on indoor air quality (CO2)	JFK - Kennedy Library MUS - Music Building
Damaged Duct / Coil Connections	Savings will be a result of decreased heat loss from AHU at damaged ductwork as well as water savings from leaking coil(s).	THE - Theater Building CMC - Communications Building
Constant Volume to Variable Volume Fans and Pumps	Savings result from ability to throttle pumps, fans, and valves when viable. Increased ability for zone control and scheduling.	ART - Art Building
Air System Testing and Balancing	Process of measuring, adjusting, and verifying HVAC systems to ensure they are functioning effectively and efficiently.	CEB - Computer & Engineering
Unoccupied Turndown Schedule	Unoccupied turndowns will result in reduced heating/cooling load as well as reduced fan energy.	JFK - Kennedy Library HUS - Huston Hall SUT - Sutton Hall ART - Art Building MUS - Music Building RTV - Radio & TV

Summary of In-Building Renovations

The costs listed below are "all in" costs, reflective of the total cost EWU can expect when implementing these projects. They include the building conversion strategies listed below as well as the energy efficiency measures listed in Table 9. They are ROM costs for budgetary purposes and will need to be refined during the next stage of development/implementation. The appendix provides additional cost information.

Table 10: Building Conversion Summary and ROM Costs.

Building		Building Area [s.f.]	Existing System	Decarbonized System	Decarbonized System Cost
JFK	JFK Library	124,496	HVAC: High Temp Hot Water serving mostly dual duct systems DHW: Electric DHW Heaters & Steam to DHW Converter	HHW Strategy 1 - Booster Heat Pump DHW Strategy 2 - Booster Heat Pump	$2,800,000
CEB	Computing & Engineering Building	98,476	HVAC: Direct steam serving dual duct systems and large single zone AHUs DHW: Steam to DHW converter	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 2 - Booster Heat Pump	$4,600,000
MUS	Music Building	47,618	HVAC: Direct steam serving air handlers and unit heaters DHW: Electric DHW Heaters	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 1 - Existing Electric DHW	$2,400,000
THE	University Theater	41,164	HVAC: Direct steam serving air handlers and HTHW serving terminal heating DHW: Electric DHW Heaters	HHW Strategy 3 - Hybrid Coil Replacement and Dual Lift Heat Pump DHW Strategy 1 - Existing Electric DHW	$1,900,000
ART	Art Building	34,469	HVAC: Direct steam serving air handlers and HTHW serving terminal heating DHW: Electric DHW Heaters & Steam to DHW converter	HHW Strategy 3 - Hybrid Coil Replacement and Dual Lift Heat Pump DHW Strategy 2 - Booster Heat Pump	$3,300,000
SUT	Sutton Hall	31,927	HVAC: HTHW serving air handlers and radiators DHW: Electric DHW Heaters	HHW Strategy 1 - Booster Heat Pump DHW Strategy 1 - Existing Electric DHW	$900,000
HUS	Huston Hall	27,424	HVAC: Direct steam serving air handlers DHW: Steam to DHW converter	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 2 - Booster Heat Pump	$1,700,000
CMC	Communications Building	19,289	HVAC: Direct steam serving air handlers DHW: Electric DHW Heaters	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 1 - Existing Electric DHW	$1,100,000
RTV	Radio/TV Building	16,980	HVAC: Direct steam serving air handlers DHW: Electric DHW Heaters	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 1 - Existing Electric DHW	$1,100,000

Appendix

A. Cost Estimate by Category

B. Existing System Description by Building

C. Renovation Scope by Building

Appendix A | Cost Estimate by Category

	Building	Building Area [s.f.]	Mechanical Labor	Electrical Labor	Energy Management & Controls	Complete Lighting	Window Upgrades	Equipment	Other	Complete Plumbing	Contingency	Construction Sub-total	Turnkey Estimate	Turnkey Cost / S.F.
JFK	JFK Library	124,496	$ 193,500	$ 96,750	$ 128,000	$ 596,336	$ -	$ 478,500	$ 50,000	$ 44,000	$ 158,709	$ 1,745,794	$ 2,880,561	$ 23.14
CEB	Computing & Engineering	98,476	$ 849,000	$ 197,501	$ 340,392	$ 262,981	$ -	$ 658,834	$ 50,000	$ 74,000	$ 243,271	$ 2,675,979	$ 4,415,365	$ 80.42
MUS	Music Building	47,618	$ 385,167	$ 92,543	$ 244,680	$ 117,202	$ 114,108	$ 288,791	$ 50,000	$ -	$ 129,249	$ 1,421,740	$ 2,345,872	$ 95.88
THE	University Theater	41,164	$ 362,333	$ 78,508	$ 201,640	$ 96,586	$ -	$ 249,408	$ 50,000	$ -	$ 103,847	$ 1,142,322	$ 1,884,831	$ 93.48
ART	Art Building	34,469	$ 521,113	$ 61,095	$ 243,944	$ 98,161	$ 199,689	$ 442,941	$ 50,000	$ 44,000	$ 166,094	$ 1,827,038	$ 3,014,612	$ 147.10
SUT	Sutton Hall	31,927	$ 65,000	$ 32,500	$ 123,879	$ 60,349	$ -	$ 167,500	$ 25,000	$ -	$ 47,423	$ 521,651	$ 860,723	$ 68.32
HUS	Huston Hall	27,424	$ 378,500	$ 53,748	$ 148,460	$ 72,324	$ -	$ 177,395	$ 25,000	$ 44,000	$ 89,943	$ 989,370	$ 1,632,460	$ 108.12
CMC	Communications Building	19,289	$ 255,042	$ 43,406	$ 97,550	$ 46,726	$ -	$ 119,619	$ 25,000	$ -	$ 58,734	$ 646,078	$ 1,066,028	$ 109.28
RTV	Radio/TV Building	16,980	$ 255,917	$ 38,805	$ 87,210	$ 41,774	$ -	$ 118,435	$ 25,000	$ -	$ 56,714	$ 623,855	$ 1,029,361	$ 118.03

Building		Heating						Cooling				Summary of Existing System
		System Type	Quantity	Coil Type	CFM	Coil MBH	GPM	Type	CFM	Coil MBH	GPM	
John F. Kennedy Library	AHU-1 C	Dual Duct	1	HW 180	8,000	608	60	CHW	22,345	686	130	(7) Dual duct systems with (7) 180° HW heating AHUs and (7) CHW cooling AHUs (14 total). 180° HW is provided from campus steam through a 9,800 MBH 850 GPM steam converter. CHW is provided by campus CHW.
	AHU-1 H	Dual Duct		HW 180	14,120	749	75					
	AHU-2 C	Dual Duct	1	HW 180	6,500	458	35	CHW	16,950	554	110	
	AHU-2 H	Dual Duct		HW 180	11,005	625	65					
	AHU-3 C	Dual Duct	1	HW 180	9,000	680	60	CHW	25,825	994	220	
	AHU-3 H	Dual Duct		HW 180	16,800	906	95					
	AHU-4 C	Dual Duct	1	HW 180	7,000	503	40	CHW	20,440	602	145	
	AHU-4 H	Dual Duct		HW 180	11,580	623	60					
	AHU-5 C	Dual Duct	1	HW 180	7,000	503	40	CHW	16,150	568	125	
	AHU-5 H	Dual Duct		HW 180	10,625	586	50					
	AHU-6 C	Dual Duct	1	HW 180	7,000	518	40	CHW	19,660	638	140	
	AHU-6 H	Dual Duct		HW 180	12,650	672	65					
	AHU-7 C	Dual Duct	1	HW 180	6,500	482	40	CHW	18,250	614	135	
	AHU-7 H	Dual Duct		HW 180	13,420	745	70					
	AHU-8	Single Zone	1	HW 180	2,000	50	5	DX	2,000	55	-	(2) small single zone systems with 180°F HW heating and DX cooling.
	AHU-9	Single Zone	1	HW 180	1,000	24	3	DX	1,000	26	-	
	AHU-10	Single Zone	1	HW 180	1,000	24	3	CHW	1,000	26	-	Small single zone AHU with 180°F HW heating & CHW cooling.
	UHs	UH	5	HW 180		75		-	-	-	-	(5) 180°HW Unit Heaters
	DHW	DHW										DHW is provided by multiple sources, a 800 MBH steam to HW converter, a 50 gallon 2.5 kW electric tank and a 80 gallon 10 kW electric tank.

Building		Heating						Cooling				Summary of Existing System
		System Type	Quantity	Coil Type	CFM	Coil MBH	GPM	Type	CFM	Coil MBH	GPM	
Computer & Engineering Building	AHU-1 C	Dual Duct	1	Steam	16,000	1,042	-	CHW	49,000	1,275	213	(2) Large dual duct systems with separate heating (steam) and cooling (CHW) AHUs.
	AHU-1 H	Dual Duct	1	Steam	27,000	586						
	AHU-2 C	Dual Duct	1	Steam	14,000	907	-	CHW	27,000	1,180	197	
	AHU-2 H	Dual Duct	1	Steam	51,000	1,102						
	AHU-3	Single Zone	1	Steam	20,000	432	-	CHW	20,000	475	79	(3) Large single zone AHUs with steam and CHW coils.
	AHU-4	Single Zone	1	Steam	10,000	216	-	CHW	10,000	270	45	
	AHU-5	Single Zone	1	Steam	15,000	324	-	CHW	15,000	540	90	
	DHW	DHW										(1) Steam to DHW Converter 1500 lbs./hr
Music Building	AH-1	Dual Duct	1	Steam	*30000*	1552	-	CHW	*40000*	*864*	*156*	(1) Large dual duct system with a single fan and separate (steam) heating and (CHW) cooling decks.
	AH-2	Single Zone	1	Steam	*18000*	597	-	CHW	*18000*	*389*	*115*	(1) Large single zone AHU with steam and CHW coils.
	UHs	Unit Heater	1	Steam								(1) Steam UHs in Mechanical Space
	DHW	DHW										Existing 12 kW 50 Gal Tank & 24 kW 80 Gal Tank

Building		Heating						Cooling				Summary of Existing System
		System Type	Quantity	Coil Type	CFM	Coil MBH	GPM	Type	CFM	Coil MBH	GPM	
University Theater	AHU-1	Dual Duct	1	Steam	21000	1009		CHW	21000	453.6	60.48	AHU-1 is a large dual duct system with a steam heating coil and chilled water coil.
	AHU-2	Single Zone	1	-	-	-	-	CHW	13860	299.38	39.917	AHU-2 appears to only have cooling and rely on terminal heating for heat.
	Steam Converter		Unavailable	180° HW	-	620	62	-				An existing steam to HW converter provides heat from campus steam as 180°F HW to a multiple terminal units and fin tube radiators. Steam UH's serve mechanical spaces.
	Reheat Terminals	Duct Coils	Unavailable	Unavailable	Unavailable							
	Radiators	FTR	Unavailable	Unavailable	-			-				
	CUHs	Cabinet Heater	1	Unavailable	-			-				
	UHs	Unit Heater	3	Steam	-			-				(3) Steam UHs in Mechanical Spaces
	DHW	DHW										DHW is provided by an existing 60 kW electric boiler and an existing 18 kW 50 Gal Tank.
Art Building	AHU-1	Dual Duct	1	Steam Preheat	36085	3106	-	CHW	32000	1554	212	AHU-1 is a large (~36,000 CFM) Dual Duct AHU w/ steam preheat coil, (2) steam duct coils and a CHW coil serving ~62 Zones
	AHU 1 - Duct Coil 7	Duct Coil	1	Steam	6000	382.08	-	-	-	-	-	
	AHU 1 - Duct Coil 8	Duct Coil	1	Steam	21000	656.7	-	-	-	-	-	
	AHU-3	RTU	1	Steam Preheat	8950	782	-	-	-	-	-	AHUs 3 & 4 are Large RTUs (~10,000 CFM) with steam preheat serving (3 each, 6 total) Duct Coil Zones with HW & CHW coils. A Steam to HW Converter serves perimeter radiators, unit heaters & convectors.
	AHU 3 - Duct Coil 1	Duct Coil	1	180° HW	2800	100.5	6.7	CHW	2800	107.25	14.3	
	AHU 3 - Duct Coil 2	Duct Coil	1	180° HW	3350	87	5.8	CHW	3350	116.25	15.5	
	AHU 3 - Duct Coil 3	Duct Coil	1	180° HW	2800	100.5	6.7	CHW	2800	107.25	14.3	
	AHU-4	RTU	1	Steam Preheat	8550	767	-	-	-	-	-	
	AHU 4 - Duct Coil 4	Duct Coil	1	180° HW	2950	106.5	7.1	CHW	2950	114.75	15.3	
	AHU 4 - Duct Coil 5	Duct Coil	1	180° HW	2800	100.5	6.7	CHW	2800	107.25	14.3	
	AHU 4 - Duct Coil 6	Duct Coil	1	180° HW	2800	100.5	6.7	CHW	2800	107.25	14.3	
	Steam UHs	Unit Heaters	3	Steam	-	235.6	-	-	-	-	-	(3) Steam Unit Heaters
	Perimeter Steam to HW Converter					1397.5	140					A Steam to HW Converter serves perimeter radiators, unit heaters & convectors.
	HW Convectors	Convectors	15	180° HW	-	73.7	7	-	-	-	-	
	HW UHs	Unit Heaters	11	180° HW	-	170.8	17	-	-	-	-	
	HW Wall Fin	Wall Fintube	49	180° HW	-	1153	115	-	-	-	-	
	DHW	DHW										DHW is provided by a steam converter connected to campus steam.

Building		Heating						Cooling				Summary of Existing System
		System Type	Quantity	Coil Type	CFM	Coil MBH	GPM	Type	CFM	Coil MBH	GPM	
Sutton Hall	AHU-1	VAV AHU	1	HW	11140	600	40		26000	950	200	An existing steam to HW converter provides heat from campus steam as 180°F HW to a single AHU and large array of fin tube radiators.
	Steam to HW HX	Steam HX	1	Steam		891	242					
	VAV RH Coil	Reheat Coil	1	HW		42	5					
	FTR	Fin Tube Radiator	195	HW		540						
	FCU-1	Fan Coil Unit	1	HW	145	11.5	1					
	DHW	DHW										DHW is provided by an existing 9 kW 50 Gal Tank.
Huston Hall	AHU-1	Multizone	1	Steam	16000	864	-	CHW	16000	345.6	57.6	(1) ~20,000 CFM 2 Zone Multizone AHU with Steam & CHW Coils for each zone. - Zone 2 appears capped off. Fan @ 80% or ~16,000 CFM remaining on Zone 1.
	AHU-2	Dual Duct	1	Steam	9000	450	-	-	-	-	-	
	AHU-3	Dual Duct	1	-	-	-	-	CHW	15000	345	60	(1) Dual Duct System with a ~15,000 CFM ~350 MBH CHW Cold Deck AHU & ~9,000 CFM ~ 450 MBH Steam Hot Deck AHU ~ 50 Zones
	SF-5	Fan Coil?	1	-	-	-	-	CHW	1500	36	6	(1) Small FCU with 36 MBH CHW
	CRAC-1	CRAC	4	-	-	-	-	DX				(4) DX CRAC Units (Assume replace former AHU1-Zn2)
	DHW	DHW										DHW is provided by a steam converter connected to campus steam.
Communications	AHU	Dual Duct	1	Steam	10150	384		CHW		219	29	Information included on Music Building drawing set. A single dual duct AHU with a steam coil and campus CHW provides heating and cooling to 28 dual duct zones.
	DHW	DHW										Existing 50 Gal 4.5 kW Electric DHW
Radio / TV	AHU-1	Dual Duct	1	Steam	*10,500*	397	-	CHW	*10,500*	*284*	38	Dual Duct AHU with steam heating coil and CHW cooling coil.
	DHW	DHW										Existing 30 kW Electric Boiler

Appendix C | Renovation Scope by Building

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
John F. Kennedy Library	AHU-1 C AHU-1 H AHU-2 C AHU-2 H AHU-3 C AHU-3 H AHU-4 C AHU-4 H AHU-5 C AHU-5 H AHU-6 C AHU-6 H AHU-7 C AHU-7 H AHU-8 AHU-9 AHU-10 UHs	Deploy a high temperature booster heat pump using the proposed campus LTHW as a source, and creating HTHW for the building. The existing steam converter and pump infrastructure shall remain in place as backup. HW & CHW piping infrastructure and coils will remain unchanged.	N/A	N/A	N/A	Provide a (4x)SBH300 90 ton modular water to water heat pump located in the existing mechanical room. The combined total is 4,420 MBH which will provide for the system load the majority of the year. The existing steam converter will be left in place as a supplemental and backup source. Connect in sidecar configuration to existing building piping loop. Provide new controls for WWHP and accessories, tie into existing building BAS. Assume (20) physical points & (80) virtual points.	Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Install (2) x 500 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances. Pipe in parallel and tie into existing hydronic piping loop.	337.2 kW new total load for (4x)SBH300 Modular WSHP (2) New 10 HP Pumps
	DHW	Electric tank type heater are to remain. Add a new WSHP DHW heater to offset the DHW capacity from the steam converter. The steam converter should be left in place as back up.	New supply and return piping from campus LTHW to new DHW Heat Pump. New DHW piping to integrate storage tank.			Provide new Transom SWH200 WSHPs using the proposed campus LTHW to provide DHW to facility. Provide 100 gallon storage tank. Provide new 20 GPM B&G EcoCirc Pump. Tie into existing DHW system. Existing to remain in place as back up.			33.7 kW power for new Transom SWH150 WSHP. New 1/2 HP Circ Pump

Appendix C | Renovation Scope by Building

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Computer & Engineering Building	AHU-1 C	Replace (7) existing AHU steam coils with new LTHW coils. Provide (7) new fan wall sections for AHUs. Provide new hydronic heat exchanger, new hydronic pumps, new piping to all existing AHUs. Retain steam connection at building, provide new steam-HW converter and pipe into new hydronic piping.	Route approximately 1500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 5" at the pump header to 2" at the coil connection. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 1100 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 49000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 3000MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2)x400gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances. Pipe in parallel and tie into new construction hydronic piping loop. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.)	(2) New 10 HP Building HW Pumps (7) New Fan Wall arrays, expected to remain with existing electrical capacity.
	AHU-1 H			Retrofit new 600 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 14000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-2 C			Retrofit new 1000 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 51000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-2 H			Retrofit new 1200 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 20000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-3			Retrofit new 500 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 20000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-4			Retrofit new 300 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 10000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-5			Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 15000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	DHW	Add a new WSHP DHW heater to offset the DHW capacity from the steam converter. The steam converter should be left in place as back up.	New supply and return piping from campus LTHW to new DHW Heat Pump. New DHW piping to integrate storage tank.			Provide (2) new Transom SWH250 WSHPs using the proposed campus LTHW to provide DHW to facility. Provide 100 gallon storage tank. Provide new 20 GPM B&G EcoCirc Pump. Tie into existing DHW system. Existing steam converter to remain in place as back up.			85.4 kW power for new Transom SWH150 WSHP. New 1/2 HP Circ Pump

Appendix C | Renovation Scope by Building

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Music Building	AH-1	Replace existing AHU steam coils with new LTHW coils. Provide new fan wall sections for all AHUs. Provide new hydronic heat exchanger, new hydronic pumps, new piping to all existing AHUs. Retain steam connection at building, provide new steam-HW converter and pipe into new hydronic piping.	Route approximately 1000ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 4" at the pump header to 2" at the coil connection. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 1600 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 40000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 2000MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2)x220 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances. Pipe in parallel and tie into new construction hydronic piping loop. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.)	(2) New 7.5 HP Building HW Pumps (2) New Fan Wall arrays, expected to remain with existing electrical capacity.
	AH-2			Retrofit new 600 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 18000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	UHs			Replace existing UH with new LTHW UH. Provide new control valve.	Provide new LTHW UH.				
	DHW	Existing electric DHW to remain in place.							N/A

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
University Theater	AHU-1	1) Replace existing AHU steam coils with new LTHW coils. Provide new fan wall sections for all AHUs. Provide new hydronic heat exchanger, new hydronic pumps, new piping to all existing AHUs. 2) Deploy a high temperature booster heat pump using the proposed campus LTHW as a source, and creating HTHW for the existing terminal HW loop. The existing steam converter and pump infrastructure shall remain in place as backup. HW & CHW piping infrastructure and coils will remain unchanged. Replace steam UH with LTHW	Route approximately 1000ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 4" at the pump header to 2" at the coil connection. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc) and fill with 30% glycol solution. New piping for LTHW loop to existing terminal HWR for back up heating to AHU coils. Route 100ft of new copper HW piping to branch to new UHs in Mechanical spaces. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.)	Retrofit new 1100 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 21000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	The existing steam converter will be left in place as a supplemental and backup source. Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2) x 5 HP 60 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances.	(2) New 5 HP Building HW Pumps (1) New Fan Wall arrays, expected to remain within existing electrical capacity.
	AHU-2			N/A Cooling Only	N/A Cooling Only				
	Steam Converter								
	Reheat Terminals			N/A All terminal device coils remain.	N/A All terminal device coils remain.	Provide a (2) SBH100 30 ton modular water to water heat pump located in the existing mechanical room. The combined total is 750 MBH which will provide for the system load the majority of the year. Connect in sidecar configuration to existing building piping loop. Provide new controls for WWHP and accessories, tie into existing building BAS. Assume (20) physical points & (40) virtual points.		Provide new duplex ECM circulator pump array serving the WWHP, B&G EcoCirc 375XL or similar. Pipe in parallel and tie into existing hydronic piping loop.	53 kW new (2x)SBH100 Modular WSHP (2) 3 HP B&G EcoCirc 375XL or similar.
	Radiators								
	CUHs								
	UHs			Replace existing UH with new LTHW UH. Provide new control valve.	Provide new LTHW UH.	N/A			(3) New UHs expected to remain within existing electrical capacity.
	DHW	Existing electric DHW to remain in place.							N/A

Building	Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Art Building — AHU-1	1) Replace existing AHU steam coils with new LTHW coils. AHU-1 Preheat, AHU 1 Duct Coils 7 & 8, AHU 3 & 4 Preheat Coils. Provide new fan wall sections for AHUs 1, 3 & 4. ***(New AHU preheat coils are downsized to reflect realistic loads that account for heat recovery & 4°F OSA design temp.)*** 2) Replace (6) 180°F duct coils with 120°F duct coils served by LTHW. Provide new hydronic heat exchanger, new hydronic pumps, new piping to all existing AHUs.	Route approximately 500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 3" at the pump header to 2.5" & 2" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 1800 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 36085 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	The existing steam converter will be left in place as a supplemental and backup source. Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2) x 20 HP 450 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances.	(2) New 20 HP Building HW Pumps (3) New Fan Walls expected to remain within existing electrical capacity.
AHU 1 - Duct Coil 7			Retrofit new 400 MBH LTHW coil into existing duct.	N/A - No Fan				
AHU 1 - Duct Coil 8			Retrofit new 700 MBH LTHW coil into existing duct.					
AHU-3		Route approximately 500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 3" at the pump header to 2" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 8950 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
AHU 3 - Duct Coil 1		N/A maintain HWS/R piping.	Retrofit new 200 MBH LTHW coil into existing duct.	N/A - No Fan				
AHU 3 - Duct Coil 2			Retrofit new 100 MBH LTHW coil into existing duct.					
AHU 3 - Duct Coil 3			Retrofit new 200 MBH LTHW coil into existing duct.					
AHU-4		Route approximately 500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 3" at the pump header to 2" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 8550 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
AHU 4 - Duct Coil 4		N/A maintain HWS/R piping.	Retrofit new 200 MBH LTHW coil into existing duct.	N/A - No Fan				
AHU 4 - Duct Coil 5			Retrofit new 200 MBH LTHW coil into existing duct.					
AHU 4 - Duct Coil 6			Retrofit new 200 MBH LTHW coil into existing duct.					

	Building	Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Art Building (continued)	Steam UHs	Replace (3) steam UHs with new LTHW UHs.	Route approximately 100ft of new copper HW piping to each UH, with sizes ranging from 1 1/2" 1" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Replace existing UH with new LTHW UH. Provide new control valve.	Provide new LTHW UH.	N/A	The existing steam converter will be left in place as a supplemental and backup source. Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2) x 20 HP 450 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances.	(3) New UH's expected to remain within existing electrical capacity.
	Perimeter Steam to HW Converter HW Convectors HW UHs HW Wall Fin	Deploy a high temperature booster heat pump using the proposed campus LTHW as a source, and creating HTHW for the existing perimeter HW loop. The existing steam converter and pump infrastructure shall remain in place as backup. HW & CHW piping infrastructure and coils will remain unchanged.	N/A maintain HWS/R piping.	N/A	N/A	Provide a (2) SBH200 60 ton modular water to water heat pump located in the existing mechanical room. The combined total is 1450 MBH which will provide for the system load the majority of the year. Connect in sidecar configuration to existing building piping loop. Provide new controls for WWHP and accessories, tie into existing building BAS. Assume (20) physical points & (40) virtual points.		Provide new duplex ECM circulator pump array serving the WWHP, B&G EcoCirc 375XL or similar. Provide dedicated magnetic filter on header. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.)	112 kW new (2x)SBH200 Modular WSHP (2) 3 HP B&G EcoCirc 375XL or similar.
	DHW	Add a new WSHP DHW heater to offset the DHW capacity from the steam converter. The steam converter should be left in place as back up.	New supply and return piping from campus LTHW to new DHW Heat Pump. New DHW piping to integrate storage tank.			Provide new Transom SWH150 WSHPs using the proposed campus LTHW to provide DHW to facility. Provide 100 gallon storage tank. Provide new 20 GPM B&G EcoCirc Pump. Tie into existing DHW system. Existing to remain in place as back up.			25.8 kW power for new Transom SWH150 WSHP. New 1/2 HP Circ Pump

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Sutton Hall	AHU-1 Steam to HW HX VAV RH Coil FTR FCU-1	Deploy a high temperature booster heat pump using the proposed campus LTHW as a source, and creating HTHW for the building. The existing steam converter and pump infrastructure shall remain in place as backup.	N/A	N/A	N/A	Provide a (2) SBH150 45 ton modular water to water heat pump located in the existing mechanical room. The combined total is 1115 MBH which will provide for the system load the majority of the year. Connect in sidecar configuration to existing building piping loop. Provide new controls for WWHP and accessories, tie into existing building BAS. Assume (20) physical points & (40) virtual points.	The existing steam converter will be left in place as a supplemental and backup source. Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Provide new duplex ECM circulator pump array serving the WWHP, B&G EcoCirc 375XL or similar. Provide dedicated magnetic filter on header. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.)	85 kW new (2x)SBH150 Modular WSHP (2) New 3HP Pumps
	DHW	Existing electric DHW to remain in place.				N/A			N/A
Huston Hall	AHU-1	Demolish existing steam piping at AHUs Add steam to HW converter for backup? For AHU 1 & 2 Add (2) new AHU LTHW coils Add (2) new fan walls	Route approximately 1500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 4" at the pump header to 3" & 2.5" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 900 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 16000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 3000MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. (2) New 130 GPM LTHW Pumps	(2) New 7.5 HP Pumps (2) New Fan Walls expected to remain within existing electrical capacity.
	AHU-2			Retrofit new 500 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 9000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-3			N/A Cooing Only	N/A Cooing Only				
	SF-5			N/A Cooing Only	N/A Cooing Only				
	CRAC-1			N/A Cooing Only	N/A Cooing Only				
	DHW	Add a new WSHP DHW heater to offset the DHW capacity from the steam converter. The steam converter should be left in place as back up.	New supply and return piping from campus LTHW to new DHW Heat Pump. New DHW piping to integrate storage tank.			Provide new Transom SWH100 WSHPs using the proposed campus LTHW to provide DHW to facility. Provide 100 gallon storage tank. Provide new 20 GPM B&G EcoCirc Pump. Tie into existing DHW system. Existing to remain in place as back up.			16.7 kW power for new Transom SWH100 WSHP. New 1/2 HP Circ Pump

Appendix C | Renovation Scope by Building

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Communications	AHU	Demolish existing steam piping at AHU Add steam to HW converter for backup? New AHU LTHW coil New fan wall	Route approximately 1000ft of new cast iron & copper 2.5" HW piping to the AHU, with sizes. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 10150 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 400MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install new duplex ECM circulator pump array, with peak design flow of 60gpm. Provide dedicated magnetic filter on header. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.) Pipe in parallel and tie into existing hydronic piping loop.	(2) x 2HP motors with ECM drives New Fan Wall expected to remain within existing electrical capacity.
	DHW	Existing electric DHW to remain in place.				N/A			N/A
Radio / TV Building	AHU-1	Demolish existing steam piping at AHU Add steam to HW converter for backup. New AHU LTHW coil New fan wall	Route approximately 1000ft of new cast iron & copper 2.5" HW piping to the AHU, with sizes. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 10500 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 400MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Provide new duplex ECM circulator pump array serving the WWHP, B&G EcoCirc 375XL or similar .Provide dedicated magnetic filter on header. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.) Pipe in parallel and tie into existing hydronic piping loop.	(2) x 2HP motors with ECM drives New Fan Wall expected to remain within existing electrical capacity.
	DHW	Existing electric DHW to remain in place.				N/A			N/A

370 – Eastern Washington University

2025-23 Biennial Capital Budget Request

Attachments for Reference – Ref 2.1

EWU Geothermal Plant – Node 1 Infrastructure Request

EWU

GeoEco Plant

Integrus Project No. 22423.00
September 10th, 2024

INFRASTRUCTURE REQUEST

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

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TABLE OF CONTENTS

INTRODUCTION

AUTHORITY:

This infrastructure request was authorized by and contracted through Eastern Washington University.

Agency Information	
Agency Name	Eastern Washington University
Agency Code	370
Project Number	40000158
Project Title	GeoEco Plant
Agency Contact	Kris Jeske, Director, Construction and Planning kjeske1@ewu.edu Eastern Washington University 101 Rozell Cheney, WA 99004 P: (509) 359-6323

Cheney Campus 1st GeoEco Plant - Project Site

SECTION 1

PROJECT OVERVIEW

1.0 PROJECT OVERVIEW

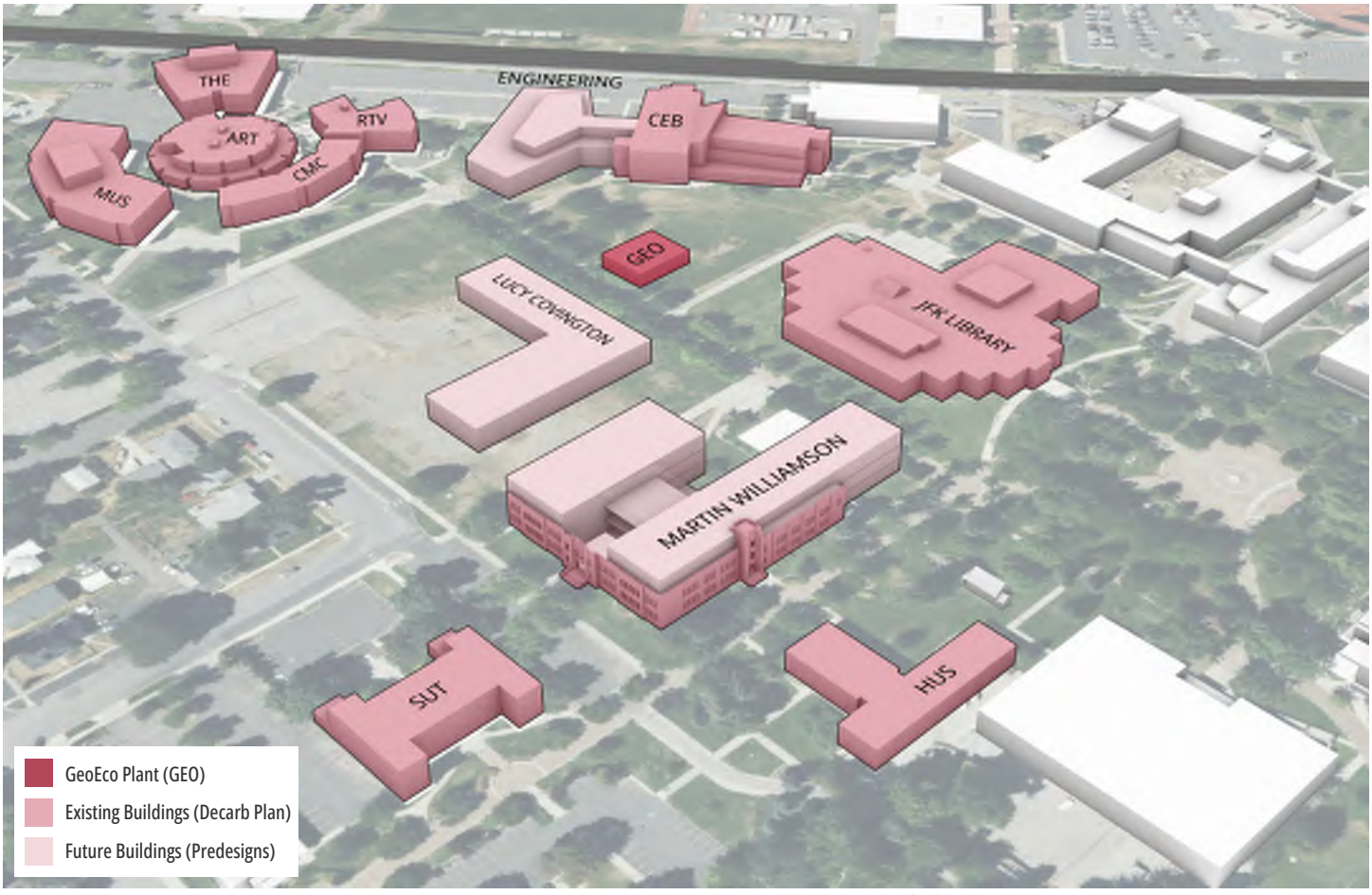
1.1 PROBLEM SUMMARY

Eastern Washington University is working to reduce its Energy Use Intensity (EUI) to meet the Clean Building Performance Standard requirements and to decarbonize their campus operations. The proposed GeoEco Plant is EWU's first step towards shifting away from fossil fuel-based steam boilers toward an alternative all-electric energy source.

EWU is requesting funding for the design and construction of their first GeoEco Plant which will support the transition of over 500,000 square feet of buildings off of campus steam. This proposal outlines the feasibility and benefits of installing a geothermal nodal utility plant to service a portion of the EWU Cheney campus with a new all-electric heating and cooling system.

The GeoEco Plant will be sized to support a total of eleven buildings on the EWU Cheney campus. It is planned to connect to three projects submitted as predesigns for the 2025-2027 capital budget request and to transition eight existing buildings off campus steam. The buildings that will be connected to the new system include Martin Williamson Hall (MAR & WLM), Computing and Engineering Building (CEB) and future Engineering addition, JFK Library, future Lucy Covington Center, Radio/TV Building (RTV), University Theatre (THE), Art Building (ART), Music Building (MUS), Communications Building (CMC), Sutton (SUT), and Huston (HUS).

The existing steam boilers within the central utility plant are the primary contributors of carbon emissions at Eastern Washington University. EWU is the City of Cheney's largest natural gas customer. Transitioning heating loads from these steam boilers to all-electric heating systems will significantly reduce the campus' carbon emissions.



Campus Map of Buildings to be Supported by the GeoEco Plant

1.2 MISSION ALIGNMENT

This project aligns with EWU's newly drafted Institutional Strategic Plan, Comprehensive Campus Master Plan, the Climate Action Plan, and the Climate Resiliency Landscape Master Plan.

Institutional Strategic Plan:
The new Institutional Strategic Plan identifies sustainability as one of six institutional values, expressing a desire to balance the needs of the environment with current and future generations.

Comprehensive Campus Master Plan:
The current Comprehensive Campus Master Plan speaks to reducing the campus carbon footprint and the impact of university operations on the environment through decarbonization and natural resource management.

Climate Action Plan:
The Climate Action Plan states that EWU is committed to becoming a carbon neutral institution and a leader in sustainable practices. It identifies campus targets, approaches, and methods for reducing EWU's campus imprint for energy and carbon.

Decarbonization is a common theme and initiative across EWU's Institutional Strategic Plan, Comprehensive Campus Master Plan, and Climate Action Plan. Transitioning campus infrastructure through the proposed GeoEco Plant will educate current generations and benefit future generations through significant carbon reductions.

1.3 SUMMARY OF ALTERNATIVES

Several comprehensive evaluations of various energy system options to decarbonize the existing fossil fuel fired central steam plant have been conducted. The key studies and their findings, including this infrastructure request, are as follows:

1. EWU Hydrogeological Evaluation:
This study assessed several potential systems for replacing the existing central steam plant, including:

- Air-source heat pumps
- Open-loop ground source heat pump
- Closed-loop ground source heat pump
- Alternative fuels, such as bio-diesel, renewable gas, and green hydrogen
- Emerging zero-carbon steam production technologies
- A centralized open-loop ground source heat pump plant for the entire campus
- Multiple nodal open-loop ground source heat pump plants, initially serving clusters of building with a long-term goal of expanding incrementally across campus
- Building-specific open-loop ground source heat pumps

2. EWU Decarbonization Plan:
Although still in progress, this plan continues to explore and refine options for decarbonizing the campus. It revisits many of the systems and technologies evaluated in the EWU Hydrogeological Evaluation and this GeoEco Plant Infrastructure Request, including:

- Combustion steam options: Renewable natural gas boilers, biomass boilers, hydrogen boilers, co-generation boilers, and carbon capture.
- Non-combustion steam options: Deep geothermal, micro-nuclear, and electrode boilers.
- High-temperature hot water systems: Heat exchangers with high-temperature heat pumps, low-temperature heating water with secondary heat pumps, steam heat pumps, and in-building electric boilers.
- Low-temperature hot water systems: Open-loop geo-exchange, closed-loop geo-exchange, air-to-water heat pumps, surface water exchange, and campus server heat recovery.

3. EWU GeoEco Plant Infrastructure Request:
This study and infrastructure request evaluated potential configurations and distribution methods for an open-loop ground source heat pump system to provide all-electric heating across the university campus as recommended by the EWU Hydrogeological Evaluation and EWU Decarbonization Plan. Key findings and consideration include:

- Hybrid Nodal Plant Concept: The EWU Hydrogeological Evaluation supports a hybrid nodal plant setup, distributing groundwater to buildings with heat pumps and backup systems located within each building, requiring additional square footage within each connected building for equipment installation.
- GeoEco Plant Concept: An alternative approach to the Hybrid Nodal Plant Concept, this centralized plant would house all essential equipment and infrastructure, distributing low-temperature heating water and chilled water to buildings without the need for additional equipment inside each building, reducing space and renovation needs.
- Piping Distribution: The study explored the routing of new piping systems for groundwater, heating water, and chilled water, recommending the installation of direct-burial, double-wall piping to extend the lifespan of these systems while minimizing capital costs by avoiding expansion of the existing campus tunnel system.
- Energy Efficiency: In addition to the efficiency of a ground source heat pump system, the existing chilled water system can be leveraged to enable energy trading between buildings, optimizing energy use and reducing installation costs by repurposing current infrastructure.
- Educational Opportunity: A strategically located GeoEco Plant near the engineering and science buildings will serve as an educational tool, offering a visible example of sustainable energy practices. This setup aims to engage students, faculty, and the community in understanding how EWU is reducing operational carbon emissions in alignment with Washington State goals.

Recommendation: The study recommends moving forward with the GeoEco Plant concept, emphasizing its benefits, including centralized maintenance, minimized impact on existing buildings, cost-effective piping installation, and enhanced educational opportunities.

1.4 SUMMARY OF PROPOSED ALTERNATIVE

EWU is requesting funding for the design and construction of their first GeoEco Plant which will support the transition of over 500,000 square feet of buildings off of the existing fossil-fueled campus steam system to an all-electric open-loop ground source heat pump system. The following is a summay of the proposed alternative in addition to the findings and considerations included in the preceeding Summary of Alternatives.

SYSTEM

The proposed conversion to an all-electric heating system for the evaluated buildings would employ a single-pass open-loop ground-source heat pump system, as detailed in the January 8, 2024, EWU Campus Hydro-Geological Assessment as prepared by Landau and MSI. This new central utility plant, referred to as the GeoEco Plant (GEP), is designed to be highly efficient in generating all-electric heating and cooling water.

One significant limitation of single-pass ground-source heat pump systems is that they typically produce heating water at temperatures up to approximately 125°F. Many existing buildings at EWU were originally designed for higher temperature heating water (160-180°F), posing challenges in converting these systems to utilize the lower temperature water generated by geothermal heat pumps.

The replacement, addition, and new construction projects explored offer opportunities to design systems that utilize low-temperature heating water. Existing buildings not currently addressed in the predesign process would undergo future conversion projects to adapt to the new low temperature heating water system.

The method of distributing the new low-temperature heating water (LTHW) system was carefully considered. Currently, the campus uses a tunnel system for steam and chilled water distribution. Due to physical constraints, it is unlikely that the new LTHW piping could fit within the existing tunnels. Additionally, the high initial first costs of enlarging the existing tunnel or adding a new tunnel system outweigh the long-term benefits. Consequently, a new direct bury piping network will be used to distribute LTHW across the campus, connecting the GEP to this initial group of buildings and future GEP nodes. The new GEP will connect to and utilize the existing chilled water distribution system currently distributed across campus through the existing tunnel system. This new open-loop ground-source heat pump system will offer a more efficient cooling system for the campus when compared to the existing central chilled water plant and would be utilized as the first stage of cooling, further lowering the campus energy use and carbon emissions attributed to electricity use.

The feasibility of providing multiple connections to the Cheney aquifer for geothermal energy to service the entirety of EWU's campus has been validated based on other wells in the region. The EWU Campus Hydro-Geological Assessment completed on January 8, 2024, supports the potential for decarbonizing EWU's existing natural gas steam system through several GeoEco Plants. This project could serve as the first phase of a broader decarbonization effort.

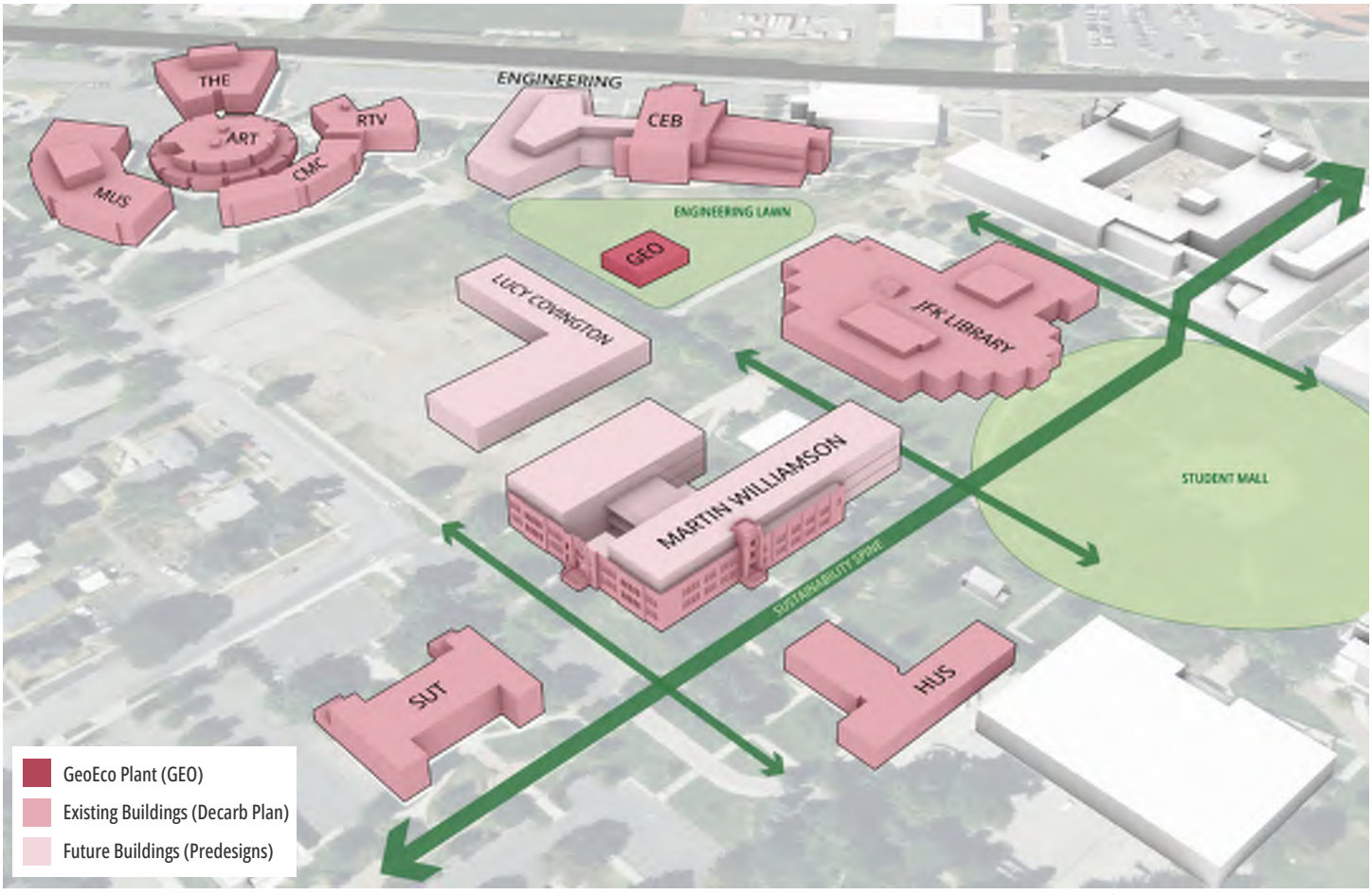
The proposed GeoEco Plant (GEP) would be designed to service at least the eleven buildings studied in this report, which encompass over 500,000 square feet of high-energy intensity Arts, Engineering, and Academic spaces. Over a 50-year period, as outlined in the Energy Life Cycle Cost Analysis (ELCCA), the GEP would result in a CO2 reduction equivalent to removing approximately 9,200 cars from the road, or about 46,000 metric tons of CO2.

LOCATION

The GeoEco Plant's proposed location was selected for its central relationship to the buildings that will connect to it, but also for its presence near the heart of the campus. By locating the plant just off the emerging Sustainability Spine and near the Engineering Lawn of the Computing and Engineering Building it offers the opportunity to use this new infrastructure as a tool to educate students, faculty, and the community on the shift in campus infrastructure and engineering technologies that are making decarbonization at a campus scale possible.

The building will be designed to not only functionally support the heating and cooling needs of this portion of campus but to express EWU's values and steps toward decarbonization to students, faculty, the local Cheney community, and others who may be interested in how the campus is reshaping their energy generation systems.

In addition to supporting EWU's carbon reduction goals and offering educational opportunities, this GeoEco Plant will be a resource and example for other institutions in Eastern Washington and Idaho that may be interested in a similar model to reduce carbon emissions in their campus energy generation infrastructure.



Campus Map of Connections to the GeoEco Plant

1.5 PROJECT HISTORY

EWU has performed a number of studies and evaluations to find the most effective approach to shifting away from their long-time fossil fueled campus steam.

STUDIES & EVALUATIONS

The following studies demonstrate the feasibility of this proposal and impact it will have on EWU's decarbonization.

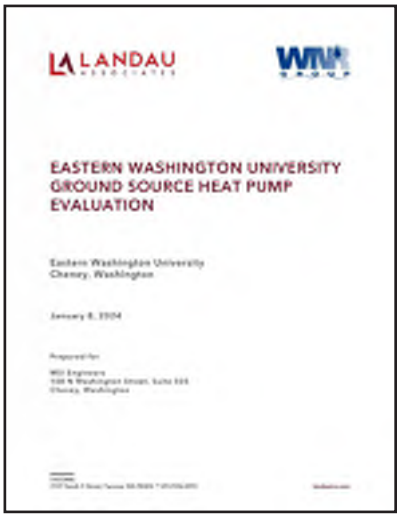
Completed Studies:
EWU Ground Source Heat Pump Evaluation
EWU Hydrogeological Assessment
Martin Williamson Hall Predesign
Engineering Building Predesign
Lucy Covington Leadership House Predesign
EWU Geo Eco Plant Infrastructure Request

In-Progress Studies:
EWU Decarbonization Plan

All completed and in-progress studies have been included in the appendix of this document for reference. The following are brief summaries and the recommendations of each study demonstrating support of the proposed new GeoEco Plant.

EWU Ground Source Heat Pump Evaluation:
Completed in January of 2024, this evaluation outlines requirements for permitting and water rights, alignment of anticipated aquifer yield to necessary capacity, sufficient thermal capacity of groundwater, and the ability to maintain groundwater temperatures long-term.

Recommendation: The feasibility of providing multiple connections to the Cheney aquifer for geothermal energy to service the entirety of EWU's campus has been validated based on other wells in the region. This study supports the potential for decarbonizing EWU's existing natural gas steam system through several open-loop ground source heat pumps. Further validation is expected from a test well, which is currently in progress.


LA LANDAU ASSOCIATES

EASTERN WASHINGTON UNIVERSITY
GROUND SOURCE HEAT PUMP
EVALUATION

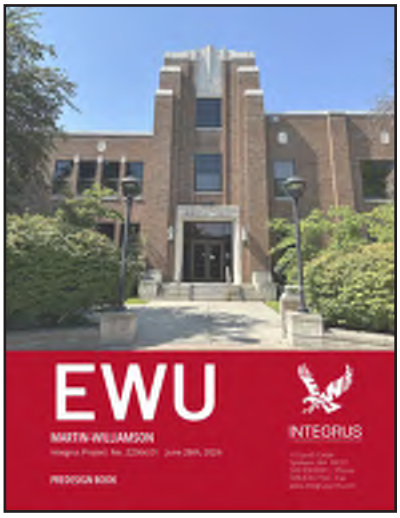
GSHP Evaluation - See Appendix 2.3

EWU Hydrogeological Assessment:
Completed in January of 2024, this assessment demonstrates the feasibility and economic viability of converting EWU's district heating and cooling systems to Ground-Source Heat Pump systems (GSHPs). It explored three different case studies including the implementation of the systems at a building scale, district scale (four buildings), and a campus scale (all 45 buildings).

> **Recommendation:** The study recommended the use of an open-loop ground source heat pump system, utilizing a hybrid nodal plant concept via a combination of nodal plants to distribute groundwater to buildings, with heat pumps located within the serviced buildings. This approach was validated through the EWU Hydrogeological Evaluation.

Hydrogeological Assessment - See Appendix 2.4

Martin Williamson Hall Predesign:
Completed in June of 2024 and submitted for the 2025-2027 capital budget request proposed an intensive renovation of Martin Williamson Hall. During the pre-design process, three energy system variations were explored: the Base Package, the High-Performance Package, and the Net Zero Package. These packages provided a pathway to achieving net-zero energy use for the building, with each option's life cycle cost evaluated. A key assumption in this report is that all energy systems would connect to a future fossil-fuel-free heating source—specifically, an open-loop ground source heat pump system, referred to as the GeoEco Plant Concept.



Martin Williamson Predesign - See Appendix 2.5

Engineering Building Predesign:
Completed in June of 2024 and submitted for the 2025-2027 capital budget request proposed the renovation and major addition for the Computing and Engineering Building. The pre-design process was utilized to assess both renovation and new construction options, aiming to enhance the functionality of the Computing and Engineering Building while also reducing its operational carbon footprint. This report focuses on integrating all new and existing energy systems with a future fossil-fuel-free heating source. The pre-design evaluated connecting to the future open-loop ground source heat pump system, known as the GeoEco Plant Concept.

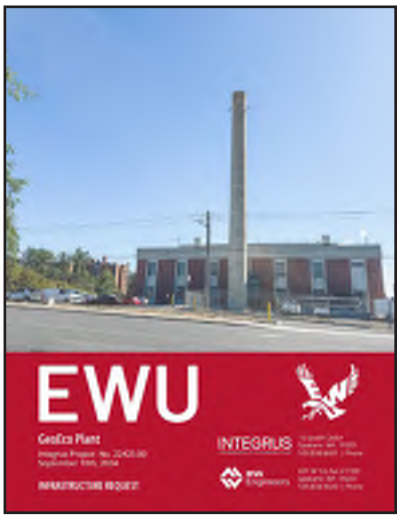
Engineering Building Predesign - See Appendix 2.6

Lucy Covington Leadership House Predesign:
Completed in June of 2024 and submitted for the 2025-2027 capital budget request proposed the new construction of the Lucy Covington Leadership House. The pre-design phase for the new construction of Lucy Covington prioritized identifying energy systems that would significantly reduce the building's operational carbon footprint. This report highlights that all heating and cooling needs are expected to be met by connecting to a new open-loop ground source heat pump system, referred to as the GeoEco Plant Concept.

Lucy Covington Leadership House Predesign - See Appendix 2.7

EWU GeoEco Plant Infrastructure Request:
Completed in September of 2024, this study and infrastructure request evaluated potential configurations and distribution methods for an open-loop ground source heat pump system to provide all-electric heating across the campus as recommended by the EWU Hydrogeological Evaluation and EWU Decarbonization Plan.

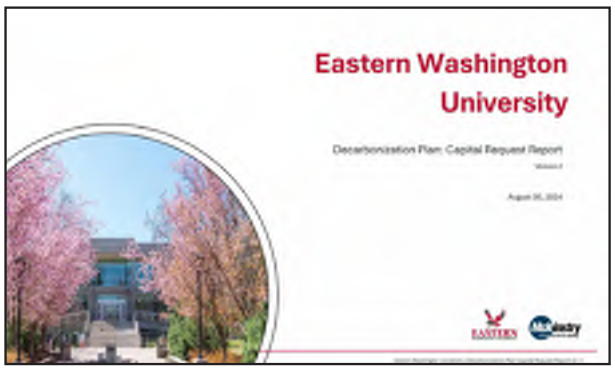
> **Recommendation:** The study recommends moving forward with the GeoEco Plant concept, emphasizing its benefits, including centralized maintenance, minimized impact on existing buildings, cost-effective piping installation, and enhanced educational opportunities.



GeoEco Plant Request - This Document

EWU Decarbonization Plan (In-Progress):
In-progress to be completed June 2025, this plan identifies the in-building MEP system conversions needed to connect nine existing buildings to the proposed GeoEco Plant. Upon completion it will identify how the campus can expand the first GeoEco Plant concept to implement decarbonization campus-wide to meet EWU's decarbonization goals and House Bill 1390's madate to remove fossil fuels from campus heating systems by 2040. Energy efficiency measures have been identified and priced for inclusion in the 2025-2027 capital request. These measures should be implemented in tandem with the building-level decarbonization measures. Not only do they contribute to meeting the campus-wide EUI target mandated by HB 1390, but they also reduce load on the new geothermal system.

> **Recommendation:** The plan currently recommends constructing GeoEco Plants over several biennia, this request representing the first.



Decarbonization Plan - See Appendix 2.8

1.6 BUDGET SUMMARY

MAJOR ASSUMPTIONS

A third-party cost estimation and C-100 were prepared for this request. The cost estimation assumes an approach to building and equipment organization that supports the vision of EWU that this GeoEco Plant provide a teachable moment for the campus and community. This project assumes a single phase approach with the building, wells, equipment, and pathway all being designed and constructed in a single phase.

The estimate assumes a well size and quantity that is based on the information uncovered and documented in the EWU Ground Source Heat Pump Evaluation and EWU Hydrogeological Assessment. The wells represents the majority of the construction cost for the project and their size and quantity will be confirmed during design and upon completion of the test well which EWU has underway.

SUMMARY TABLE

The following tables outline the cost summary of the proposed infrastructure request. The complete C-100 document and associated cost estimate are included in the Appendix as 2.1 and 2.2.

Summary Construction Budget	
	TOTAL
G10 - Site Preparation	$588,165
G20 - Site Improvements	$0
G30 - Site Mechanical Utilities	$26,152,397
G40 - Site Electrical Utilities	$1,747,020
G60 - Other Site Construction	$0
Site Work Subtotal	**$28,487,582**
A10 - Foundations	$281,139
A20 - Basement Construction	$0
B10 - Superstructure	$670,110
B20 - Exterior Closure	$494,101
B30 - Roofing	$303,798
C10 - Interior Construction	$0
C20 - Stairs	$0
C30 - Interior Finishes	$0
D10 - Conveying	$0
D20 - Plumbing Systems	(with site mechanical)
D30 - HVAC Systems	(with site mechanical)
D40 - Fire Protection Systems	$46,750
D50 - Electrical Systems	(with site electrical)
F10 - Special Construction	$0
F20 - Selective Demolition	$0
E10 - CFCI Equipment	$0
General Requirements	$2,559,711
General Conditions	$3,325,796
OH&P + Insurance	$3,118,689
Facility Construction Subtotal	**$10,800,094**
Unesclated MACC	**$39,287,676**
Escalated MACC	**$42,097,636**

Summary Budget		
	Total Cost	Total Cost - Escalated
Acquisition	$0	$0
Consultants	$9,837,743	$10,558,367
Construction	$46,820,405	$50,236,428
Equipment	$21,780	$23,701
Artwork	$318,523	$318,523
Project Admin	$2,652,121	$2,886,039
Other Costs	$0	$0
Total Project	**$59,650,572**	**$64,023,058**

1.7 SCHEDULE & NEXT STEPS

This proposed GeoEco Plant will be the first step for EWU to transition away from fossil fuel generated steam toward an all-electric geothermal heat pump system that advances EWU's decarbonization initiatives. The GeoEco Plant concept is a model that could eventually be applied to the entire campus in a scalable manner that supports the future potential of energy exchange across multiple geothermal nodes. However, should new technologies that are more efficient or economical be developed in the future it also offers a flexibility for change and campus diversification.

The immediate next step for advancing the GeoEco Plant concept involves confirming the assumptions of the EWU Ground Source Heat Pump Feasibility Study by developing a test well to determine the availability and characteristics of the aquifer beneath the campus. EWU is currently preparing the necessary documentation to permit this initial test well. The findings from this test well will provide essential information for designing the GEP. The design team, composed of hydrogeologists, civil engineers, mechanical engineers, electrical engineers, and architects, will utilize this data to proceed with the project.

In parallel, the ongoing refinement of the decarbonization plan, expected to be finalized by 2025, will continue. This refinement will involve evaluating additional options and developing a comprehensive strategy for EWU to meet the requirements of Washington State's House Bill 1390, aiming for carbon neutrality by decarbonizing the central utility plant. The plan will outline key pathways for achieving these goals, including the potential expansion of GeoEco Plants to service other areas of the campus and implementing building-specific measures to enhance energy efficiency and facilitate connections to the GEP.

As part of the 2025-2027 capital request, the implementation of other projects, such as the renovation and connection of Martin Williamson Hall, the Computing and Engineering Building, and Lucy Covington Hall to the GEP, will further reduce the university's reliance on its existing fossil fuel-fired steam heating plant, moving EWU closer to its decarbonization goals.

The below project schedule depicts the project phases and anticipated completion dates.

Project Phase	Date of Completion
Design	July-26
Bid/ Award/ Contracting	August-26
Building Construction	November-27
Well Construction *	December-27
Commissioning & Startup	December-27

1.8 DELIVERY METHOD & MANAGEMENT

Eastern Washington University's Construction and Planning Division will manage all aspects of the project. They will work with the architect/engineer(A/E) consultant design team throughout the design, bidding, construction, and commissioning, and warranty phases. The Construction and Planning Division will oversee the required contractual administration for the project architect/engineer (A/E) consultants and public works contractors. The Construction and Planning team is responsible for working closely with the university's administration, the design team, and the contractors to ensure the project is delivered on time and within budget.

The project will use the Design-Bid-Build (DBB) project delivery method per RCW 39.04 – Public works. This is the delivery method that is most frequently used by Eastern Washington University. The school is familiar and experienced with this delivery method and has found that it has been the most cost-effective by promoting competitive bidding between interested general contractors and subcontractors.

1.9 IMPACT WITHOUT INFRASTRUCTURE PROJECT

Securing funding for the GeoEco Plant (GEP) is crucial for EWU to take a significant step toward campus decarbonization and reducing its reliance on fossil fuels for heating and domestic hot water generation, in alignment with the requirements of Washington State's House Bill 1390. Additionally, the construction of the GEP, along with planned renovations, upgrades, and new construction projects, will substantially lower the campus' energy use index (EUI). This reduction is essential for bringing EWU into compliance with the Washington Clean Building Performance Standard. Immediate action to reduce campus carbon emissions is imperative, and any delay in funding could hinder or even prevent this section of the campus from transitioning to a fossil-fuel-free heating system, jeopardizing both environmental and regulatory goals.

The preferred alternative of the three predesigns EWU submitted for the 2025-2027 capital budget request all proposed connecting to the GeoEco Plant to meet the Clean Building Performance Standard requirements and advance EWU's decarbonization initiatives. Without the GeoEco Plant these projects will not be feasible or will need to shift their intended infrastructure away from low carbon renewable sources and back to the existing fossil fueled campus steam system.

Position	Time On Project	Duties:
Director of Construction & Planning	15%	Oversees project planning and implementation for campus
Sr. Project Manager	85%	Supervises construction implementation and project coordination
Construction Project Coordinator	45%	Assists with project coordination for campus
Office Assistant	15%	Assists with administrative tasks for project
Totals	**160%**	

SECTION 2

APPENDICES

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washingtonn University
Project Name	GEP Building
OFM Project Number	40000158

Contact Information	
Name	Kris Jeske - EWU Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	5,500	MACC per Gross Square Foot	$7,143
Usable Square Feet	0	Escalated MACC per Gross Square Foot	$7,654
Alt Gross Unit of Measure			
Space Efficiency	0.0%	A/E Fee Class	A
Construction Type	Heating and power plant	A/E Fee Percentage	8.02%
Remodel	No	Projected Life of Asset (Years)	50
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	No
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney
Contingency Rate	5%		
Base Month (Estimate Date)	September-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	August-24	Predesign End	September-24
Design Start	August-25	Design End	July-26
Construction Start	August-26	Construction End	December-27
Construction Duration	16 Months		

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Project Cost Summary

Total Project	$59,650,571	Total Project Escalated	$64,023,057
		Rounded Escalated Total	$64,023,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$64,023,000**
Next Biennium	**$0**
Out Years	**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$2,379,167		
Extra Services	$1,065,000		
Other Services	$1,598,901		
Design Services Contingency	$4,794,675		
Consultant Services Subtotal	**$9,837,743**	**Consultant Services Subtotal Escalated**	**$10,558,367**

Construction			
Maximum Allowable Construction Cost (MACC)	$39,287,676	Maximum Allowable Construction Cost (MACC) Escalated	$42,097,636
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$3,705,684		$4,032,526
Non-Taxable Items	$0		$0
Sales Tax	$3,827,045	Sales Tax Escalated	$4,106,266
Construction Subtotal	**$46,820,405**	**Construction Subtotal Escalated**	**$50,236,428**

Equipment			
Equipment	$20,000		
Sales Tax	$1,780		
Non-Taxable Items	$0		
Equipment Subtotal	**$21,780**	**Equipment Subtotal Escalated**	**$23,701**

Artwork			
Artwork Subtotal	**$318,523**	**Artwork Subtotal Escalated**	**$318,523**

Agency Project Administration			
Agency Project Administration Subtotal	$2,652,121		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$2,652,121**	**Project Administration Subtotal Escalated**	**$2,886,039**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$59,650,571**	Total Project Escalated	**$64,023,057**
		Rounded Escalated Total	**$64,023,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0		$0		**$0**
Consultant Services					
Consultant Services Subtotal	$10,558,367		$10,558,367		**$0**
Construction					
Construction Subtotal	$50,236,428		$50,236,428		**$0**
Equipment					
Equipment Subtotal	$23,701		$23,701		**$0**
Artwork					
Artwork Subtotal	$318,523		$318,523		**$0**
Agency Project Administration					
Project Administration Subtotal	$2,886,039		$2,886,039		**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$64,023,057**	**$0**	**$64,023,058**	**$0**	**-$1**
	$64,023,000	**$0**	**$64,023,000**	**$0**	**$0**
	Percentage requested as a new appropriation		**100%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Insert Row Here

What has been completed or is underway with a previous appropriation?
Insert Row Here

What is planned with a future appropriation?
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$0				
Appraisal and Closing	$0				
Right of Way	$0				
Demolition	$0				
Pre-Site Development	$0				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis	$0			
Environmental Analysis	$0			
Predesign Study	$0			
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0299**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$2,379,167			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$2,379,167**	**1.0455**	**$2,487,419**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$150,000			
Geotechnical Investigation	$25,000			
Commissioning	$250,000			
Site Survey	$25,000			
Testing	$98,000			
LEED Services	$85,000			
Voice/Data Consultant	$60,000			
Value Engineering	$70,000			
Constructability Review	$82,000			
Environmental Mitigation (EIS)				
Landscape Consultant	$50,000			
Cost Estimation	$65,000			
SEPA	$10,000			
ELCCA	$35,000			
LCCA	$40,000			
Renderings	$20,000			
Sub TOTAL	**$1,065,000**	**1.0455**	**$1,113,458**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,068,901			31% of A/E Basic Services
HVAC Balancing	$350,000			
Staffing				
Hydrogeologist	$145,000			
Conformed and Record Drawings	$35,000			
Sub TOTAL	**$1,598,901**	**1.0882**	**$1,739,924**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$252,153			
Risk Contigency	$4,542,522			

Sub TOTAL	**$4,794,675**	**1.0882**	**$5,217,566**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$9,837,743**		**$10,558,367**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$588,165			
G20 - Site Improvements	$0			
G30 - Site Mechanical Utilities	$26,152,397			
G40 - Site Electrical Utilities	$1,747,020			
G60 - Other Site Construction	$0			
Other				
Insert Row Here				
Sub TOTAL	**$28,487,582**	**1.0652**	**$30,344,973**	
2) Related Project Costs				
Offsite Improvements	$0			
City Utilities Relocation	$0			
Parking Mitigation	$0			
Stormwater Retention/Detention	$0			
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0652**	**$0**	
3) Facility Construction				
A10 - Foundations	$281,139			
A20 - Basement Construction	$0			
B10 - Superstructure	$670,110			
B20 - Exterior Closure	$494,101			
B30 - Roofing	$303,798			
C10 - Interior Construction				
C20 - Stairs	$0			
C30 - Interior Finishes	$0			
D10 - Conveying	$0			
D20 - Plumbing Systems	w/ site mechanical			
D30 - HVAC Systems	w/ site mechancial			
D40 - Fire Protection Systems	$46,750			
D50 - Electrical Systems	w/ site electrical			
F10 - Special Construction	$0			
F20 - Selective Demolition	$0			
General Conditions	$3,325,796			
General Requirements	$2,559,711			
OH&P + Insurance	$3,118,689			
Sub TOTAL	**$10,800,094**	**1.0882**	**$11,752,663**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$39,287,676**		**$42,097,636**	
	$7,143		*$7,654 per GSF*	

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7) Owner Construction Contingency				
Allowance for Change Orders	$1,964,384			
Market Volatility	$1,741,300			
Insert Row Here				
Sub TOTAL	**$3,705,684**	**1.0882**	**$4,032,526**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0882**	**$0**	
9) Sales Tax				
Sub TOTAL	**$3,827,045**		**$4,106,266**	
CONSTRUCTION CONTRACTS TOTAL	**$46,820,405**		**$50,236,428**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings	$20,000				
F10 - Special Construction	$0				
Other					
Insert Row Here					
Sub TOTAL	**$20,000**		**1.0882**	**$21,764**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.0882**	**$0**	
3) Sales Tax					
Sub TOTAL	**$1,780**			**$1,937**	
EQUIPMENT TOTAL	**$21,780**			**$23,701**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$318,523				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$318,523**		**NA**	**$318,523**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$2,652,121				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$2,652,121**		**1.0882**	**$2,886,039**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs	$0				
Hazardous Material Remediation/Removal	$0				
Historic and Archeological Mitigation	$0				
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.0652**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
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Tab B. Consultant Services
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Tab C. Construction Contracts
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Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
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SECTION 2

APPENDICES

2.2 COST ESTIMATE REPORT

Eastern Washington University
GEP Building

Eastern Washington University
GEP Building

Prepared for:

Ty Miller
Integrus
10 S Cedar St
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Prepared by:

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Eastern Washington University
GEP Building

Contents

Eastern Washington University
GEP Building

Overall Summary

TOTAL CONSTRUCTION COST	SF	$/SF	TOTAL
Geothermal Building	5,500	8,774.56	48,260,064

Eastern Washington University
GEP Building

Scope of Work

Project Scope Description

The project comprises cost planning for the Eastern Washington University campus GEP Building. The proposed design includes expanding the utilidor; a 5,500 mass timber and curtainwall building and geo-thermal equipment and bore field.

Project Design

The cost report is based on the following information:

- Memo from MW Engineers dated July 10, 2024
- 2024-07-10 GEP Conceptual Site Plan
- Conversations with Integrus

Procurement

It is anticipated that the project will be delivered by Design Bid Build with a minimum of 4 to 5 qualified General Contractors to maintain competitive pricing. The start date is anticipated for Q2 2025.

Eastern Washington University
GEP Building

Basis of Estimate

Assumptions and Clarifications

This estimate is based on the following assumptions and clarifications:

1 The estimate is based on the drawings listed in the scope of work and conversations with the Architects and Engineers.
2 Standard working hours.
3 Prevailing wages apply.
4 Owners soft costs are not included.
5 Sales tax is not included.

Eastern Washington University
GEP Building

Geothermal Building

	Quantity	Unit	Rate	Total
CONTROLS				
Area of Work	5,500	SF		
Floor Height, Average	17	LF		
Perimeter	310	LF		
Geothermal Building				
Civil	**5,500**	**SF**	**106.94**	**588,165**
Utility tunnel expansion	150	LF		
Saw cut	96	LF	20.00	1,920
Clean and grub	1,200	SF	2.30	2,760
Trench w/ trench safety	311	CY	80.00	24,889
Demo existing tunnel wall for new extension	1	LS	5,000.00	5,000
Base aggregates	67	CY	55.00	3,667
Reinforced CIP utility tunnel expansion	156	CY	1,290.00	200,667
Backfill w/ stockpile	117	CY	33.00	3,850
Topsoil and planting	1,200	SF	8.50	10,200
Building				
Excavation	306	CY	38.00	11,611
Base aggregates	102	CY	55.00	5,602
Trench and cover primary feeder	350	LF	480.00	168,000
Site prep for bore fields	1	LS	150,000.00	150,000
Structure	**5,500**	**SF**	**318.03**	**1,749,147**
Footings				
Continuous footings	46	CY	910.00	41,793
Spread footings	32	CY	1,050.00	33,600
SOG 8"	5,500	SF	18.64	102,520
Utilidor access ways (frame and panel)	282	SF	88.00	24,816
Housekeeping pads	2,000	SF	22.00	44,000
1.5' Stem wall	465	SF	74.00	34,410
Timber package				
GLU lam beams and columns	430	SF	38.00	16,340
CLT - visual grade	8,250	SF	32.00	264,000
Hardware	5,500	SF	32.50	178,750
Detailing and delivery	5,500	SF	15.00	82,500
Wood framing- infill	5,500	SF	21.00	115,500
Hold-downs	78	EA	168.00	13,020
Exterior wall assembly				
Standing seam metal panel	4,288	SF	70.00	300,160
Insulation	4,288	SF	6.10	26,157
Weather/air barrier	4,288	SF	6.25	26,800
Curtainwall	982	SF	112.00	109,984

Eastern Washington University
GEP Building

Geothermal Building

	Quantity	Unit	Rate	Total
Coiling door	1	EA	15,000.00	15,000
Roof assembly				
TPO	5,500	SF	23.80	130,900
Taper insulation, spray foam	5,500	SF	7.11	39,105
Vapor barrier	5,500	SF	2.50	13,750
Steel PV frame, finished	8.53	TN	12,250.00	104,514
Roof hatch and ladder	1	EA	4,338.00	4,338
Flashing and coping	722	LF	15.50	11,191
Doors w/ controlled access	4	EA	4,000.00	16,000
Mechanical	**5,500**	**SF**	**4,763.48**	**26,199,147**
Note: Future piping and equipment is not included.				
Demo- existing 10" pipe	1,600	LF	55.00	88,000
Relocation of existing utilities, allowance	1	LS	##########	200,000
10" HPS piping in utilidor connected to existing	150	LF	210.00	31,500
4" Condensate piping	150	LF	88.00	13,200
14" Chilled water, insulated	1,600	LF	168.00	268,800
18" LTHW S/R	3,000	LF	140.00	420,000
18" Ground water piping	6,000	LF	132.00	792,000
Heat recovery chiller 165 TN - multistack	9	EA	358,000.00	3,222,000
Heat exchangers 30,000 MBH	2	EA	1,000,000.00	2,000,000
Heat exchangers GW - 4,000 GPM	1	EA	39,300.00	39,300
Heat exchangers CW - 3000 GPM	1	EA	36,500.00	36,500
Valves, tanks and hydronic accessories	1	LS	85,000.00	85,000
Fan coil unit, 3000 CFM	1	EA	4,250.00	4,250
Air separators	4	EA	6,592.00	26,368
Exhaust fan, 3500 CFM	1	EA	3,650.00	3,650
Air/in out	2	EA	192.00	384
VFDs	14	EA	15,620.00	214,775
Venturis	8	EA	31,040.00	248,320
Rooftop ventilators	2	EA	4,000.00	8,000
Ground water filter vessel	2	EA	35,000.00	70,000
CW expansion tank	3	EA	5,965.00	17,895
Chilled water expansion tank	2	EA	8,500.00	17,000
Campus chilled water filter vessel	2	EA	15,600.00	31,200
Glycol feeder	1	EA	8,800.00	8,800
Storage tanks				
250,000 gallon buried, insulated, LTHW thermal storage tank	1	EA	158,000.00	158,000
250,000 gallon buried, insulated, CW thermal storage tank	1	EA	158,000.00	158,000
Pumps				
HRC condenser water: (3) 1500 GPM at 30 HP	3	EA	12,825.00	38,475
HRC chilled water primary: (3) 1250 GPM at 30 HP	3	EA	11,255.00	33,765
Chilled water campus/secondary: (3) 950 GPM at 25 HP	3	EA	10,450.00	31,350

Eastern Washington University
GEP Building

Geothermal Building

	Quantity	Unit	Rate	Total
HRC LTHW primary: (3) 1,200 GPM at 30 HP	3	EA	11,290.00	33,870
HRC LTHW campus/secondary: (3) 1,200 GPM at 30 HP	3	EA	11,325.00	33,975
Steam HX primary: (3) 1,200 GPM at 30 HP	3	EA	11,350.00	34,050
Distribution piping, valves and ancillaries	1,450	LF	78.00	113,100
LTHW: 2,400 GPM; 12"Ø	200	LF	260.00	52,000
Chilled water: 3,000 GPM; 14"Ø	180	LF	304.00	54,720
Condenser water: 4,000 GPM; 16"Ø	180	LF	330.00	59,400
Valves and ancillaries	1	LS	50,000.00	50,000
Geofield				
8" bore injection and extraction wells -1075 LF deep	10	EA	1,650,000.00	16,500,000
Well pump 200 HP	5	EA	18,300.00	91,500
Controls	5,500	SF	156.00	858,000
TAB	400	HR	130.00	52,000
Electrical	**5,500**	**SF**	**317.64**	**1,747,020**
Transformer	1	EA	162,000.00	162,000
MSB	4,000	AMP	65.00	260,000
Feeders and connections, primary service	450	LF	433.00	194,850
60 AMP equipment feeders	18	EA	2,400.00	43,200
Distribution panels - 400 AMP w/ enclosures	3	EA	7,720.00	23,160
Distribution panels - 200 AMP w/ enclosures	2	EA	7,650.00	15,300
Submetering	2	EA	2,450.00	4,900
Secondary transformer 45KVA	1	EA	51,200.00	51,200
ATS	1	EA	42,760.00	42,760
Generator	250	kW	820.00	205,000
Generator enclosure, NEMA 3R	1	LS	38,700.00	38,700
NEMA 3 tap box and docking for portable generators	1	LS	56,000.00	56,000
Lighting and controls	5,500	SF	21.50	118,250
Emergency light invertor, 500 Watts	1	EA	890.00	890
Fire alarm	5,500	SF	3.00	16,500
Fiber optic cabinet	1	EA	8,790.00	8,790
Fiber optic connections to MDF	350	LF	105.00	36,750
IT Rack	1	EA	6,855.00	6,855
Solar photovoltaic system w/frame	65	kW	3,345.00	217,425
Service and distribution for well pump remote from building				
Primary service connection, 1000kVA transformer	1	EA	162,000.00	162,000
1000AMP MSB	1,000	AMP	65.00	65,000
Pump connections, 400 AMP	2	EA	5,000.00	10,000
Distribution panel- 150 AMP w/enclosure	1	EA	7,490.00	7,490

Eastern Washington University
GEP Building

Geothermal Building

	Quantity	Unit	Rate	Total
Direct Construction Cost	5,500	SF	5,506.09	30,283,480
Design Contingency	15.00%			4,542,522
Contractor Contingency	5.00%			1,741,300
General Requirements	7.00%			2,559,711
General Conditions	8.50%			3,325,796
Office Overhead & Profit	5.50%			2,334,904
Bonds & Insurance	1.75%			783,785
Permits & Fees				*By Owner*
Construction Cost Before Escalation	5,500	SF	8,285.73	45,571,498
Escalation to Start Date June 25	5.90%			2,688,566
Construction Cost Including Escalation	5,500	SF	8,774.56	48,260,064

SECTION 2

APPENDICES

2.3 EWU GROUND SOURCE HEAT PUMP EVALUATION

EASTERN WASHINGTON UNIVERSITY GROUND SOURCE HEAT PUMP EVALUATION

Eastern Washington University
Cheney, Washington

January 8, 2024

Prepared for

MSI Engineers
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Ground Source Heat Pump Evaluation
Eastern Washington University
Cheney, Washington

This document was prepared by, or under the direct supervision of, the technical professionals noted below.

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Principal Hydrogeologist/Owner WNR Group

Date: January 8, 2024
Project No.: 2222001.010
File path: \\tacoma3\project\2222\R\Landau WNR_EWU GSHP Hydrogeologic Evaluation_FINAL_1.8.2024
Project Coordinator: KJG

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EXECUTIVE SUMMARY

This report documents a preliminary hydrogeologic evaluation by Landau Associates, Inc. (Landau) of open-loop ground source heat pump (GSHP) well field alternatives for the Eastern Washington University (EWU) campus in Cheney, Washington. Landau has prepared the evaluation in partnership with Water and Natural Resources Group, Inc. (WNR) in support of MSI Engineers' (MSI) assessment of the feasibility and economic viability of converting EWU's heating and cooling system to GSHPs. Landau and WNR's scope of work is to develop a hydrogeologic conceptual model, including hydraulic and thermal modeling, and conduct a water rights and permitting evaluation. Landau and WNR completed assessment of three well field operation case study scenarios provided by MSI. Each case study consists of an injection well(s) and a pumping well(s) at various well spacing and pumping rates. A project vicinity map is presented on Figure 1. The scope of the evaluation was limited to a desktop study of the existing literature and available aquifer testing data for the area.

The hydrogeologic evaluation addressed three primary questions: 1) what are the permitting and water rights requirements for GSHP well field installation, 2) is aquifer yield sufficient to meet system capacity, and 3) can the aquifer provide sufficient thermal capacity while maintaining groundwater temperatures within practically operable ranges for GSHP on a long-term sustainable basis?

Three GSHP system options were evaluated:

1. Case Study 1 – Martin-Williamson Hall GSHP System: GSHP system to supply heating and cooling to Martin-Williamson Hall
2. Case Study 2 – Four Buildings, Micro-District GSHP System: GSHP system to supply heating and cooling to Martin-Williamson Hall, JFK Library, the Computing and Engineering Building, and the Art-Theater-Music Complex
3. Case Study 3 – Entire Campus GSHP System: GSHP system to supply heating and cooling to the entire EWU campus.

Implementation of a GSHP will require a new non-consumptive water right authorization from the Washington State Department of Ecology (Ecology). WNR completed a draft water right application, which is presented in Appendix D.

SUMMARY OF FINDINGS

The following findings are supported by the hydrogeologic evaluation and modeling efforts described in the report:

- GSHP wellfield permitting requirements include obtaining a new water right and registration of all injection wells with Ecology's Underground Injection Control Program. Permitting requirements are unlikely to constrain project implementation.
- The EWU campus is underlain by a productive aquifer within the Grande Ronde Basalt Formation (Grande Ronde Basalt) of the Columbia River Basalt Group (CRBG). Landau's preliminary hydrogeologic evaluation suggests aquifer yield is sufficient to meet system capacity

for all three case study scenarios. Additional aquifer testing is recommended for the next phase of feasibility analysis to confirm aquifer yield in the campus area.

- Thermal modeling completed with the computer programs MODFLOW and MT3DMS suggests that, with proper placement of extraction and injection wells, groundwater temperatures at the point of extraction will fluctuate within a range of acceptable temperatures for operation of the GSHP system. Steady-state thermal conditions were simulated by running the thermal model for each case study for a period of 5 years, cycling between heating and cooling periods.

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FIGURES

APPENDICES

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LIST OF ABBREVIATIONS AND ACRONYMS

bgs ..... below ground surface
CHD ..... specified head
Cheney ..... city of Cheney, Washington
CRBG ..... Columbia River Basalt Group
Ecology ..... Washington State Department of Ecology
EWU ..... Eastern Washington University
ft ..... foot/feet
ft^2/day ..... square feet per day
GIS ..... geographical information system
GMS ..... groundwater modeling system
gpm ..... gallons per minute
GSHP ..... ground source heat pump
HAC ..... heat pump/air conditioning
Landau ..... Landau Associates, Inc.
MSI ..... MSI Engineers
NPSHr ..... net positive suction head required
SEPA ..... State Environmental Policy Act
UIC ..... Underground Injection Control
USGS ..... United States Geological Survey
WAC ..... Washington Administrative Code
WNR ..... Water and Natural Resources Group, Inc.

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1.0 PROJECT BACKGROUND

This report documents a preliminary hydrogeologic evaluation by Landau Associates, Inc. (Landau) of open-loop ground source heat pump (GSHP) well field alternatives (project) for the Eastern Washington University (EWU) campus in Cheney, Washington. Landau has prepared the evaluation in partnership with Water and Natural Resources Group, Inc. (WNR) in support of MSI Engineers' (MSI) assessment of the feasibility and economic viability of converting EWU's heating and cooling system to GSHPs.

The ground source heat pump (GSHP) system proposed by MSI is an open-loop type system, where groundwater is pumped out of the aquifer, circulated through a heat exchanger, and reinjected back into the aquifer. Hydraulic and thermal modeling was completed to evaluate hydraulic and thermal capacity of the local aquifer to meet the GSHP demands for each case study. Aquifer extraction requires a water right from the Washington State Department of Ecology (Ecology) and reinjection requires registration with Ecology's Underground Injection Control (UIC) program. Permitting considerations are discussed in the following section, followed by a discussion of the hydrogeologic assessment, modeling results, well design, and recommendations.

2.0 PERMITTING CONSIDERATIONS

The project will first require a water right permit for the GSHP. Typically, new water right applications are acted upon in the order in which they are received by Ecology, which assigns the application's priority date. Certain new water right applications are granted priority processing dependent upon certain proposed project requirements and conditions. Under Washington Administrative Code (WAC) 173-152-050(2), an application may receive priority processing if Ecology determines that, "the proposed water use is non-consumptive and if approved would substantially enhance or protect the quality of the natural environment (WAC 173-152-050[2][b]). Ecology also has Policy 2020 – Priority Processing of Heat Pump Applications." This policy also states that a withdrawal for heat exchange purposes may be afforded priority processing if the conditions under WAC 173-152-050(2)(b) are met. The proposed EWU GSHP open-loop heat exchange system meets the criteria set forth in WAC 173-152-050(2)(b) and as such, Ecology should afford it a priority processing status.

Ecology Policy 2020 governs the determination of consumptive versus non-consumptive water use. The policy defines groundwater use as non-consumptive when, "there is no diminishment of the source." As proposed with this project, the groundwater withdrawn for the GSHP will immediately be injected back to the source "in the same quantity and quality (excluding temperature change) at a point in close proximity to the withdrawal wells." Assuming the proposed project meets these standards, a non-consumptive water right has a relatively high probability of being approved by Ecology.

The proposed water right application (Appendix D) exceeds the 2,250 gallons per minute (gpm) exemption limit, and as such will require submittal of a State Environmental Policy Act (SEPA) checklist. The SEPA process will be conducted upon submittal of the water right application.

The project will also be required to register as a Class V Underground Injection Control well with Ecology. Owners or operators of proposed—or existing—underground injection control wells must register their wells online using the SecureAccess Washington website. All injection wells must either receive a program rule authorization or a state discharge permit in order to operate.

Ecology's Underground Injection Control rule, Chapter 173-218 WAC, authorizes open-loop heat pump/air conditioning (HAC) system wells when a well is registered, and the environmental protection requirements of the rule are met. The following conditions are required to authorize HAC systems in the form of an injection well:

- No chemicals are added to the HAC system
- The HAC system meets water right permitting requirements
- Discharges from wells do not affect the water quality in nearby waters on the 303(d) polluted waters list
- Discharges from wells do not affect the water in nearby waters with a Total Maximum Daily Load (water quality cleanup) plan
- Discharges from wells do not affect groundwater quality by concentrating or redirecting existing contaminant plumes

- Groundwater used in the HAC system must be discharged back to the source aquifer.

EWU will coordinate with Ecology upon water right permit authorization to assure all injection well requirements are met.

3.0 HYDROGEOLOGIC ASSESSMENT

Eastern Washington University lies within the Columbia Plateau. Local geology and hydrogeology are dominated by the presence of the CRBG. The CRBG is generally the most consistent source of large groundwater yields required by local water purveyors (Kahle 2011 and GeoEngineers 2015). A site plan that includes surficial geology is presented on Figure 2. A geologic cross section of the EWU campus is presented on Figure 3.

3.1 Geologic Setting

The city of Cheney, Washington (Cheney) is located on the northeast margin of the Columbia Plateau, a structural and topographic basin within the drainage of the Columbia River infilled by the CRBG. The CRBG consists of a series of flows, which erupted during the Miocene Epoch about 17 million to 6 million years ago. In the northeast region of the plateau the basalts are relatively undeformed with a gentle southwest slope. In the project area, the CRBG is divided into two basalt units—the Wanapum, and Grande Ronde Formations—and their sedimentary interbeds. Each formation consists of multiple individual flows. The presence of sedimentary interbeds reflect deposition in streams and lakes during periods between the eruption of basalt flows. The CRBG stratigraphically overlays basement rocks that consist of meta-sedimentary rocks of the Precambrian age Belt Supergroup that have undergone low-grade metamorphism during Mesozoic and Tertiary periods. Surface topography is characterized by channeled bedrock, carved by catastrophic glacial floods of the last ice age (Pleistocene time), sediments deposited by glacial flood waters, and wind deposited silts.

The stratigraphic sequence beneath EWU can be generalized as follows:

- Zero to 50 feet below ground surface (ft bgs) of unconsolidated surficial deposits, sand and gravel, and wind-deposited silts
- 50 to 1,300 ft bgs of CRBG
  - 50 to 300 ft bgs, Wanapum Basalt and sedimentary interbeds
  - 300 to 1,000 ft bgs, Grand Ronde Basalt and sedimentary interbeds
- 1,300 ft bgs and below, pre-CRBG basement rock (Kahle 2011, Buchanan 2007, and well log interpretation).[1]

3.2 Hydrogeologic Units

All three locally present stratigraphic units described above store water in the project area; however, surficial deposits and the basement rock are not anticipated to produce sufficient yield for a GSHP system. Unconsolidated surficial deposits typically have a saturated thickness of less than 10 ft and are not considered reliable for long term supplies of large quantities of groundwater. The basement rock generally has much lower permeability than the basalts and in most areas of the Columbia Plateau are considered the base of the groundwater flow system (Kahle 2011); however, the basement rock beneath Cheney may be an exception. Cheney Wells 4 and 5 are developed in basement rock aquifer

[1] Nearby well logs are presented in Attachment A. Well locations are presented on Figure 2.

with total depths of 2,136 ft and 2,134 ft, respectively, and maximum reported yields of 250 gpm and 750 gpm, respectively (Parametrix 2019).

The CRBG is generally the most consistent source of large groundwater yields in the area and is the focus of this assessment. A more detailed description of the surficial aquifer unit and the basement aquifer unit can be found in Kahle 2011, Buchanan 2007, and GeoEngineers 2015.

3.2.1 Columbia River Basalt Group Aquifer

The CRBG aquifer system is a series of vertically stacked confined or semi-confined basalt aquifers with water yield concentrated at interflow zones (i.e., the zone between two individual basalt flows). Interflow zones include a flow top, a flow bottom, and a sedimentary interbed if present. Interflow structures can include vesicular and/or brecciated flow tops, flow bottom pillow complexes and/or brecciated zones; these features create permeability and storage (Kahle 2011). Water reaches the interflow zones and recharges the aquifers by downward percolation or by lateral groundwater inflow (Luzier and Burt 1974). Movement of groundwater vertically along joints in the basalt is estimated to be several orders of magnitude lower than the horizontal range of movement. Cheney wells 1, 2, 3, 6, and 7 are developed in the CRBG aquifer, as are EWU wells 1 and 2R (Parametrix 2019).

The Grande Ronde Basalt aquifer is considered the most productive basalt aquifer in the project area. The Grande Ronde Basalt aquifer is mostly confined and is recharged to a large degree by lateral groundwater inflow. The overlying Wanapum Basalt aquifer is partially recharged by precipitation and infiltration and is the source of water for many springs and lakes in the Cheney area (Buchanan 2007).

Well logs in and around the EWU campus record a substantial (75- to 100-ft-thick) sedimentary interbed at depths of 500 to 600 ft bgs. Previous hydrogeologic studies have interpreted this layer to be the Latah formation, which is broadly understood to have been deposited between the Wanapum Basalt and the Grande Ronde Basalt (Kahle 2011 and Cheney wellhead protection plan). However, recent geochemical analysis of samples collected from Cheney Well 5 identified the contact between the Wanapum and Grande Ronde Basalts at about elevation 2,200 ft (200 to 300 ft bgs; Buchanan 2007 and GeoEngineers 2015). This depth correlates to an approximate Wanapum Basalt thickness of 220 ft to 280 ft in the EWU campus area.

3.3 Aquifer Hydraulic Parameters

Well testing and hydrogeologic reports were reviewed to estimate hydraulic parameters for the Grande Ronde Basalt aquifer in the vicinity of the EWU campus. Aquifer parameter estimates are summarized in Table 1.

Table 1. Hydraulic Parameters

Model Parameter	Value
Aquifer Transmissivity (square feet per day)	9,900
Aquifer Storativity (unitless)	0.0002
Static Water Level (feet below ground surface**)**	300 to 400
Hydraulic Gradient	0.01

3.3.1 Aquifer Transmissivity

Aquifer transmissivity (T) describes the ability of the aquifer to transmit groundwater throughout its entire saturated thickness. Transmissivity is the product of hydraulic conductivity (i.e., the capacity of the aquifer material to transmit water) and aquifer thickness:

$$T = Kb$$

Where K is transmissivity and b is aquifer thickness

Transmissivity can be determined via pumping tests, analysis of aquifer material, or calculations based on laboratory tests. Of these methods, transmissivity values established during pumping tests are typically considered the most accurate. Due to the heterogeneity of hydraulic conductivity in the Grande Ronde Basalt aquifer and variability in saturated aquifer thickness, pumping test data from onsite EWU Well 2R is anticipated to be most representative of local conditions (versus pumping test data from wells at greater distances from campus).

In 2015, pumping tests were completed on a new water supply well (Well 2R) installed on EWU campus. Analysis of the constant-rate pumping test data estimated an aquifer transmissivity range of 9,900 square feet per day (ft^2/day) to 14,000 ft^2/day, using the Cooper-Jacob graphical method and the Theis recovery method, respectively (GeoEngineers 2015). For conservatism, the lower transmissivity value was selected for modeling purposes.

The pumping well screen was open to 225 ft of the aquifer, and approximately 100 ft of that interval was estimated to be water-bearing interflow zones. Therefore, for modeling purposes, an aquifer thickness of 100 ft was assumed.

3.3.2 Aquifer Storativity

Aquifer storativity (S) is a measure of an aquifer's ability to store and release water and is defined as the volume of water that a unit will absorb or release from storage per unit surface area per unit change in hydraulic head. Storativity is also known as the storage coefficient; it is dimensionless and is expressed as a decimal. Storativity cannot be estimated from a pumping test without observation well data (testing of Well 2R did not include an observation well[s]), therefore a representative value was selected from

available literature. The estimated median storage coefficient for the Grande Ronde Basalt aquifer is 0.0002 (Kahle 2011).

3.3.3 Static Water Level and Hydraulic Gradient

Groundwater levels in the Grande Ronde Basalt aquifer are between about 2,100 and 2,200 ft elevation in the Cheney area (Whiteman 1986) (i.e., between 300 and 400 ft bgs in the EWU campus area). The groundwater flow direction is interpreted to be to the south-southeast with a gradient of 0.01.

During the production well evaluation at Well 2R, completed in 2015, the static groundwater level in the Grande Ronde Basalt aquifer was approximately 350 ft bgs (GeoEngineers 2015). The groundwater level was monitored for a 7-day period under non-pumping conditions. A cyclic fluctuation of 1½ ft was recorded and interpreted to be interference associated with the pumping cycle at Well 1. On a larger timescale, existing historical data indicate that groundwater mining is occurring in the aquifer system beneath the city of Cheney and modeling efforts predict that the rate of water level decline will increase as pumping demands grow with anticipated increases in city population (Buchanan 2007).

Groundwater flow in the CRBG near the Cheney area is generally to the south and southwest, towards the center of the Columbia Basin. However, flow in the Grande Ronde Basalt aquifer in the area of the EWU campus appears to be to the south-southeast due to the presence of a groundwater trough to the southeast of Cheney. Grande Ronde Basalt aquifer groundwater elevation contours are presented in Figure 4 (Whiteman 1986). Groundwater flow direction should be confirmed in the next phase of project design; it is an important design variable for sustaining groundwater temperature targets at the source well.

4.0 MODELING

Hydraulic modeling was completed using estimated aquifer parameters discussed above. Three GSHP system options were evaluated:

1. Case Study 1 – Martin-Williamson Hall GSHP System: GSHP system to supply heating and cooling to Martin-Williamson Hall. Consists of one injection well and one extraction well. Preliminary well locations for Case Study 1 are shown on Figure 5A.
2. Case Study 2 – Four Buildings, Micro-District GSHP System: GSHP system to supply heating and cooling to Martin-Williamson Hall, JFK Library, the Computing and Engineering Building and the Art-Theater-Music Complex. Consists of three injection wells and three extraction wells. Preliminary well locations for Case Study 2 are shown on Figure 5B.
3. Case Study 3 – Entire Campus GSHP System: GSHP system to supply heating and cooling to the entire EWU campus. Consists of ten injection wells and ten extraction wells. Preliminary well locations for Case Study 3 are shown on Figure 5C.

Case Study scenarios were presented to Landau by MSI, including associated target system capacity in units of gpm and preliminary design assumptions (e.g., number of wells required, well depth, and well spacing). Hydraulic and thermal modeling was completed to evaluate the feasibility of achieving the necessary well yields to meet system capacity demands and maintain sustainable groundwater temperatures for effective operation of the GSHP system.

4.1 Hydraulic Modeling

Drawdown at the extraction well and mounding at the injection well were simulated using the modified nonequilibrium equation (Driscoll 1986) and estimated aquifer parameters presented above.

$$s = \frac{264Q}{T} log \frac{0.3Tt}{r^2S}$$

Where: s = drawdown, in ft
Q = pumping rate, in gallons per minute
T = transmissivity, in gallons per day per foot (9,900 ft^2/day)
t = time since pumping started, in days (1,825 days = 5 years)
r = distance from pumping well, in ft (i.e., well spacing)
S = coefficient of storage (dimensionless; 0.0002)

The drawdown (or mounding) value (s) at each well location was calculated for each case study, simulating the effects of combined extraction and injection on the water level in the aquifer. Drawdown in the extraction wells is offset by the return of groundwater through the injections well, which has the opposite effect on the water level than pumping (i.e., raises rather than lowers water levels). Drawdown or mounding analysis does not take into account well efficiency. Well efficiency (drawdown in the well divided by drawdown in the aquifer directly outside the well) is less than 100 percent due to the effect of well loss as water enters or exits the well screen. For the purposes of this evaluation, it may be

assumed that well efficiency would cause drawdown in the wells to be roughly 10 to 20 ft lower (or higher in the case of injection). Model inputs and results are summarized below:

Table 2. Hydraulic Modeling Results Summary

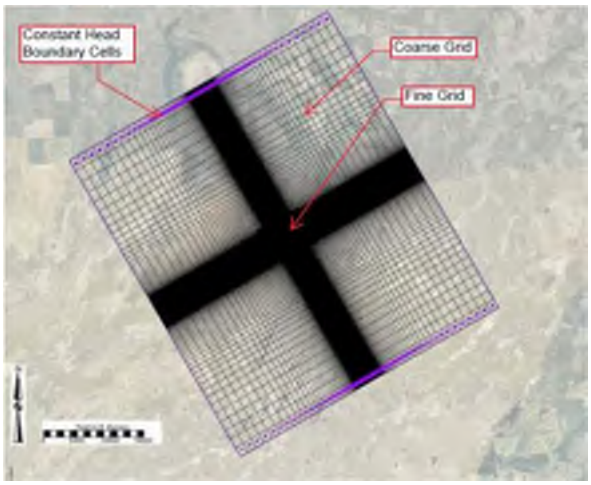
	Case Study 1	Case Study 2	Case Study 3
Q (gpm)	600	1,200	1,500
r (ft)	600	500 – 1,600	340 – 3,010
Maximum drawdown (s, ft)	16	43	87
Maximum mounding (-s, ft)	16 (7 psi)	43 (19 psi)	87 (38 psi)
Available water column above pump at maximum drawdown (ft)	284	257	213

a. **Note:** Hydraulic head in the Grande Ronde Basalt aquifer in the vicinity of the EWU campus is estimated to be around 350 ft bgs. Available water column is calculated as follows: pump depth minus static water level minus drawdown. Drawdown and mounding values presented do not take into account well efficiency, see discussion in text.

Hydraulic modeling details are included in Appendix B.

4.2 Thermal Modeling

Overall anticipated GSHP system performance within the constraints of the site hydrogeologic setting, as described above, was evaluated with numerical groundwater flow and heat transport modeling (thermal modeling). Thermal modeling was completed using a simple 1-layer groundwater transport model using the US Geological Survey (USGS) numerical MODFLOW (for groundwater flow) and MT3DMS (for heat transport) model codes, as accessed via Aquaveo's Groundwater Modeling System (GMS) software. GMS allows for convenient GIS-based conceptual model setup, conversion to numerical model grid space, and high-quality output graphics to visualize modeling results. The thermal model was set up as a simplified single layer to represent the Grande Ronde Basalt aquifer, with the following key parameters:



- Model grid dimensions (i.e., model domain): approximately 50,000 ft by 45,000 ft—with the EWU campus in the approximate center—or approximately 10 times the general dimensions of the campus (see adjacent graphic), in order to reduce the effect of model boundary conditions on simulated results at the campus location. Model grid cells were set to be 50 ft by 50 ft in the vicinity of campus (i.e., refined to allow for flexibility in extraction and injection well placement as well as to allow for the resulting steeper hydraulic gradients around the wells). The grid was expanded to 1,300 ft by 1,300 ft toward the model boundaries (i.e., expanded to reduce computational needs of the simulations). The model grid was rotated approximately 30 degrees counter-clockwise to allow for convenient assignment of up-gradient and down-gradient hydraulic boundary conditions to represent the general North-Northwest to South-Southeast hydraulic gradient assumed for the campus vicinity.
- The top and bottom of the model were set to a uniform elevation of 2,000 ft and 1,900 ft, respectively; therefore, the model thickness is roughly 100 ft, representing the combined thickness of the basalt interflow zones encountered in Well 2R.
- A uniform hydraulic conductivity of 99 ft per day and a specific storage value of 2.0×10^{-6} ft^{-1} (which relates to a storage coefficient value of 0.0002, given an aquifer thickness of 100 ft) were assigned to the model.[2]
- Boundary conditions—both hydraulic and temperature—were assigned to the northwest and southeast edge of the model to simulate background aquifer conditions. The hydraulic boundary conditions were assigned using the specified head (CHD) package in MODFLOW. The resulting background simulated hydraulic conditions in the vicinity of the campus included a simulated head ranging from 2,130 to 2,160 ft with a hydraulic gradient of 0.01 ft per foot. Extraction and injection wells were assigned to the model, in accordance with well layout and pumping rates described for each GSHP case, using the WEL package in MODFLOW.[3] The temperature boundary conditions were assigned to the same up-gradient and down-gradient model boundary cells and assigned to be 286 Kelvin (or about 55 degrees Fahrenheit). Aerial recharge (i.e., from precipitation infiltration) was not applied to the top of the model, with the assumption that vertical percolation of precipitation to the Grande Ronde Basalt aquifer is

[2] Note that, because the flow model was run in steady state (not transient, or time-varying) conditions, the aquifer storage term is not important for model results.

[3] Case 1, with one extraction well and one injection well, extraction and injection rates were assigned 600 gpm for each well; Case 2, with three extraction wells and three injection wells, extraction and injection rates were assigned 1,200 gpm for each well (or 3,600 gpm total extraction and injection); Case 3, with ten extraction wells and ten injection wells, extraction and injection rates were assigned 1,350 gpm for each well (or 13,500 gpm total extraction and injection).

limited. Rather, up-gradient groundwater recharge to the aquifer is implicitly represented by the CHD boundary conditions.

- As described above, background groundwater temperature was assigned 286 Kelvin (or about 55 degrees Fahrenheit). GSHP injection water (with temperature depending on the operational period of the GSHP system) was applied to the injection well(s). Wintertime relatively cool injection water from the GSHP system was assigned a temperature of 279 Kelvin (or about 42.5 degrees Fahrenheit). Summertime relatively warm injection water from the GSHP system was assigned a temperature of 293 Kelvin (or about 67.7 degrees Fahrenheit). Advection, dispersion, conduction, and thermal retardation are the primary heat transport mechanisms represented in MT3DMS. Heat advection was simulated with a third-order total variation diminishing scheme (the default option in GMS). Dispersion was represented in both longitudinal (parallel to groundwater flow, with a dispersivity value of 0.5) and transverse (perpendicular to groundwater flow, with a dispersivity value of 0.1). Conduction was simulated in MT3DMS with the molecular diffusion coefficient of 2.15×10^{-11}. Thermal retardation was calculated using bulk density (1,961 kg/m^3), sorption coefficient (0.00021 m^3/kg), and porosity (0.25) values such that the resulting retardation factor applied to the model was 2.6.
- The MODFLOW groundwater flow model, including simulated hydraulic effect of pumping from the extraction wells and injecting to the injection wells, was set up in steady-state (not time-varying) mode to represent long-term sustained pumping/injecting conditions. The MT3DMS heat transport model, however, was set up in transient mode with daily timesteps, including 10 stress periods representing five repeated annual cycles of cooling/heating operational periods of the GSHP system. Each cycle of cooling/heating periods included 212 days (from October 1 to April 30) of GSHP heating (during which injected water is relatively cool) and 153 days (from May 1 to September 30) of GSHP cooling (during which injected water is relatively warm). Therefore, the thermal model was set up to simulate the heat transport effect on the aquifer from the anticipated operations of the GSHP system over a 5-year period.

Each GSHP case was then evaluated by simulating the extraction and injection wells (via MODFLOW) and heat transport of injected GSHP system water (via MT3DMS) in general accordance with the pumping (extraction/injection) rates and injected water temperatures described above and with well layouts for each case. The results were evaluated by tracking simulated heat in the aquifer over time, both in plan view (i.e., thermal contours across the campus) and in time series (from a representative model cell) formats. The thermal modeling results of each simulated case are presented in Appendix C.

Thermal modeling indicates that a likely temperature effect from the injection wells would be observed at the extraction wells in less than 5 years for all three case studies. This effect consists of an annual fluctuation from warmer than ambient (ambient equal to 286 degrees Kelvin) to cooler than ambient. However, it is likely that the temperature impact would stabilize (reach a maximum impact) in less than 5 years. The maximum temperature impact that was observed was for Case Study 3. At an arbitrary monitoring point within the extraction well array, temperatures fluctuated between about 291 and 280 degrees Kelvin annually. This seasonal pattern stabilized after about 2 years.

5.0 WELL DESIGN

For the purposes of cost estimation, MSI requested that Landau establish preliminary well design parameters. Well design parameters are largely based on production well testing of EWU Well 2R and proven well yield. Landau assumes Ecology will require injection wells to reinject into the same aquifer interval as the extraction wells, therefore preliminary injection well design recommendations and preliminary extraction well design recommendations are the same. Design parameters are presented in Table 3 and discussed in the following subsections.

Table 3. Preliminary Well Design Recommendations (Based on Well 2R construction)

Diameter	16-inches
Well Depth	1,075 ft bgs
Screen interval	225 ft of screen installed between 677 and 1,075 bgs
Depth to Pump	650 ft bgs

Note: Screened interval is within the Grande Ronde Basalt aquifer.

5.1 Well Diameter

The recommended extraction and injection well diameter is 16 inches. A 16-inch-diameter well can accommodate a well yield of 800 to 1,800 gpm (Driscoll 1986).

5.2 Well Depth and Screen Interval

The recommended well depth and screen interval is 1,145 ft bgs with a 225 ft screen installed between 677 and 1,075 ft bgs.

As a matter of policy, Ecology considers the Wanapum and the Grande Ronde Basalt Formations to be two distinct aquifers. Per WAC Chapters 173-160-181(3) and 173-160-450, water wells may not interconnect aquifers. Ecology typically requires that wells are cased and sealed at least 200 ft into the Grande Ronde Basalt to minimize aquifer interconnection. In the project area, 200 ft into the Grande Ronde Basalt is estimated to be approximately 430 ft bgs. If the well screen interval is 225 ft (approximately the same length as at Well 2R), the minimum well depth would be 665 ft bgs. The maximum well depth would be the estimated depth of the bottom of the Grande Ronde Basalt in this area, which is 1,370 ft. Ultimately, extraction and injection wells would be installed within this range of well depths to intersect sufficient basalt interflow zones to accommodate the design pumping and injection rates. For the purposes of cost estimation, it is recommended the wells target the same depth and screened interval as Well 2R (see Table 3), which discharged 1,300 gpm with only 28 ft of drawdown during a 24-hour constant-rate pumping test.

5.3 Pump Depth

Based on the recommended screen placement, the recommended pump depth is approximately 650 ft bgs. The intake of a pump should be placed above the well screen to minimize the risk of distorted flow patterns occurring in the vicinity of the screen, which can result in well fouling and pump damage (Driscoll 1986, Gjengedal et al. 2019). Also, enough water must be present above the pump suction port (i.e., intake) so that the pump remains submerged during groundwater extraction (i.e., anticipated drawdown does not expose the pump). A pump submergence of 20 ft during pumping is typically sufficient for safe operation; however, the pump specification sheet should be reviewed to confirm the pump net positive suction head required (NPSHr). The NPSHr is the minimum pressure at the suction port of the pump required to keep the pump from cavitating.

6.0 SUMMARY AND RECOMMENDATIONS

The local Grande Ronde Basalt aquifer appears to have the hydraulic characteristics to support a high yield open-loop GSHP system. Landau's and WNR's analysis of the regulatory environment, hydrogeology and aquifer properties, and thermal modeling efforts indicate that the local aquifer could support system capacity demands for all three case study scenarios presented by MSI. For the next step of project feasibility assessment, well installation and pumping tests should be considered to verify aquifer yields and refine well design and well field configuration.

7.0 USE OF THIS REPORT

This report has been prepared for the exclusive use of MSI Engineers for specific application to the Eastern Washington University Ground Source Heat Pump Evaluation project. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. Landau makes no other warranty, either express or implied.

8.0 REFERENCES

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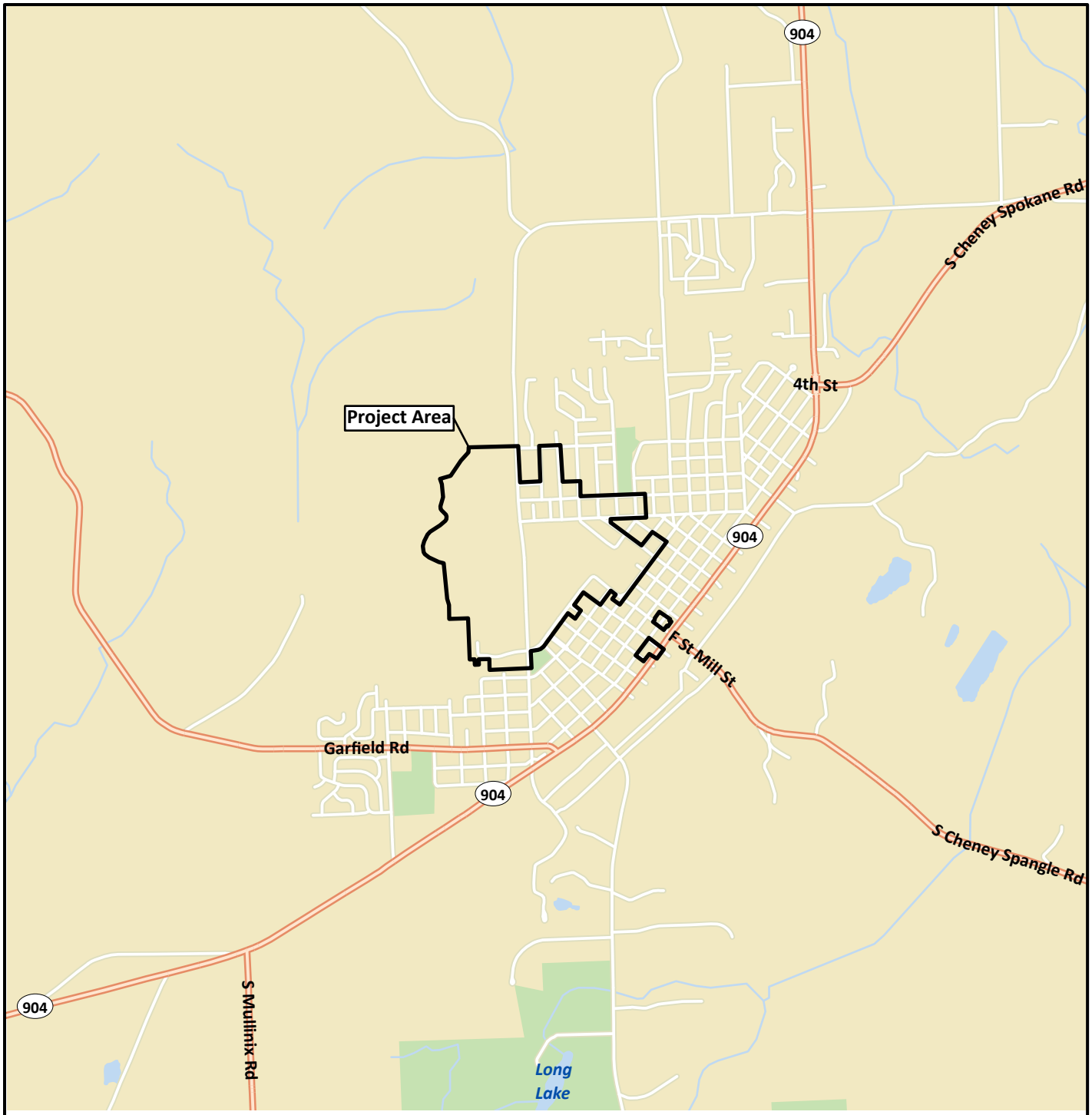

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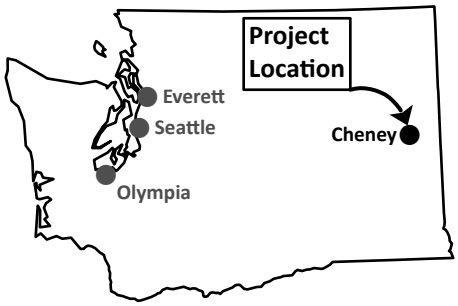

Data Source: Esri.

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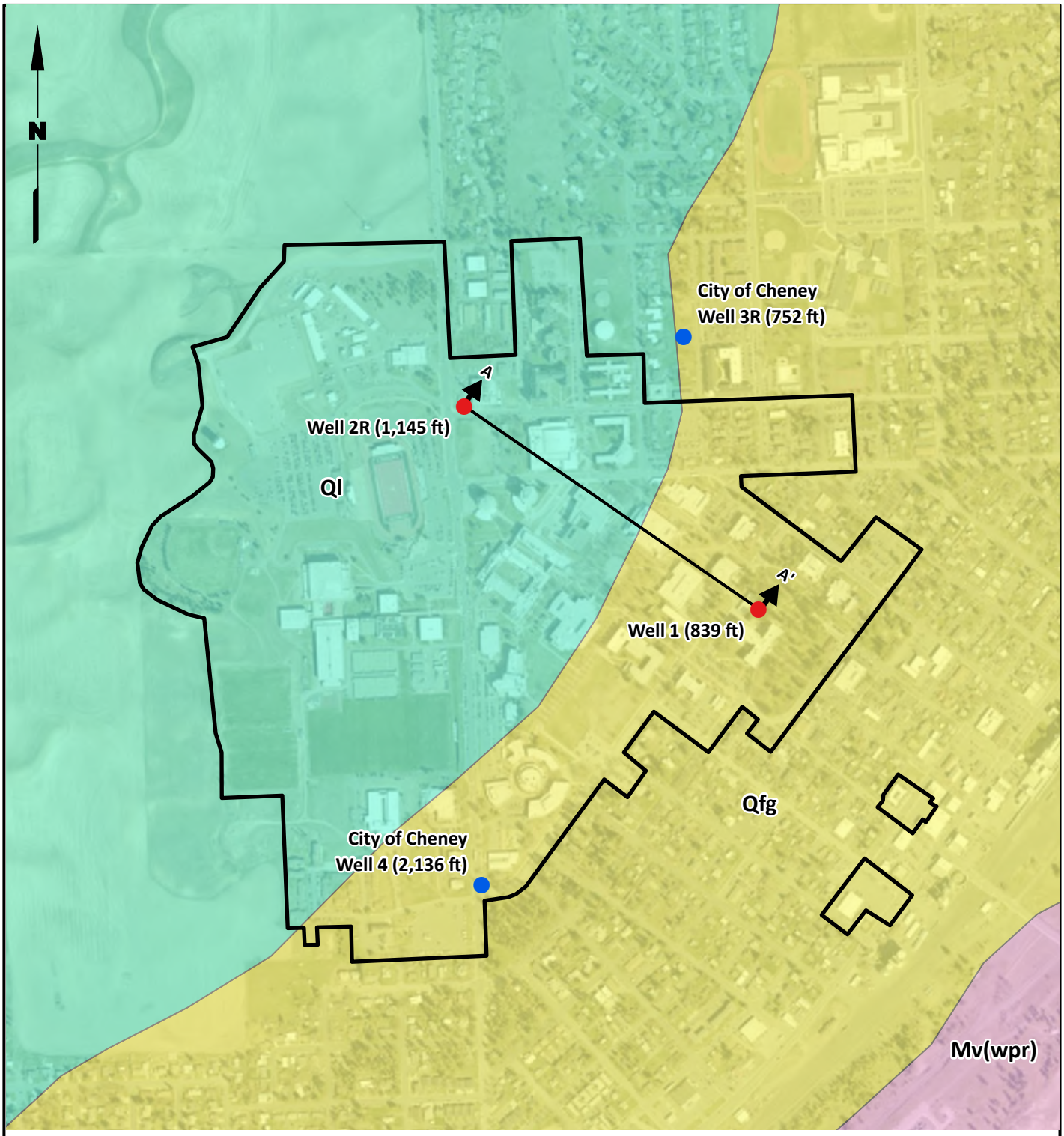
Eastern Washington University GSHP Hydrogeologic Evaluation Cheney, Washington	**Vicinity Map**	Figure 1



Legend

- Cross Section Location
- EWU Well Location, Designation, and Depth
- City of Cheney Well Location, Designation, and Depth
- Eastern Washington University Campus
- Mv(wpr) - Wanapum Basalt Unit
- Qfg - Outburst Flood Deposits
- Ql - Loess

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 800 1,600

Scale in Feet

Data Sources: Esri 2023; National Geologic Map Database 2023

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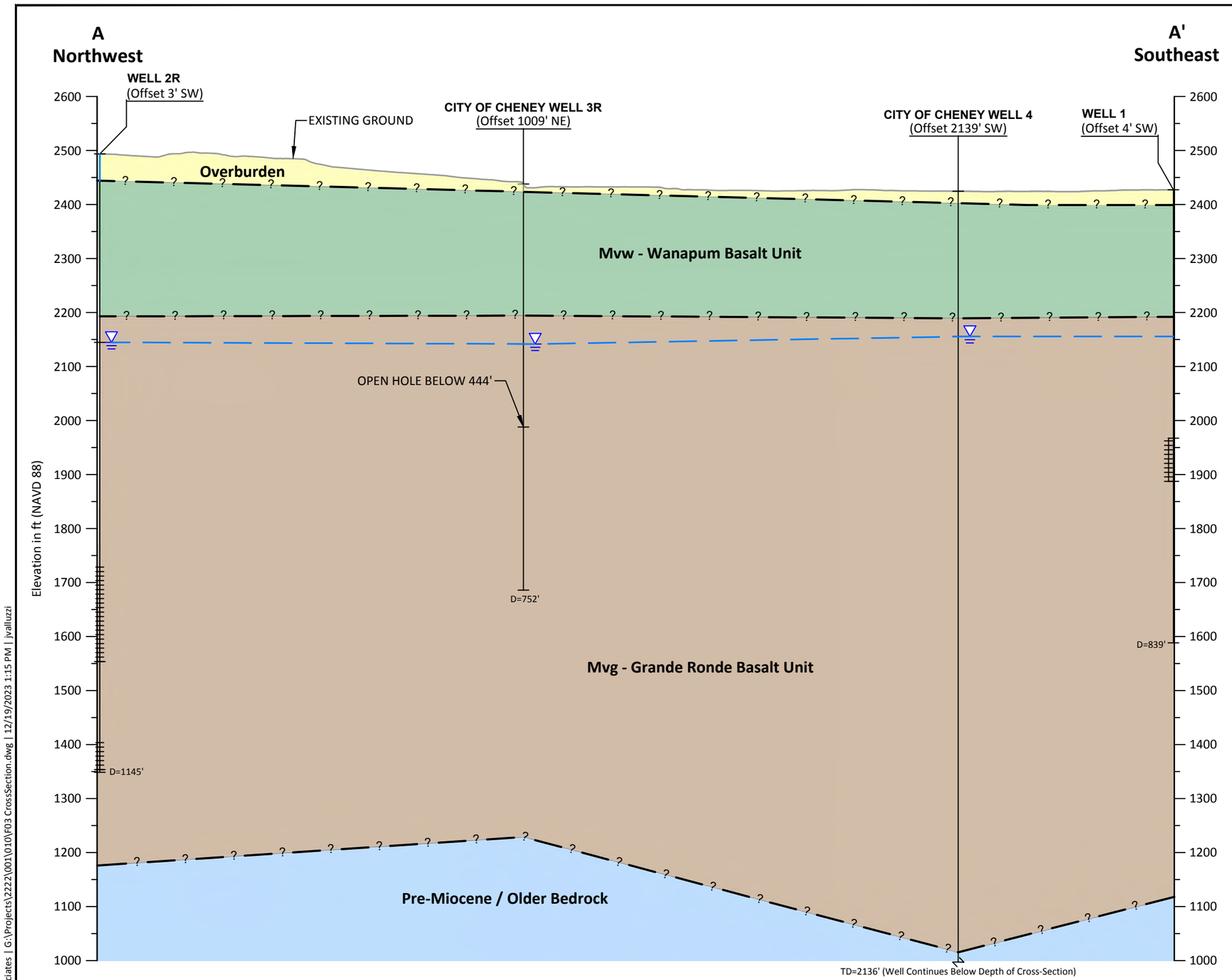
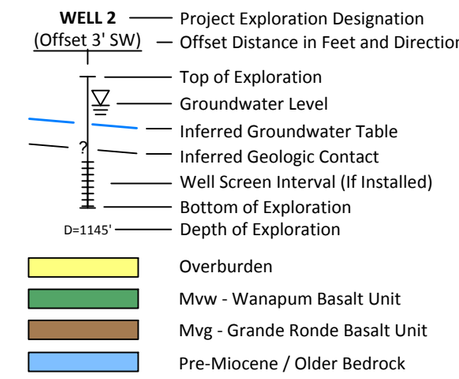
Eastern Washington University GSHP Hydrogeologic Evaluation Cheney, Washington	**Site Plan with Surficial Geology**	Figure 2



Notes

1. Data derived from USGS's Three-Dimensional Model of the Geologic Framework for the Columbia Plateau Regional Aquifer System, Idaho, Oregon, and Washington (Scientific Investigations Report 2010–5246) and Geoengineers (2015) [Water Level].
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend



Source: USGS, 2023

Geologic Profile Alignment A-A'

Horizontal Scale in Feet: 1"=200'
Vertical Scale in Feet: 1"=200'

0 200 400
Scale in Feet

Eastern Washington University
GSHP Hydrogeologic Evaluation
Cheney, Washington

Cross Section A-A'

Figure 3

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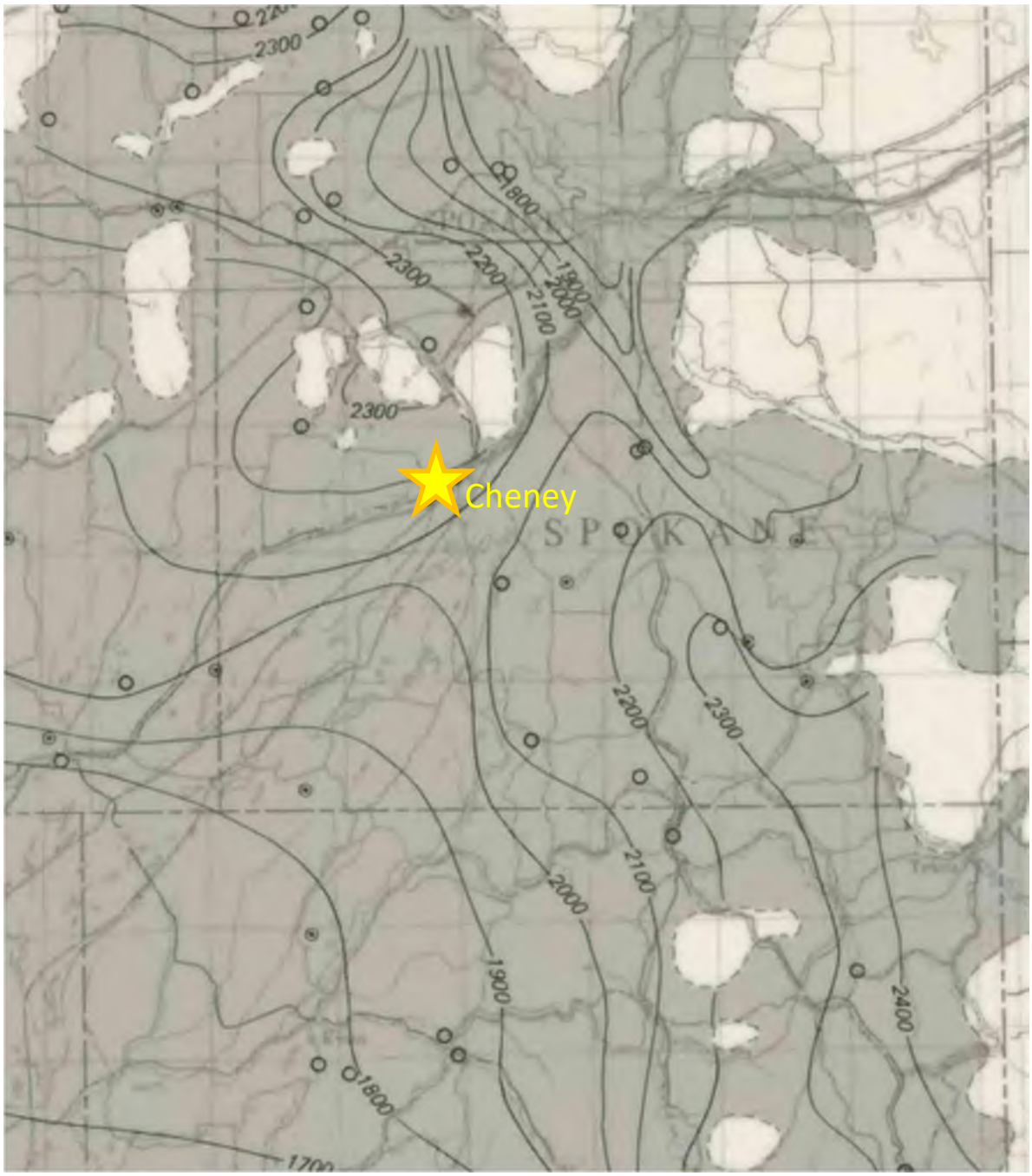

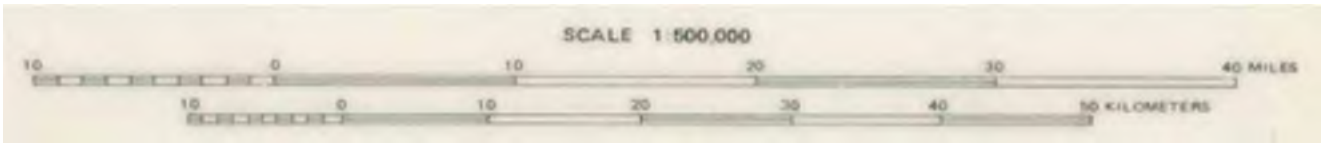

Notes

1. Source – Whiteman, K.J., *Groundwater levels in three basalt hydrologic units underlying the Columbia Plateau, Washington and Oregon, Spring 1984*, 1986, USGS Publications Warehouse.
2. National Geodetic Vertical Datum 1929

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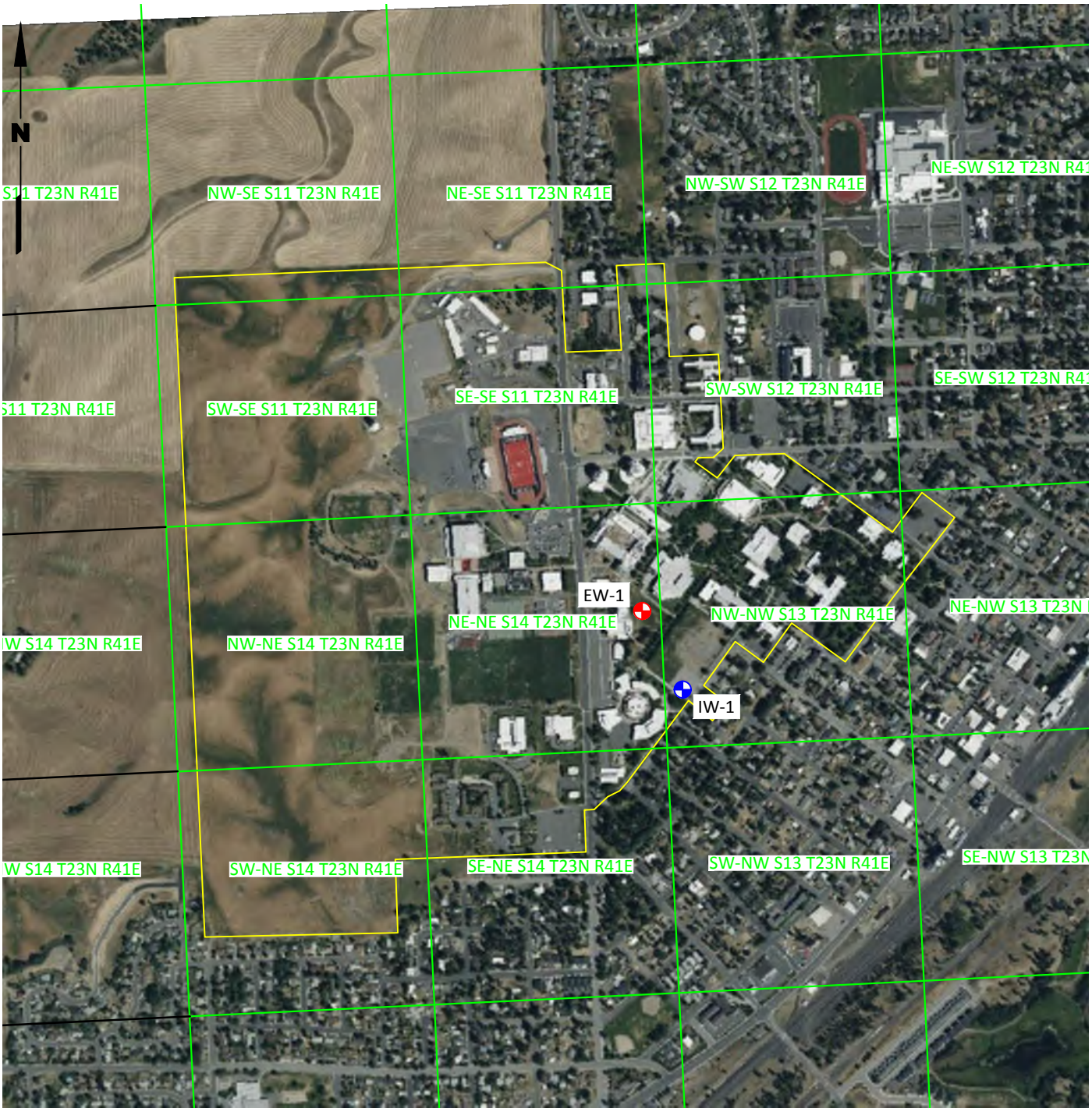
LANDAU ASSOCIATES

EWU GSHP Hydrogeologic Evaluation Cheney, Washington	**Groundwater Elevation in the Grande Ronde Basalt**	Figure 4



Legend

- Proposed Injection Well Location
- Proposed Extraction Well Location
- Quarter-Quarter Sections (Township & Range)
- EWU Campus Water District Boundary (Place of Use)

0 1000 2000

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth, accessed December 2015

Eastern Washington University
GSHP Hydrogeologic Evaluation
Cheney, Washington

Case Study 1 Well Locations

Figure 5A

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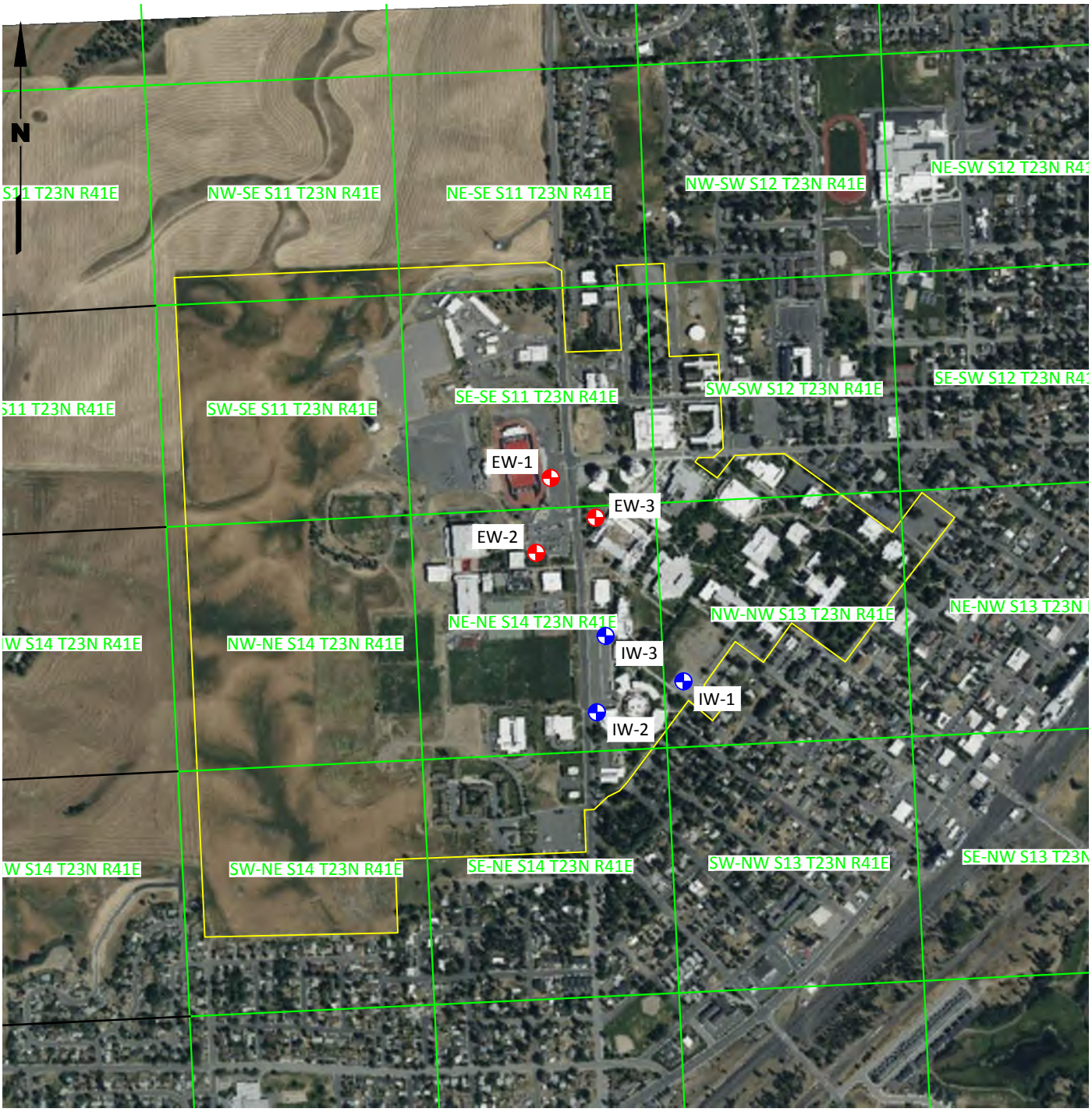

Legend

- Proposed Injection Well Location
- Proposed Extraction Well Location
- Quarter-Quarter Sections (Township & Range)
- EWU Campus Water District Boundary (Place of Use)

0 1000 2000

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth, accessed December 2015

Eastern Washington University
GSHP Hydrogeologic Evaluation
Cheney, Washington

Case Study 2 Well Locations

Figure 5B

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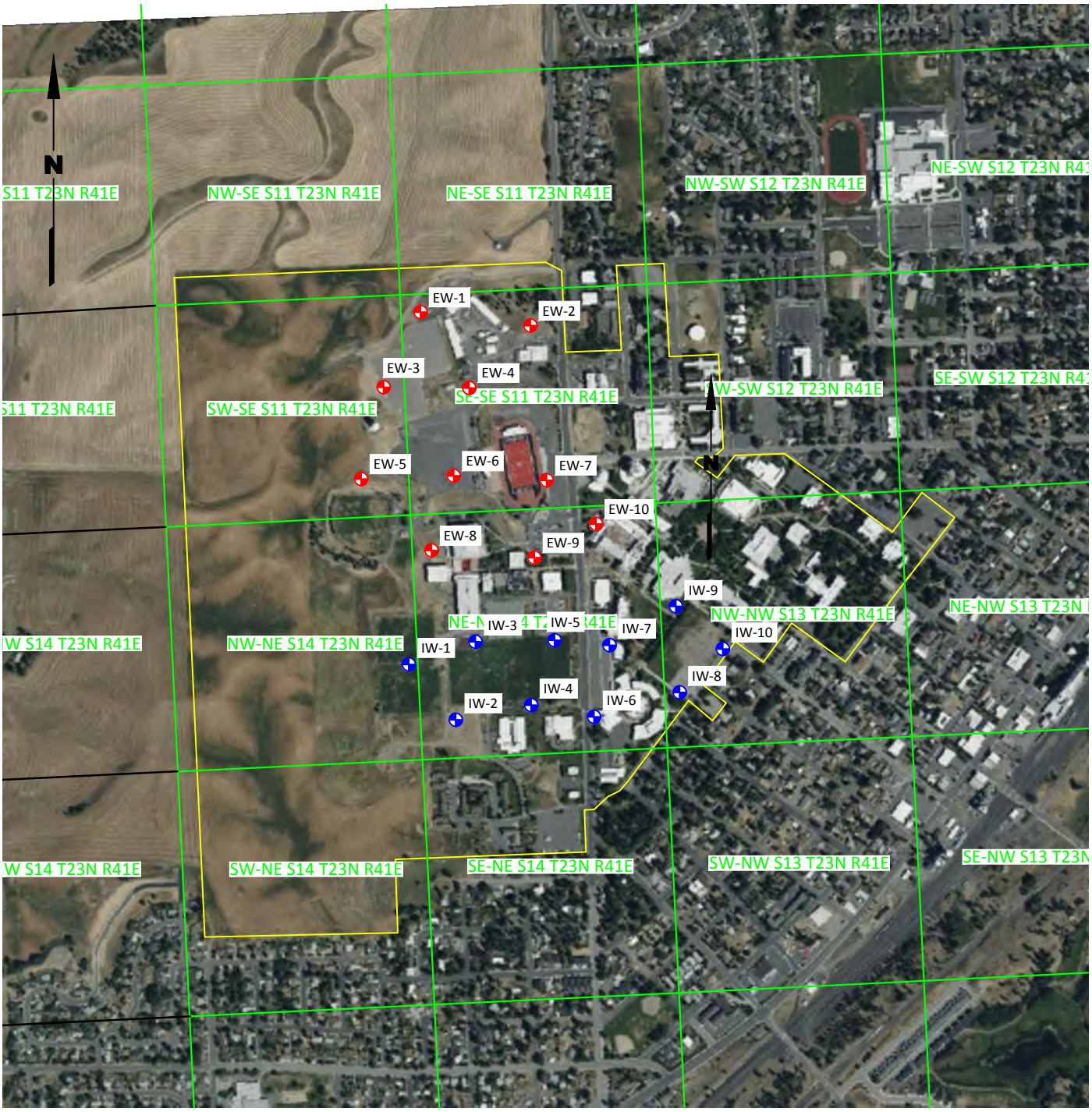

Legend

- Proposed Injection Well Location
- Proposed Extraction Well Location
- Quarter-Quarter Sections (Township & Range)
- EWU Campus Water District Boundary (Place of Use)

0 1000 2000

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth, accessed December 2015

Eastern Washington University
GSHP Hydrogeologic Evaluation
Cheney, Washington

Case Study 3 Well Locations

Figure 5C

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APPENDIX A

Well Logs

Eastern Washington University Well 1 and Well 2R

City of Cheney Well 3R and 4

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PAGE 1

JAN 30 2019

Department of Ecology
Eastern Washington Office

WATER WELL REPORT

DEPARTMENT OF ECOLOGY
State of Washington

Notice of Intent No. WE 32509.

Unique Ecology Well ID Tag No. BLD 014

Well Name (if more than one well): WELL #3R.

Water Right Permit/Certificate No. G3-22439P / G3-22439C

Property Owner Name CITY OF CHENEY.

Well Street Address 210 ERIE ST.

City CHENEY County SPOKANE.

Tax Parcel No. 13123 1207

Was a variance approved for this well? ☐ Yes ☒ No

If yes, what was the variance for?

Type of Work:
☒ Construction
☐ Decommission ⟹ Original installation NOI No.

Proposed Use: ☐ Domestic ☐ Industrial ☒ Municipal ☐ Dewatering ☐ Irrigation ☐ Test Well ☐ Other

Construction Type: ☒ New well ☐ Alteration ☐ Deepening ☐ Other

Method: ☐ Driven ☐ Jetted ☐ Cable Tool ☐ Dug ☒ Air ☐ Mud-Rotary

Dimensions: Diameter of boring 19" in. to 752 ft.
Depth of completed well 752 ft.

Location (see instructions on page 2): ☐ WWM or ☐ EWM
SW ¼-¼ of the SW ¼ Section 12 Township 23N Range 41E.

Latitude (Example: 47.12345)

Longitude (Example: -120.12345)

Construction Details:

Casing	Liner	Diameter	From	To	Wall Thickness	Steel	PVC Welded	Thread
☒	☐	20 in.	0	116	.375 in.	☒	☒	☐
☒	☐	16 in.	+24	449	.375 in.	☒	☒	☐
☐	☐	____ in.	____	____	____ in.	☐	☐	☐
☐	☐	____ in.	____	____	____ in.	☐	☐	☐

Perforations: ☐ Yes ☒ No Type of perforator used
No. of perforations Size of perforations in. by in.
Perforated from ft. to ft. below ground surface

Screens: ☐ Yes ☒ No ☐ K-Packer ⟹ Depth ft.
Manufacturer's Name
Type Model No.
Diameter in. Slot size in. from ft. to ft.
Diameter in. Slot size in. from ft. to ft.

Sand/Filter pack: ☐ Yes ☒ No Size of pack material in.
Materials placed from ft. to ft.

Surface Seal: ☒ Yes ☐ No To what depth? 444 ft.
Material used in seal CEMENT GROUT
Did any strata contain unusable water? ☒ Yes ☐ No
Type of water? 5-10 GPM Depth of strata 150-160 FT
Method of sealing strata off 16" CASING & CEMENT GROUT

Pump: Manufacturer's Name Type:
H.P. Pump intake depth: ft. Designed flow rate: gpm

Water Levels: Land-surface elevation above mean sea level ft.
Stick-up of top of well casing 2 ft. above ground surface
Static water level 296.5 ft. below top of well casing Date JAN 8/19
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (cap, valve, etc.)

Well Tests:
Was a pumping test performed? ☐ No ☒ Yes ⟹ by whom? BSE-NW
Yield 1500 gpm with 626 ft. drawdown after 24 hrs.
Yield gpm with ft. drawdown after hrs.
Yield gpm with ft. drawdown after hrs.

Recovery data (time = zero when pump is turned off -- water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
5M	313.85	30M	304.45		
10M	310.28	60M	302.16		
15M	307.97				

Date of pumping test JAN 8/19

Bailer test gpm with ft. drawdown after hrs.
Air test gpm with stem set at ft. for hrs. Date
Artesian flow gpm
Temperature of water 70.7 °F Was a chemical analysis made? ☒ Yes ☐ No

Driller's Log/Construction or Decommission Procedure

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. Use additional sheets if necessary.

Material	From	To
Top Soil & OLD Drill cuttings	0	9
Red Clay.	9	16
Reddish Gray Broken Basalt	16	33.
Dark Brown Hard Clay	33	38.
Soft Clay & Broken Basalt	38	45.
Medium Hard Gray Basalt	45	52
Clay & Broken Basalt	52	58.
Broken Basalt	58	67
Clay & Broken Basalt	67	72
Red Clay & Broken Basalt	72	78
Brown Clay & Broken Basalt	78	80.
Medium Hard Basalt	80	90
Clay & Broken Basalt	90	110.
Medium Hard Gray Basalt	110	137.
Medium Hard Broken Basalt	137	150.
Gray/Light Brown Soft Broken Basalt/Clay (WATER 5-10 GPM)	150	162.
Medium Hard Broken Basalt	162	189
Hard Gray Basalt	189	241.
Broken Basalt & Gray Clay	241	267
Hard Gray Basalt	267	304
Soft Gray Basalt	304	316
Hard Gray Basalt	316	367
Soft Gray Basalt	367	413
Hard Gray Basalt	413	428
Medium Hard Gray & Brown Basalt	428	438
Hard Gray Basalt	438	458
Soft Broken Black Basalt with Green Clay (WATER 400-500 GPM)	458	480

Start Date SEPT 14/18 Completed Date JAN 18/19

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Trainee Driller Print Name Rob Dobush

Signature Rob Dobush

License No. 2820

IF TRAINEE: Sponsor's License No.

Sponsor's Signature

Drilling Company BLUE STAR ENTERPRISES NW INC

Address 2019 BUTLER LOOP.

City, State, Zip RICHLAND WA. 99354.

Contractor's Registration No. BLUESEN942RM Date JAN 21/19.

ECY 050-1-20 (Rev 11/18) *If you need this document in an alternate format, please call the Water Resources Program at 360-407-6872. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.*

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

WATER WELL REPORT

DEPARTMENT OF ECOLOGY State of Washington

Notice of Intent No. WE 32509.

Unique Ecology Well ID Tag No. BLD 014

Additional Well Name (if more than one well):

Water Right Permit/Certificate No.

Property Owner Name

Well Street Address

City County

Tax Parcel No.

Was a variance approved for this well? ☐ Yes ☐ No

If yes, what was the variance for?

Location (see instructions on page 2): ☐ WWM or ☐ EWM

¼-¼ of the ¼ Section Township Range

Latitude (Example: 47.12345)

Longitude (Example: -120.12345)

Type of Work:
☐ Construction
☐ Decommission ⟹ Original installation NOI No.

Proposed Use: ☐ Domestic ☐ Industrial ☐ Municipal ☐ Dewatering ☐ Irrigation ☐ Test Well ☐ Other

Construction Type: ☐ New well ☐ Alteration ☐ Deepening ☐ Other
Method: ☐ Driven ☐ Jetted ☐ Cable Tool ☐ Dug ☐ Air- ☐ Mud-Rotary

Dimensions: Diameter of boring in., to ft.
Depth of completed well ft.

Construction Details:

Casing	Liner	Diameter	From	To	Wall Thickness	Steel	PVC	Welded	Thread
☐	☐	in.			in.	☐	☐	☐	☐
☐	☐	in.			in.	☐	☐	☐	☐
☐	☐	in.			in.	☐	☐	☐	☐
☐	☐	in.			in.	☐	☐	☐	☐

Perforations: ☐ Yes ☐ No Type of perforator used
No. of perforations Size of perforations in. by in
Perforated from ft. to ft. below ground surface

Screens: ☐ Yes ☐ No ☐ K-Packer ⟹ Depth ft.
Manufacturer's Name
Type Model No.
Diameter in. Slot size in. from ft. to ft.
Diameter in. Slot size in. from ft. to ft.

Sand/Filter pack: ☐ Yes ☐ No Size of pack material in.
Materials placed from ft. to ft.

Surface Seal: ☐ Yes ☐ No To what depth? ft.
Material used in seal
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? Depth of strata
Method of sealing strata off

Pump: Manufacturer's Name Type:
H.P. Pump intake depth: ft. Designed flow rate: gpm

Water Levels: Land-surface elevation above mean sea level ft.
Stick-up of top of well casing ft. above ground surface
Static water level ft. below top of well casing Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (cap, valve, etc.)

Well Tests:
Was a pumping test performed? ☐ No ☐ Yes ⟹ by whom?
Yield gpm with ft. drawdown after hrs.
Yield gpm with ft. drawdown after hrs.
Yield gpm with ft. drawdown after hrs.
Recovery data (time = zero when pump is turned off – water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of pumping test
Bailer test gpm with ft. drawdown after hrs.
Air test gpm with stem set at ft. for hrs. Date
Artesian flow gpm
Temperature of water °F Was a chemical analysis made? ☐ Yes ☐ No

Driller's Log/Construction or Decommission Procedure

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. Use additional sheets if necessary.

Material	From	To
Decomposed Basalt + Brown Clay + wood	480	485.
Soft Broken Basalt + Green Clay	485	528.
Broken Gray Basalt	528	540.
Soft Broken Basalt with Red Chips	540	546.
(Water 700-800 gpm)		
Medium Hard Gray Broken Basalt	546	593
Hard Gray Basalt	593	646
Broken Gray Basalt	646	648
Hard Black Basalt	648	654.
Hard Broken Black Basalt + Red Chips	654	656.
(Water 800-900 gpm)		
Hard Black Basalt	656	673.
Hard Broken Black Basalt + Red Chips	673	676.
(Water 900-1000 gpm)		
Hard Black Basalt	676	680
Hard Broken Black Basalt + Brown Clay	680	690
(Water +1000 GPM)		
Hard Black Basalt	690	719.
Hard Broken Black Basalt	719	722.
Hard Black Basalt	722	738.
Hard Broken Black Basalt	738	740.
Hard Black Basalt	740	752.
(Water +1100 GPM)		

Start Date Completed Date

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Trainee ☐ PE – Print Name

Signature

License No.

IF TRAINEE: Sponsor's License No.

Sponsor's Signature

Drilling Company

Address

City, State, Zip

Contractor's Registration No. Date

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

Water Right Permit No. _____

(1) OWNER: Name CITY OF CHENEY Address CHENEY WA.

(2) LOCATION OF WELL: County SPOKANE CO. SW ¼ NW ¼ Sec 13 T. 23 N., R. 41 W.M.

(2a) STREET ADDDRESS OF WELL (or neareat address) 7TH + WASHINGTON CHENEY WA

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☒ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) # 4

Abandoned ☐ New well ☐ Method: Dug ☐ Bored ☐
Deepened ☒ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 12"X10"X8" inches.
Drilled 2136 feet. Depth of completed well 2136 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from +2 ft. to 800 ft.
Welded ☒ 10 " Diam. from 784 ft. to 1226 ft.
Liner inatalled ☒
Threaded ☐ 8 " Diam. from 1196 ft. to 1936 ft.

Perforations: Yes ☒ No ☐
Type of perforator used MILL CUT
SIZE of perforationa ¼ in. by 3 in.
240 perforationa from 1558 ft. to 1573 ft.
4896 perforations from 1630 ft. to 1936 ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒
Manufacturer'a Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot aize _____ from _____ ft. to _____ ft.

Gravel packed: Yea ☐ No ☒ Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 1226 ft.
Material used in seal NEAT CEMENT GROUT
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of atrata _____
Method of sealing atrata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean aea level _____ ft.
Static level 269 ft. below top of well Date 6-17-91
Arteaian preaaure _____ lbs. per aquare inch Date _____
Arteaian water ia controlled by _____ (Cap, valva, atc.))

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yea ☐ No ☒ If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hra.
" " " "
" " " "

Recovery data (time taken aa zero when pump turned off) (water level measured from well top to water level)

Tima	Water Level	Tima	Water Level	Tima	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with atem aet at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water 72° Was a chemical analyais made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, aize of material and structure, and ahow thickness of aquifera and the kind and nature of the material in each atratum penetrated, with at leaat one entry for each change of information.

MATERIAL	FROM	TO
SANDY CLAY + BASALT	616	692
GREY BASALT	692	722
BROWN CLAY	722	753
GREY BASALT	753	880
DARK GRAY CLAY & BASALT	880	941
BLACK BASALT	941	956
GREY BASALT	956	1216
GREY BASALT FRACTURED	1216	1240
TAN CLAY	1240	1375
GREY CLAY	1375	1480
BROWN CLAY	1480	1555
BLACK QUARTSITE FRAC ★	1555	1575
GREY CLAY	1575	1622
GREY QUARTSITE ★	1622	1672
GREEN QUARTSITE ★	1672	1740
GREY QUARTSITE ★	1740	1802
GREEN QUARTSITE ★	1802	1933
DARK GRAY QUARTSITE ★	1933	2136

★ INDICATES WATER BEARING ZONE

RECEIVED
AUG 30 1991
DEPARTMENT OF ECOLOGY
SPOKANE REGIONAL OFFICE

Work started 4-12 , 1991 Completed 7-31 , 1991

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME HOLMAN DRILLING CORP (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address E3410 9TH AVE SPOKANE WA.

(Signed) Rudolf Holman (WELL DRILLER) License No. 0189

Contractor's Registration No. HO-IH-AD-C4-080A Date AUG 28 , 1991

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

180477

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

- [x] Construction
- [ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W 111976

PROPOSED USE: [ ] Domestic [ ] Industrial [x] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other

TYPE OF WORK: Owner's number of well (if more than one)

[x] New well [ ] Reconditioned [ ] Deepened — *Method:* [ ] Dug [ ] Bored [ ] Driven [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 12 inches, drilled 839 ft.
Depth of completed well 839 ft.

CONSTRUCTION DETAILS

Casing Installed: [x] Welded 20" Diam. from 0 ft. to 65 ft.
[x] Liner installed 16" Diam. from 0 ft. to 461 ft.
[ ] Threaded 14" Diam. from 318 ft. to 630 ft.

Perforations: [ ] Yes [x] No
Type of perforator used
SIZE of perfs in. by in. and no. of perfs from ft. to ft.

Screens: [ ] Yes [x] No [ ] K-Pac Location
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel/Filter packed: [ ] Yes [x] No [ ] Size of gravel/sand
Materials placed from ft. to ft.

Surface Seal: [x] Yes [ ] No To what depth? 461 ft.
Material used in seal NEAT CEMENT
Did any strata contain unusable water? [ ] Yes [x] No
Type of water? Depth of strata
Method of sealing strata off

PUMP: Manufacturer's Name
Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 277 ft. below top of well Date 4-27-04
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [x] No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test N/A gal./min. with ft. drawdown after hrs.
Airtest N/A gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? [ ] Yes [x] No

CURRENT
Notice of Intent No. W 111976
Unique Ecology Well ID Tag No. AGC 098
Water Right Permit No. G3-25018 & 8997
Property Owner Name EASTERN WASHINGTON UNIVERSITY
Well Street Address 526 5TH STREET - PLANT UTILITIES BUILDING
City CHENEY **County** SPOKANE
Location NE 1/4-1/4 NW 1/4 Sec 13 Twn 23 R 41 EWM or WWM [x] circle one
Lat/Long (s, t, r Still **REQUIRED**) Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Tax Parcel No.

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
FILL MATERIAL	0	5
CLAY, BROWN	5	12
CLAY, BROWN W/ BOULDERS	12	54
BASALT, BROWN, SOFT	54	65
BASALT, BLACK, HARD	65	249
BASALT, BLACK, SOFT	249	254
BASALT, BLACK, HARD	254	390
BASALT, BLACK, SOFT - H2O	390	395
BASALT, BLACK, MED.	395	424
BASALT, BLACK, FRAC - H2O	424	433
CLAY, GRAY	433	437
BASALT, BLACK, MED.	437	443
BASALT, BLACK, HARD	443	449
BASALT, BLACK, SOFT	449	450
BASALT, BLACK, MED.	450	457
BASALT, BLACK, HARD	457	463
BASALT, BLACK, VASICULAR	463	469
BASALT, BLACK, MED.	469	497
BASALT, BLACK, HARD	497	503
BASALT, BLACK, SOFT	503	513
BASALT, BLACK, HARD	513	540
BASALT, BLACK, MED.	540	549
SAND, GRAY, FINE - H2O	549	611
CLAY, BROWN	611	624
BASALT, BLACK, SOFT	624	626
CLAY, GRAY AND GREEN	626	644
BASALT, BLACK, SOFT - MED.	644	660
BASALT, BLACK, HARD	660	791
BASALT, BLACK, MED. - H2O	791	796
THIS ZONE PRODUCING GRAVELS		
BASALT, BLACK, HARD	796	819

Start Date 7-25-03 Completed Date 4-27-04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[x] Driller [ ] Engineer [ ] Trainee Name (Print) GLEN FRACHISEUR
Drilling Company INTERMOUNTAIN DRILLING
Driller/Engineer/Trainee Signature
Address 3419 HIGHWAY 57
Driller or trainee License No. 2544
City, State, Zip PRIEST RIVER, ID 83856

If TRAINEE,
Driller's Licensed No.
Driller's Signature

Contractor's Registration No. INTERDI088LD Date 9-28-05

RECEIVED SEP 29 2005 DEPARTMENT OF ECOLOGY

Ecology is an Equal Opportunity Employer.

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

- [x] Construction
- [ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W 111976

CURRENT
Notice of Intent No. W 111976

Unique Ecology Well ID Tag No. AGC 098

Water Right Permit No. G3-25018 & 8997

Property Owner Name EASTERN WASHINGTON UNIVERSITY

Well Street Address 526 5TH STREET - PLANT UTILITIES BUILDING

City CHENEY County SPOKANE

Location NE 1/4-1/4 NW 1/4 Sec 13 Twn 23 R 41 EWM [x] or WWM [ ] circle one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

PROPOSED USE: [ ] Domestic [ ] Industrial [x] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____

[x] New well [ ] Reconditioned [ ] Deepened *Method:* [ ] Dug [ ] Bored [ ] Driven [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 12 inches, drilled 839 ft. Depth of completed well 839 ft.

CONSTRUCTION DETAILS

Casing Installed:
- [x] Welded 20" Diam. from 0 ft. to 65 ft.
- [x] Liner installed 16" Diam. from 0 ft. to 461 ft.
- [ ] Threaded 14" Diam. from 318 ft. to 630 ft.

Perforations: [ ] Yes [x] No
Type of perforator used _____
SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: [ ] Yes [x] No [ ] K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: [ ] Yes [x] No [ ] Size of gravel/sand _____
Materials placed from _____ ft. to _____ ft.

Surface Seal: [x] Yes [ ] No To what depth? 461 ft.
Material used in seal NEAT CEMENT
Did any strata contain unusable water? [ ] Yes [x] No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 277' ft. below top of well Date 4-27-04
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [x] No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test N/A gal./min. with _____ ft. drawdown after _____ hrs.
Airtest N/A gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? [ ] Yes [x] No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
BASALT, BLACK, SOFT - SAND, GRAY	819	822
ENCOUNTERED GRAY SAND @ 822'		
BASALT, BLACK, HARD	822	839

Start Date 7-25-03 Completed Date 4-27-04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[x] Driller [ ] Engineer [ ] Trainee Name (Print) GLEN FRACHISEUR
Driller/Engineer/Trainee Signature _____
Driller or trainee License No. 2544

Drilling Company INTERMOUNTAIN DRILLING
Address 3419 HIGHWAY 57
City, State, Zip PRIEST RIVER, ID 83856

If TRAINEE,
Driller's Licensed No. _____
Driller's Signature _____

Contractor's Registration No. INTERDI088LD Date 9-28-05

Ecology is an Equal Opportunity Employer.

RECEIVED
SEP 29 2005
DEPARTMENT OF ECOLOGY

ECY 050-1-20 (Rev 3/05)

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)* 381294

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION*

Notice of Intent Number _____

PROPOSED USE: ☐ Domestic ☐ Industrial ☒ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) 1

☐ New well ☒ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS: Diameter of well _ inches, drilled 0 ft. Depth of completed well 839 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 8" Diam. from 415 ft. to 643 ft.
☐ Liner installed ____" Diam. from ____ ft. to ____ ft.
☐ Threaded ____" Diam. From ____ ft. to ____ ft.

Perforations: ☒ Yes ☐ No

Type of perforator used _____

SIZE of perfs 1/4in. by 2 in. and no. of perfs 400 from 460 ft. to 540ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☐ Yes ☒ No To what depth? ___ft.

Material used in seal _____

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 282 ft. below top of well Date 10/14/2009

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? H2O

Yield: 354 gal./min. with 47.2ft. drawdown after 24 hrs.

Yield: 354 gal./min. with 25 ft. drawdown after 1 hrs.

Yield: _____gal./min. with _____ft. drawdown after _____hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _ gal./min. with _____ft. drawdown after _____hrs.

Airtest 400+ gal./min. with stem set at _____ft. for _____hrs.

Artesian flow _____g.p.m. Date _____

Temperature of water COLD Was a chemical analysis made? ☐ Yes ☒ No

CURRENT

Notice of Intent No. WE10084

Unique Ecology Well ID Tag No. APC-936

Water Right Permit No. _____

Property Owner Name Eastern Washington University

Well Street Address 526 5th STreet Plant Utilities Bldng

City Cheney County Spokane

Location NE1/4-1/4 NW1/4 Sec 13 Twn 23 R 41E **(s, t, r Still REQUIRED)** EWM ☒ Or WWM ☐

Lat/Long Lat Deg ____ Lat Min/Sec ____
Long Deg ____ Long Min/Sec ____

Tax Parcel No. (Required) 13141.0001

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Perforated 14" casing	460	540
Cut & remove 14" casing at	455	455
Install 8" casing	415	643
Cement grout pumped from	643	540
Not able to keep cement in		
hole about 540'. Filled		
thief zone with 3/8 Bentonite		
Chips	540	415
Cleaned out well to 839'		
Developed well, small trace		
of sands		
REVISED April 30, 2010		

RECEIVED
MAY 10 2010
DEPARTMENT OF ECOLOGY
EASTERN REGIONAL OFFICE

Start Date 7/6/2009 Completed Date 12/16/09

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) LOUIE HANNER

Driller/Engineer/Trainee Signature

Driller or trainee License No. 1472

IF TRAINEE; Driller's License No:

Driller's Signature:

Drilling Company H2O WELL SERVICE INC.

Address 582 W. HAYDEN AVE.

City, State, Zip HAYDEN , ID, 83835

Contractor's Registration No. H2OWESI101DW Date 10/15/09

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

Sampler Symbol Descriptions

- **2.4-inch I.D. split barrel**
- **Standard Penetration Test (SPT)**
- **Shelby tube**
- **Piston**
- **Direct-Push**
- **Bulk or grab**
- **Continuous Coring**

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Material Description Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
PPM	Parts per million
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

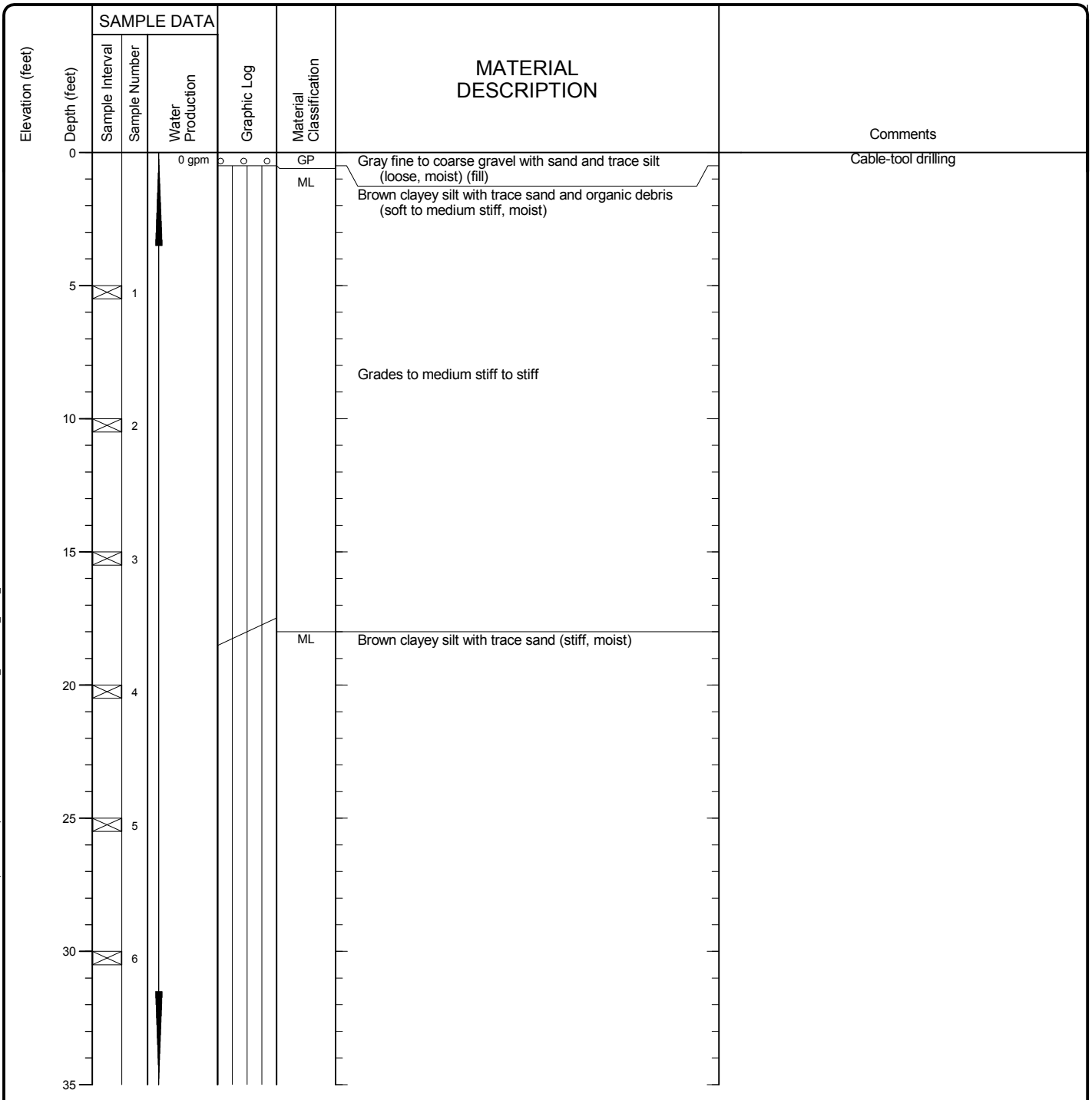
KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE C-1

Drilled Start 12/3/2014 End 3/20/2015	Total Depth (ft) 1145	Logged By JER Checked By JWP	Driller Blue Star Enterprises Northwest	Drilling Method Cable-Tool (Overburden) Air Rotary (Rock/Interbeds)
Sampling Method: Grab		Drilling Equipment 72 Speed Star (Cable-Tool) Portadrill TLS (Air Rotary)		A production well (Ecology No. 8IN 135) was installed to a depth of 1145 (ft).
Surface Elevation (ft) Vertical Datum Undetermined		Top of Casing Elevation (ft)		Groundwater: Date Measured 4/22/2015; Depth to Water (ft) 349.10; Elevation (ft)
Latitude Longitude		Horizontal Datum		

Notes: Well 2R is constructed of 16-inch O.D. steel casing from -1 to approximately 663 feet in depth, 14-inch O.D. steel casing from approximately 650 to 755 feet in depth and 10-inch I.D. steel liner assembly from approximately 747 to 1, 145 feet in depth.



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 1 of 27

Elevation (feet)	Depth (feet)	Sample Interval	Sample Number	Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
	35		7	0 gpm				
						ML	Brown clayey silt (medium stiff to stiff, moist)	
	40		8					
	45		9					
	50		10			ML	Brown clayey silt with gravel, sand and occasional cobbles (medium stiff to stiff, moist)	
						Basalt	Basalt (weathered dense interior), medium gray to brown, fine to medium grained, moderately weathered, abundant light brown oxidized surfaces, occasional secondary mineralization of fracture surfaces, non-vesicular, sparsely microphyric	Air rotary drilling begins at 52 feet
	55		11					
	60		12					
	65		13					
						Basalt	Basalt (dense interior), medium to dark gray, medium grained, slightly weathered, occasional oxidized surfaces, no secondary mineralization, non-vesicular, occasional subrounded fine gravel (basalt), sparsely microphyric	
	70		14					
	75		15					
						Basalt		

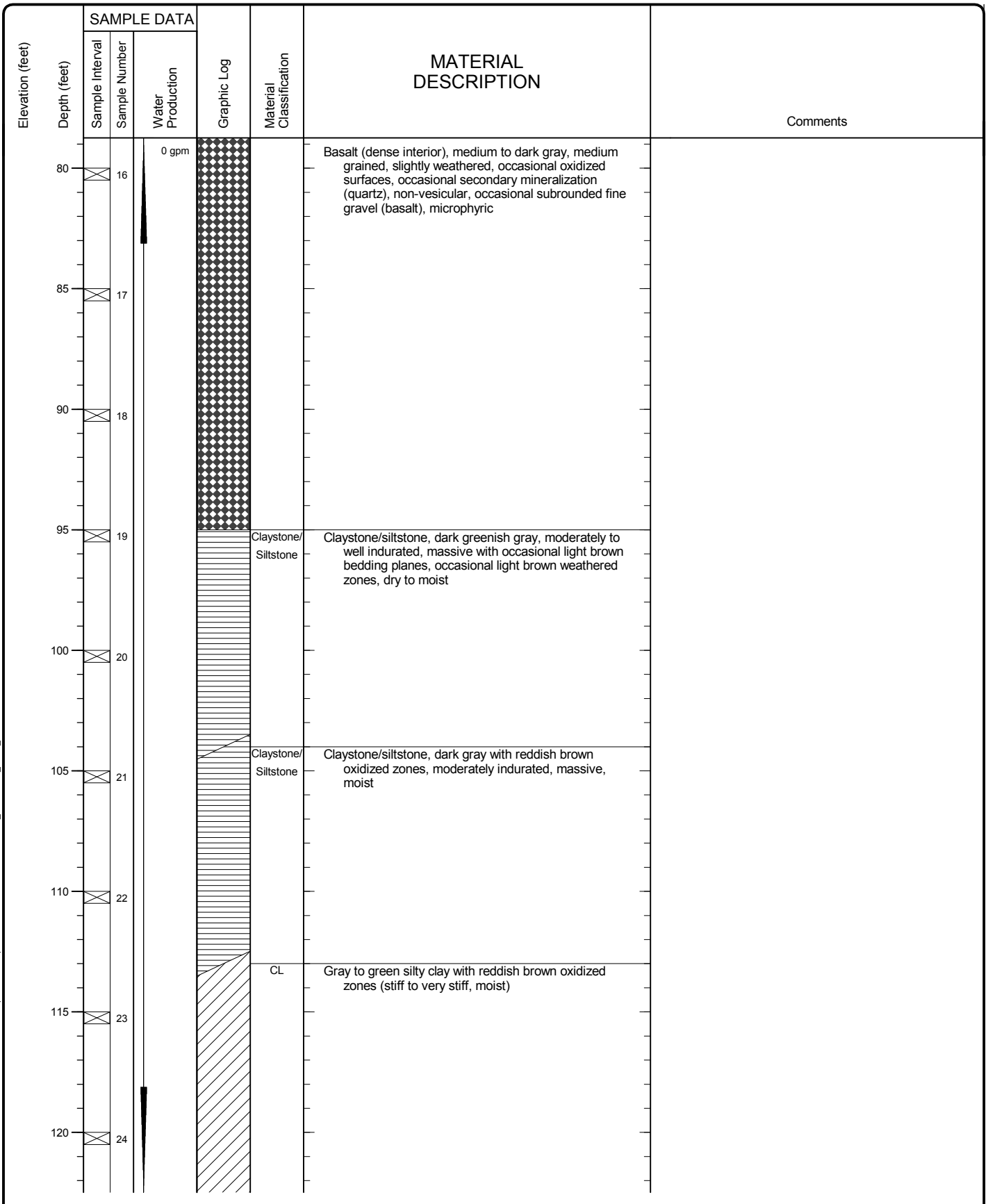
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 2 of 27



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project:	EWU Class A Water System Upgrades
Project Location:	Cheney, Washington
Project Number:	3170-026-00

Figure C-2
Sheet 3 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
				0 gpm				
	125	⊠	25					
						Claystone/ Siltstone	Claystone/siltstone, medium gray to brown, moderately to well indurated, abundant bedding planes, dry to moist	
	130	⊠	26					
	135	⊠	27			Basalt	Basalt (weathered dense interior), medium to dark gray, medium grained, moderately weathered, occasional oxidized surfaces, apparent secondary alteration (chloritic) of groundmass, non-vesicular, aphyric	
	140	⊠	28					
						Basalt	Basalt (weathered dense interior), medium to dark gray, medium grained, slightly to moderately weathered, no oxidized surfaces or secondary mineralization, non-vesicular, aphyric	
	145	⊠	29					
						Basalt	Basalt (weathered dense interior) medium to dark gray, medium grained, moderately weathered, abundant oxidation and apparent chloritic alteration of groundmass and fracture surfaces, occasional oxidation of fracture surfaces, non-vesicular, aphyric	
	150	⊠	30					
	155	⊠	31					
						Basalt	Basalt (dense interior), medium to dark gray, medium grained, slightly to moderately weathered, no oxidized surfaces or secondary mineralization, non-vesicular, sparsely microphyric	
	160	⊠	32					
	165	⊠	33					

Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 4 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
				0 gpm				
	170	☒	34					
						Basalt	Basalt (weathered interflow), olive gray, fine to medium grained, moderately weathered, minor oxidation and apparent chloritic groundmass alteration, slightly vesicular with occasional infilling (clay), aphyric	
	175	☒	35					
						Basalt	Basalt (dense interior), dark gray, fine to medium grained, fresh to slightly weathered, no oxidized or mineralized surfaces, non-vesicular, aphyric	
	180	☒	36					
	185	☒	37					
	190	☒	38					
						Basalt	Basalt (dense interior), dark gray, fine to medium grained, slightly weathered, no oxidized surfaces, occasional mineralized (quartz and/or epidote) surfaces, occasional vesicular subrounded clasts in generally non-vesicular rock mass, no infilling of vesicles, aphyric	
	195	☒	39					
	200	☒	40					
						Basalt	Basalt (dense interior), medium to dark gray, medium grained, fresh to slightly weathered, no oxidized or mineralized surfaces, abundant small (<1 millimeter) vesicles grading to non-vesicular at about 210 feet, aphyric	
	205	☒	41					

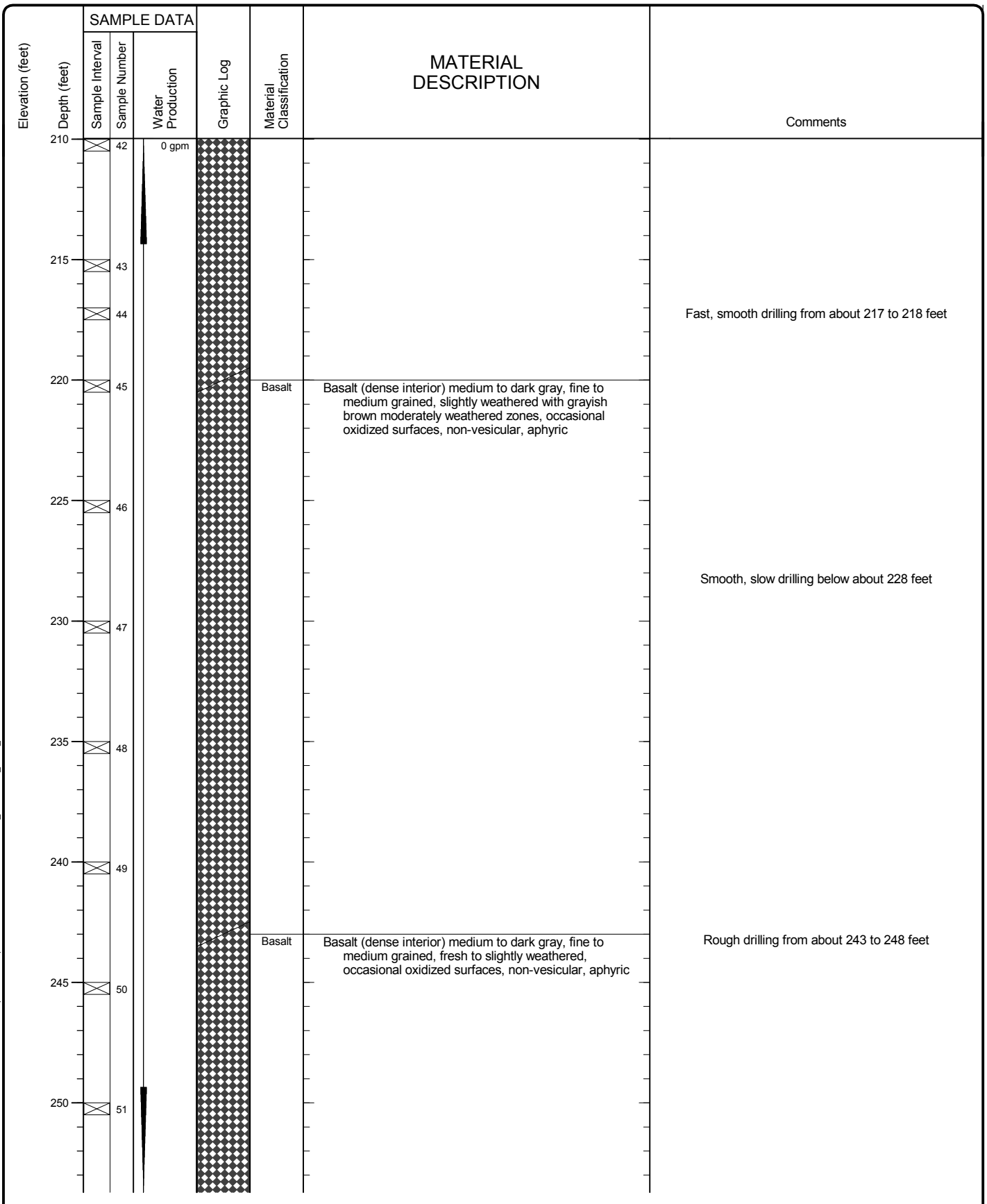
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 5 of 27



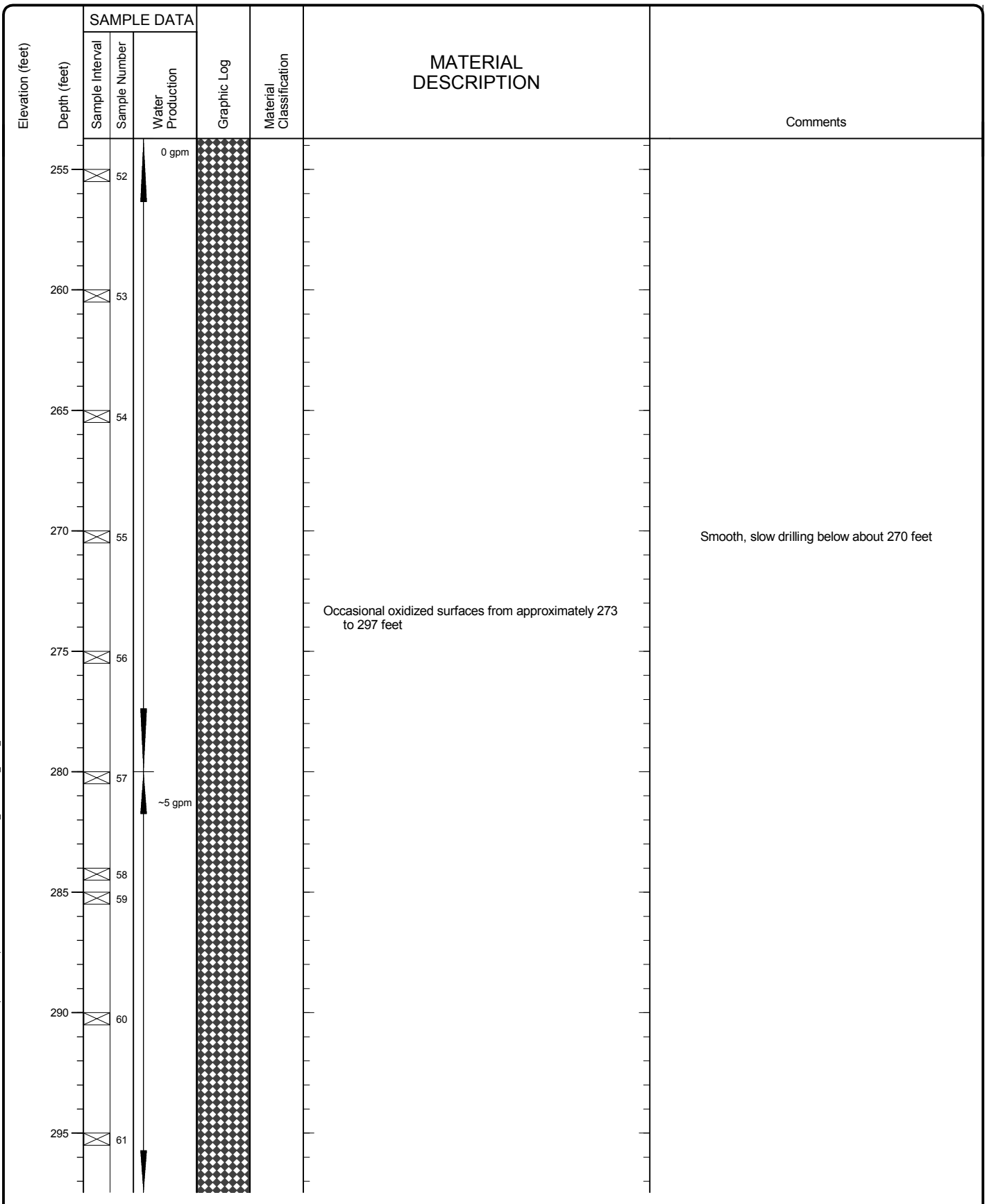
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 6 of 27



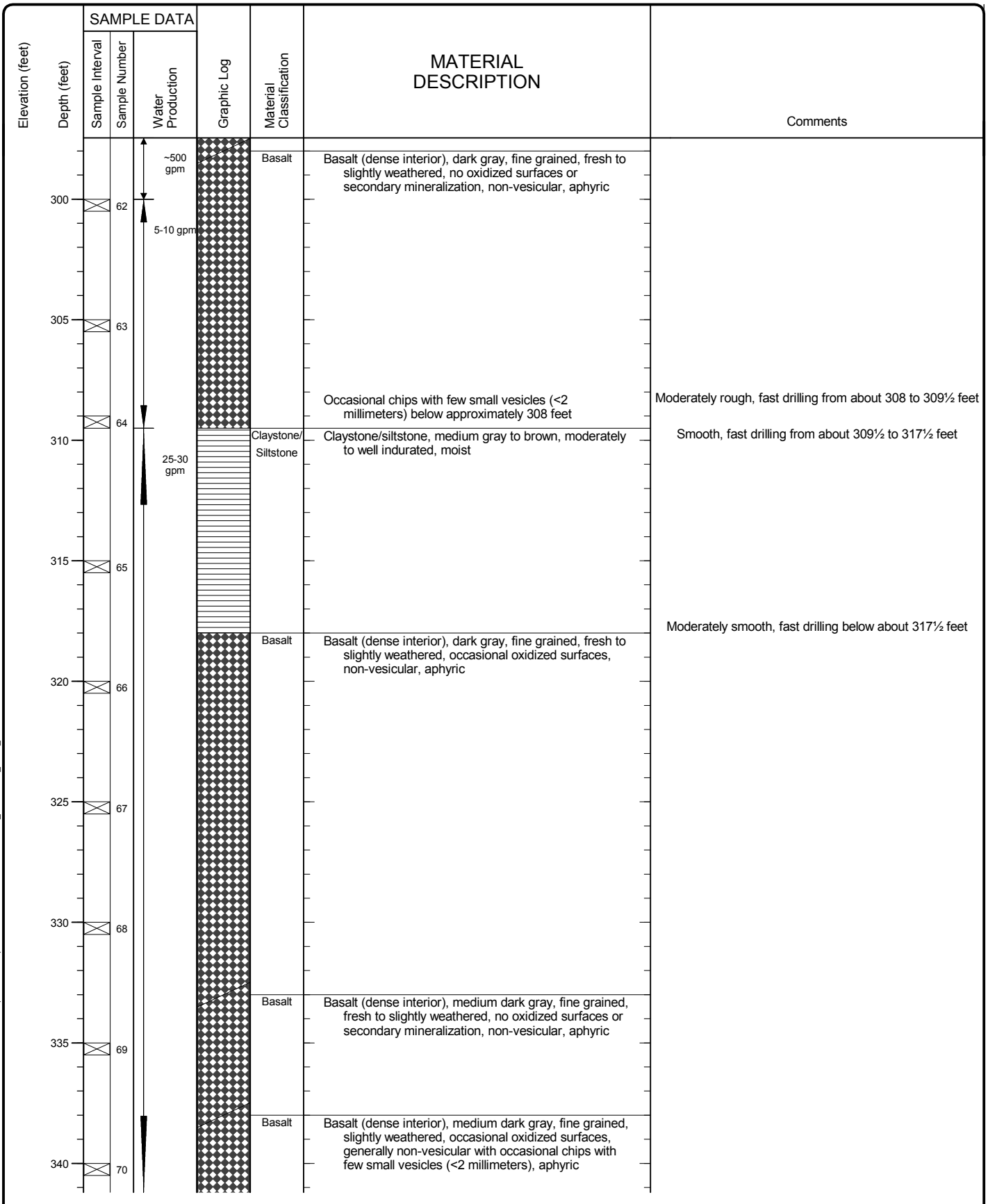
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 7 of 27



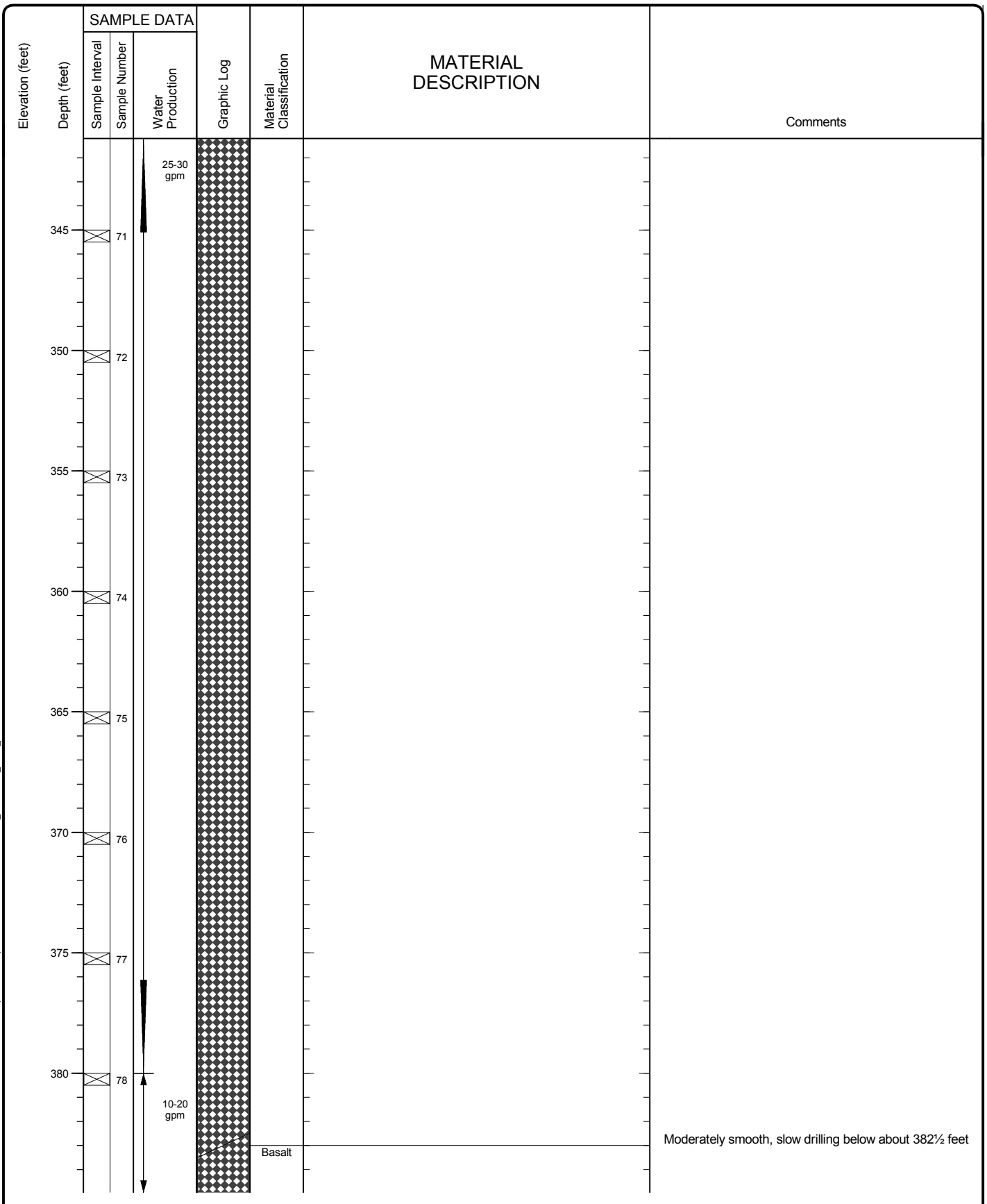
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 8 of 27



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 9 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
	385	⊠	79	10-20 gpm			Basalt (dense interior) medium dark gray, fine grained, fresh to slighly weathered, occasional oxidized surfaces, non-vesicular, aphyric to sparsely microphyric	
	390	⊠	80					
	395	⊠	81					Moderately smooth, moderately slow drilling below about 397 feet
						Basalt	Basalt (dense interior), medium dark gray, fine to medium grained, slightly weathered, occasional oxidized surfaces, non-vesicular with occasional chips with few small vesicles (<2 millimeters), aphyric to sparsely microphyric	
	400	⊠	82					
	405	⊠	83					
	410	⊠	84					
	415	⊠	85					
						Basalt	Basalt (dense interior), medium dark gray, fine to medium grained, fresh to slightly weathered, no oxidized surfaces or secondary mineralization, non-vesicular with occasional chips with few small vesicles (<2 millimeters), microphyric	Moderately smooth, slow drilling below about 418 feet
	420	⊠	86					
	425	⊠	87					

Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 10 of 27

Spokane: Date:6/22/15 Path:\\SPO\PROJECTS\3\3170026\00\GINT\3170026O0.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI_GEOTECH_WITH_GPM

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
	430	☒	88	10-20 gpm 30-50 gpm				
	435	☒	89	20-30 gpm		Basalt	Basalt (interflow), medium dark gray, fine grained, fresh to slightly weathered, occasional oxidized surfaces, abundant to few vesicles, microphyric	Moderately rough, moderately fast drilling from about 435 to 437 feet Moderately smooth, fast drilling below about 437 feet
	440	☒	90	~100 gpm		Claystone/ Siltstone	Claystone/siltstone, brown and gray mottled, moderately indurated, massive with scattered reddish brown oxidized lenses, moist	
		☒	91	200-300 gpm				
	445	☒	92			Basalt	Basalt (interflow), medium dark gray, medium grained, slightly weathered, occasional oxidized surfaces, abundant vesicles (up to 5 millimeters), occasional fracture surfaces with green chloritic/epidotic alteration, abundantly microphyric	
	450	☒	93					
	455	☒	94					
	460	☒	95					
	465	☒	96					
						Basalt	Basalt (dense interior), medium dark gray, fine to medium grained, slightly weathered, occasional oxidized surfaces, few vesicles (up to 2 millimeters) to non-vesicular, abundantly microphyric	Moderately smooth, slow drilling below about 468 feet
	470	☒	97					

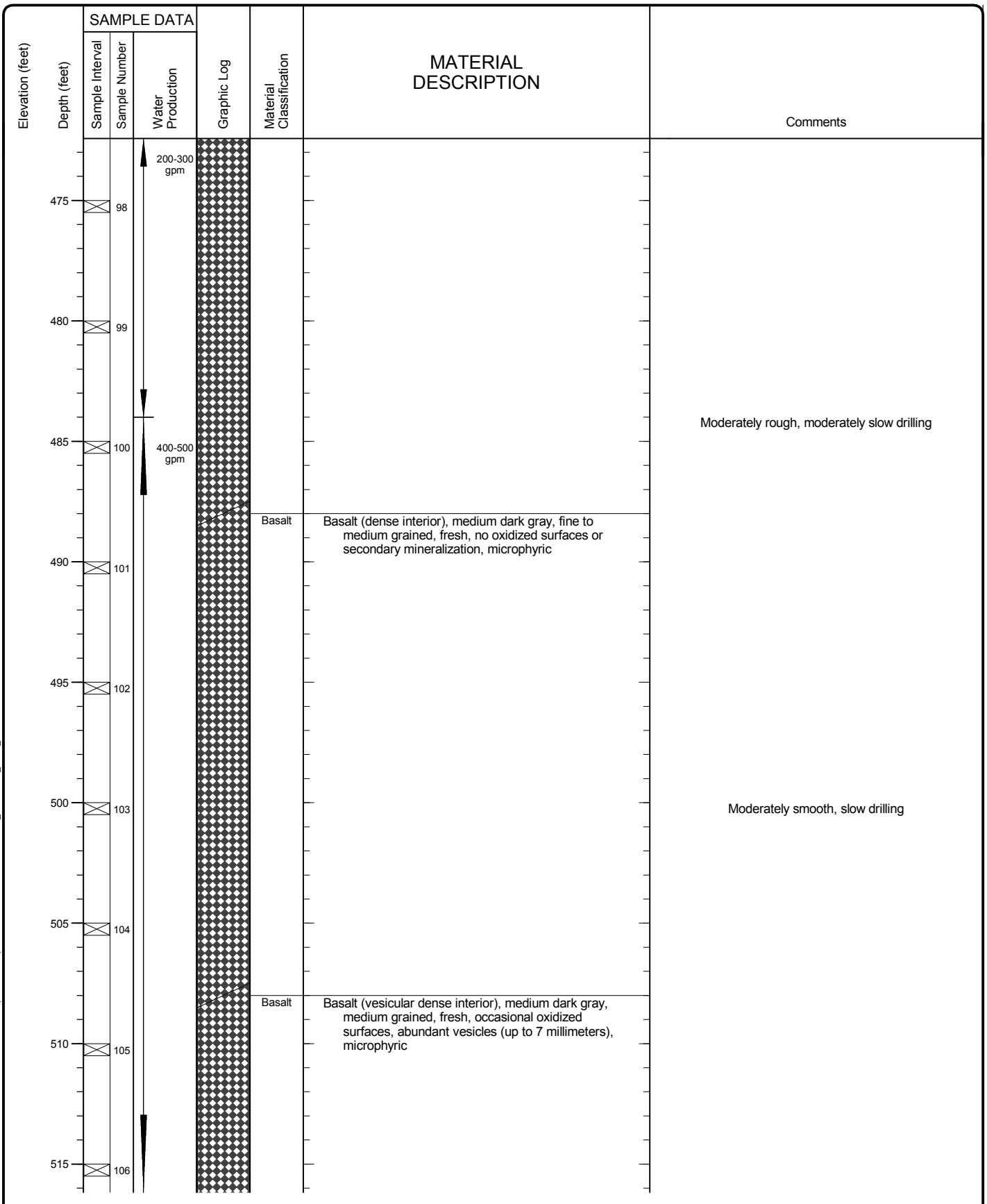
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 11 of 27



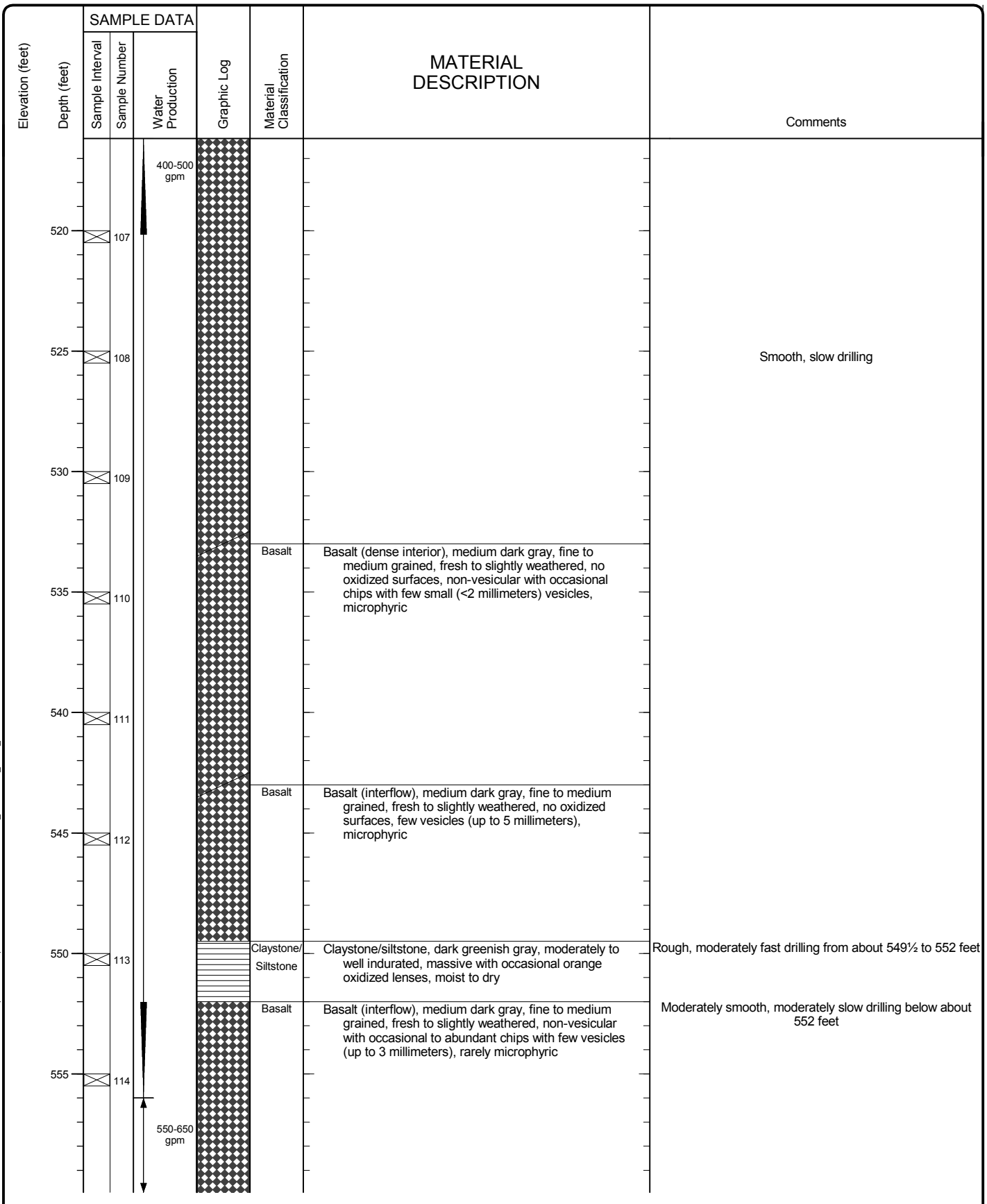
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 12 of 27



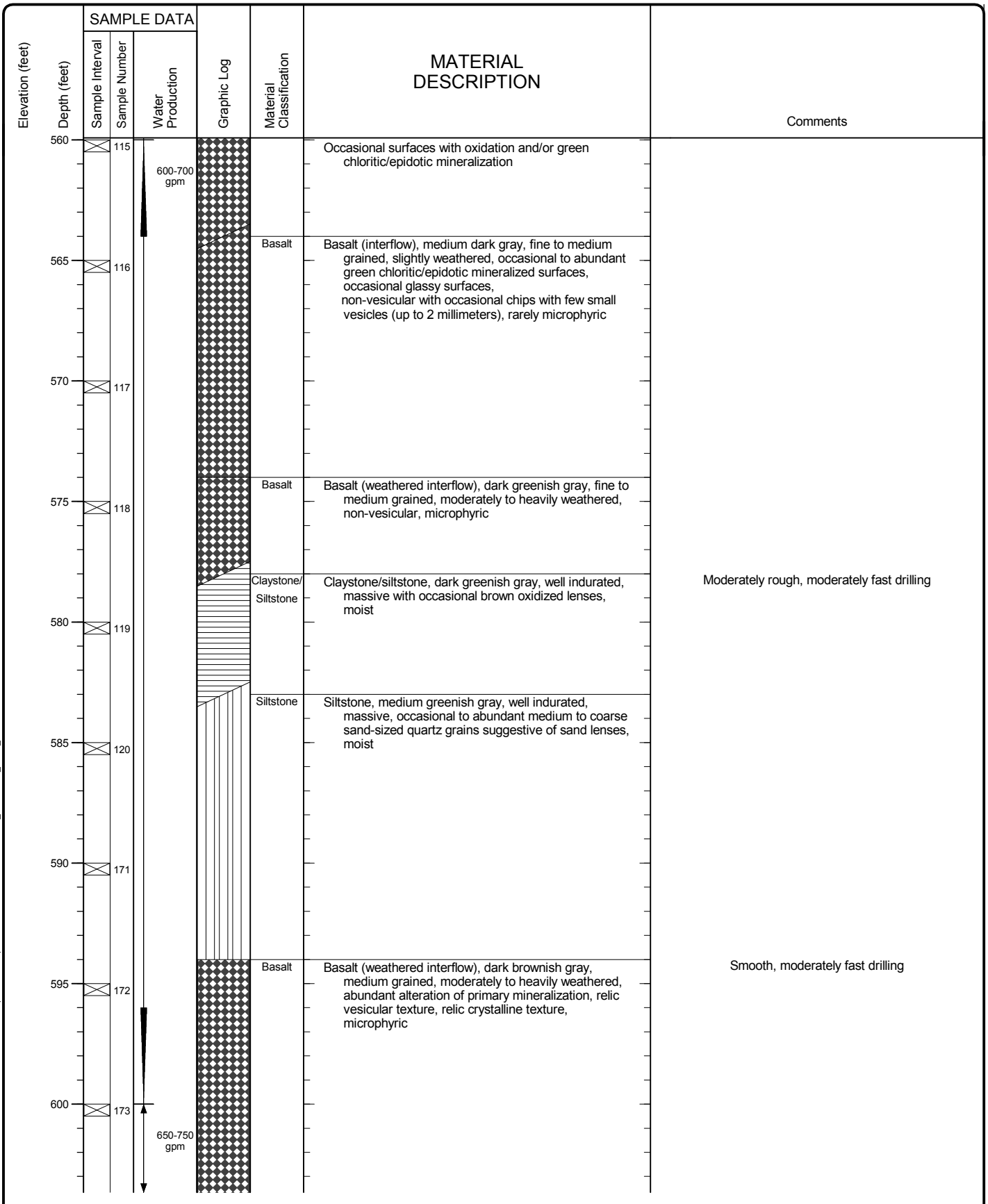
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 13 of 27



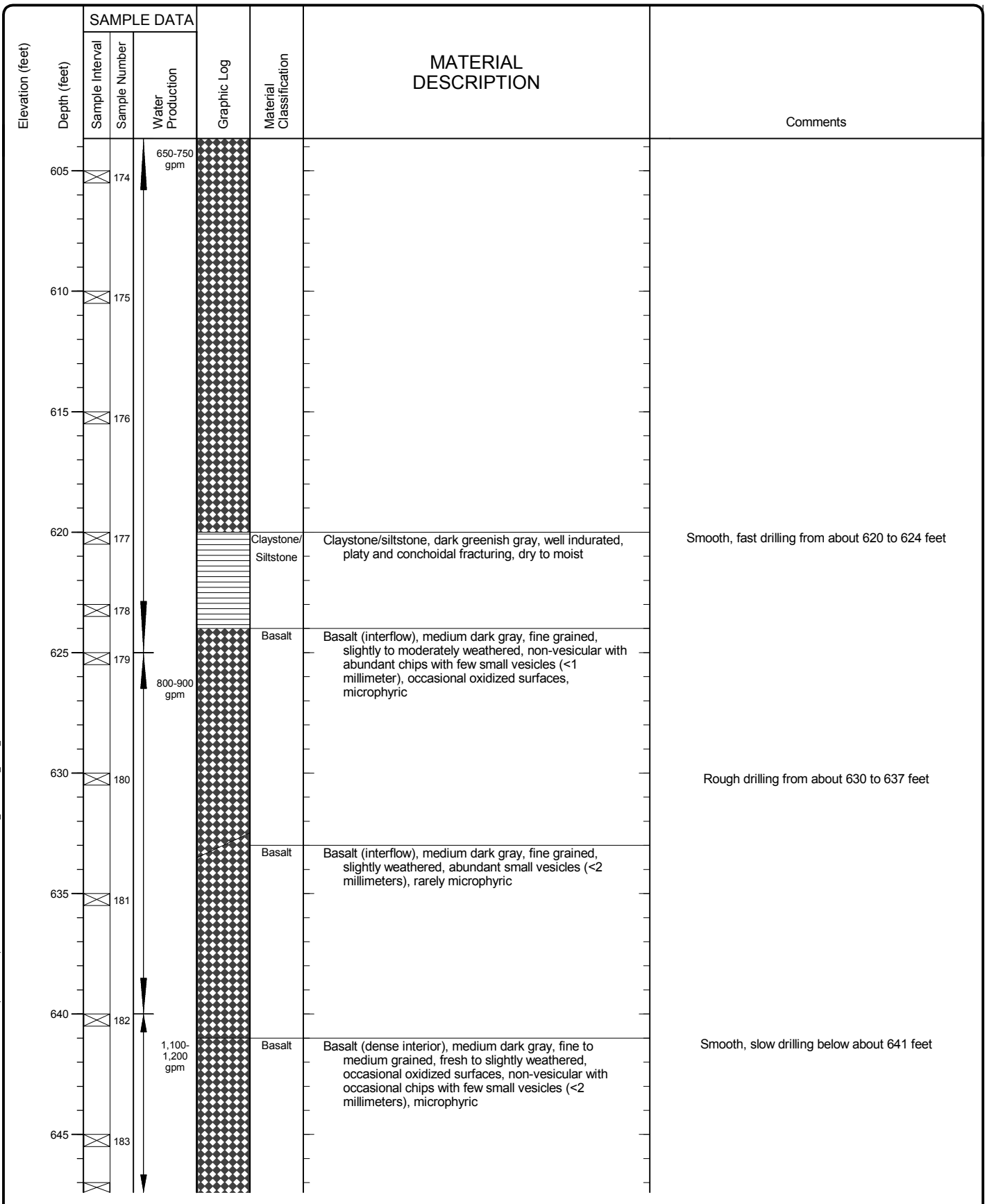
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 14 of 27



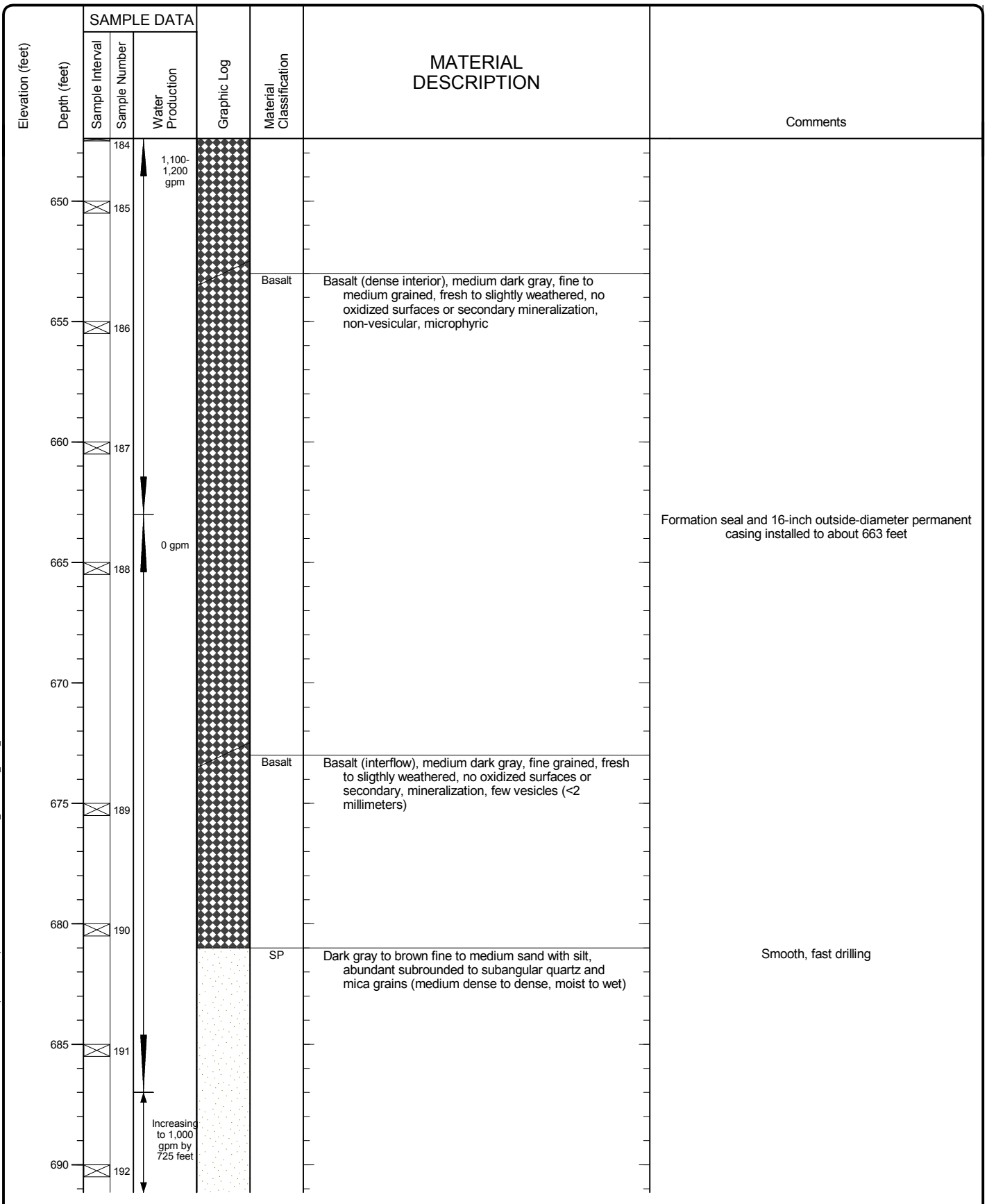
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 15 of 27



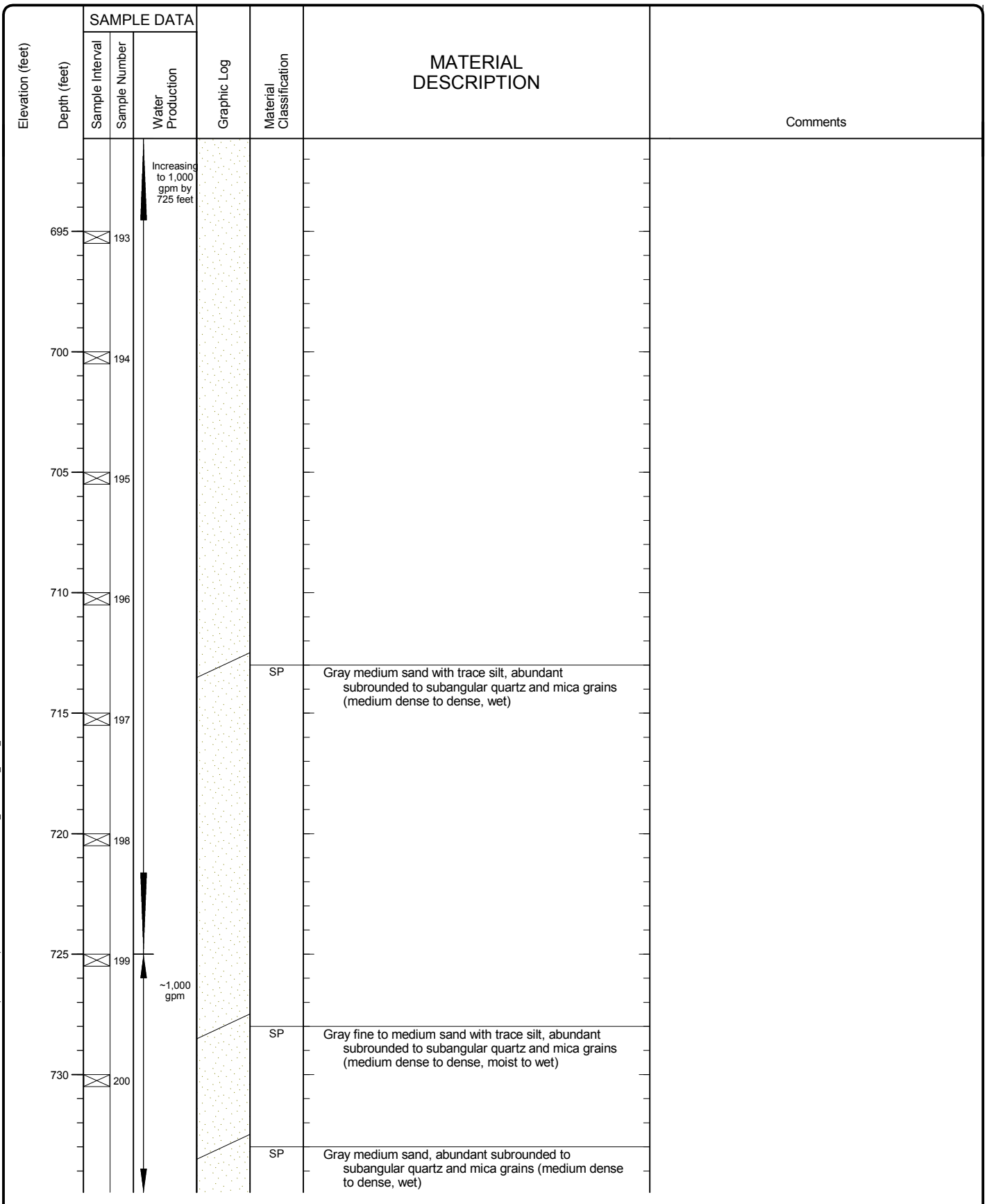
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 16 of 27



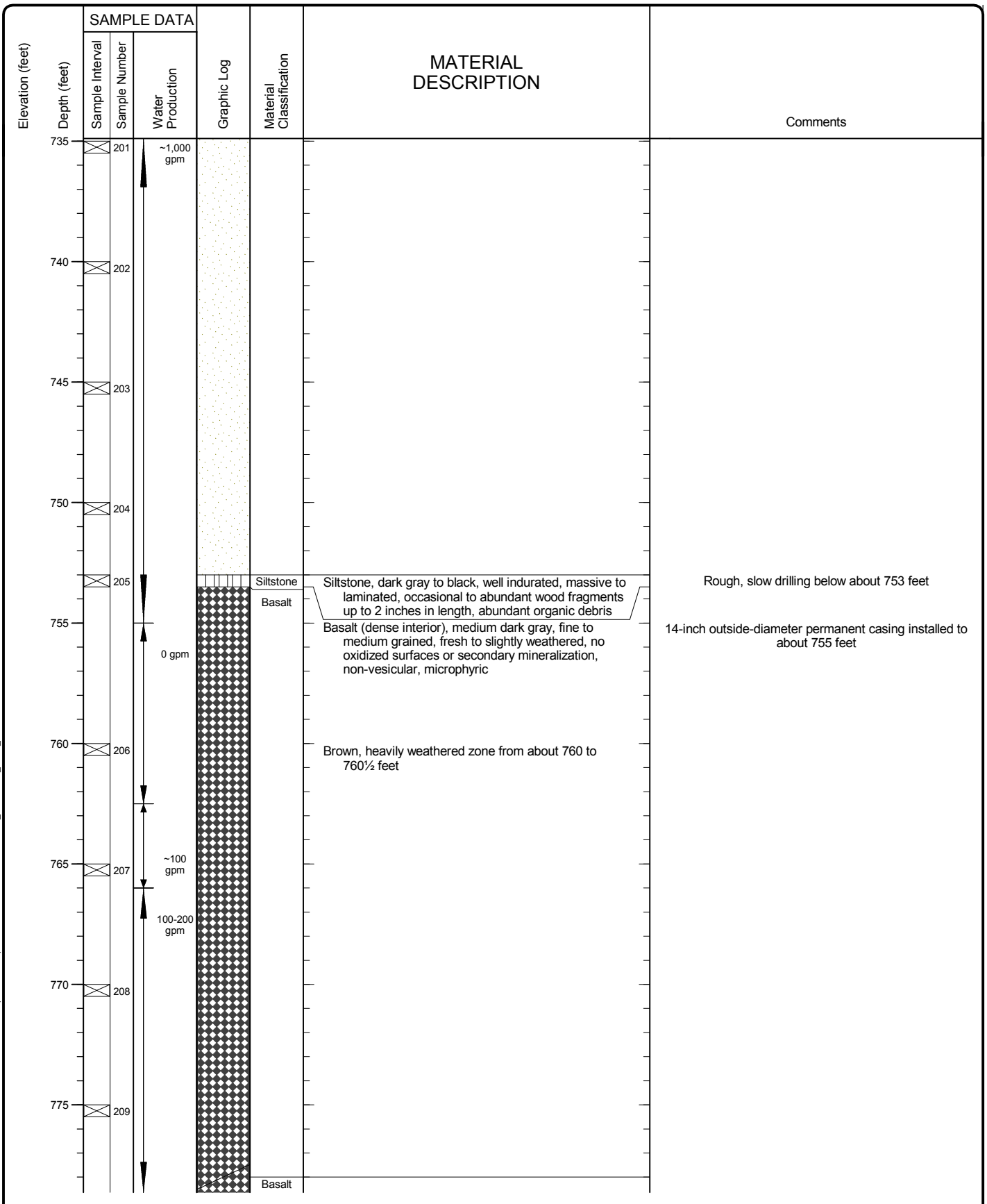
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 17 of 27



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 18 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
				100-200 gpm			Basalt (dense interior) medium dark gray, fine to medium grained, fresh to slightly weathered, no oxidized surfaces or secondary mineralization, generally non-vesicular with occasional chips with few small vesicles (<2 millimeters), aphyric to microphyric	Smooth, moderately slow drilling
780			210					
785			211					
790								Moderately smooth, moderately slow drilling
			212					
795			213					
						Basalt	Basalt (dense interior), dark gray, medium grained, fresh, occasional to abundant brown to green epidotic/chloritic mineralization of fracture surfaces (<1 millimeter), non-vesicular, microphyric	
800			214					Rough drilling at 802 feet
						Basalt	Basalt (dense interior), dark gray to medium dark gray, medium grained, fresh to slightly weathered, no oxidized surfaces, occasional to abundant brown to green epidotic/chloritic mineralization of fracture surfaces generally non-vesicular with occasional chips with few small vesicles (<2 millimeters), microphyric	
805			215					Moderately smooth, moderately slow drilling
				150-250 gpm				
810			216					Rough drilling at 811 feet
								Moderately smooth, slow drilling
815			217					
820			218					

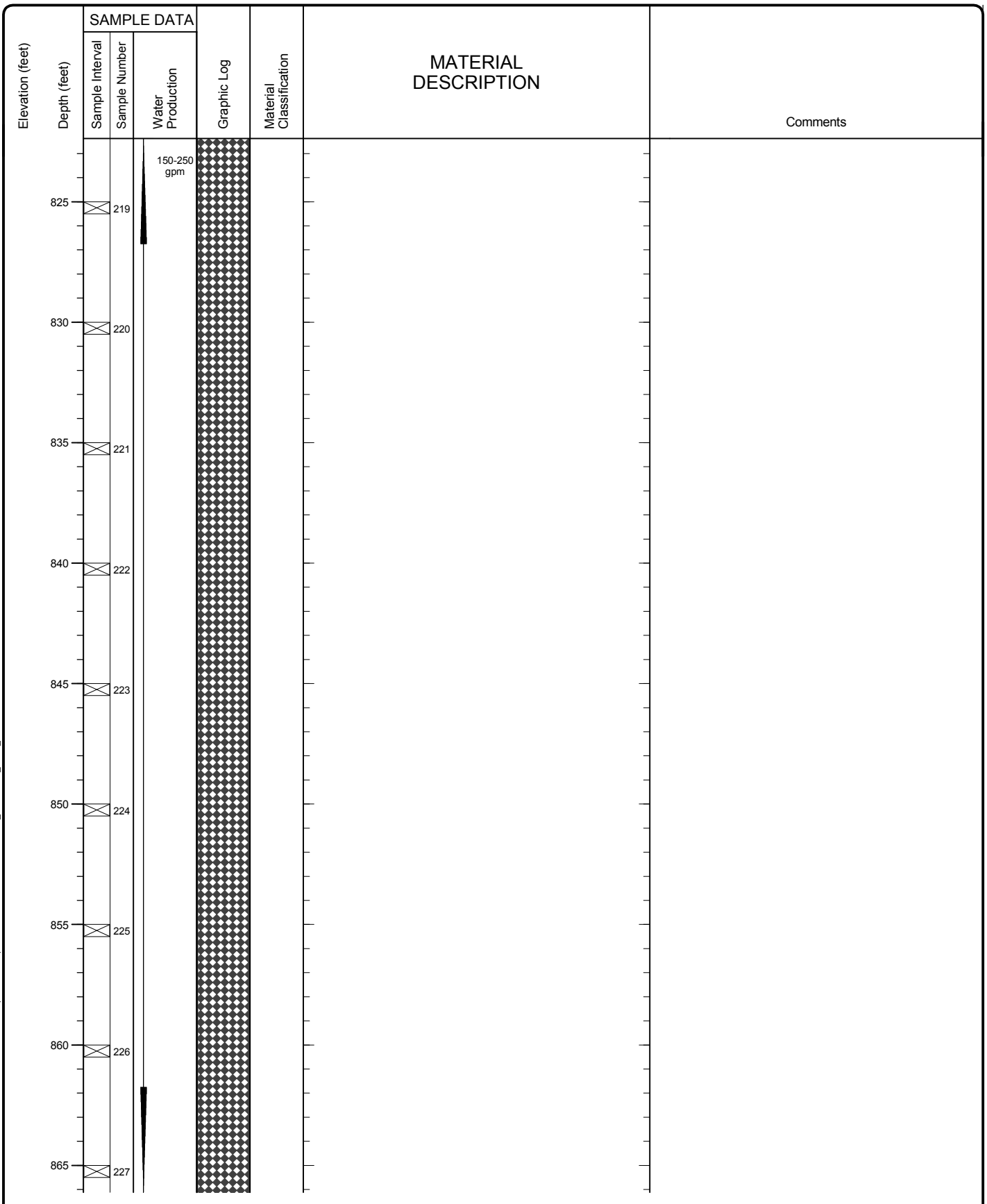
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 19 of 27



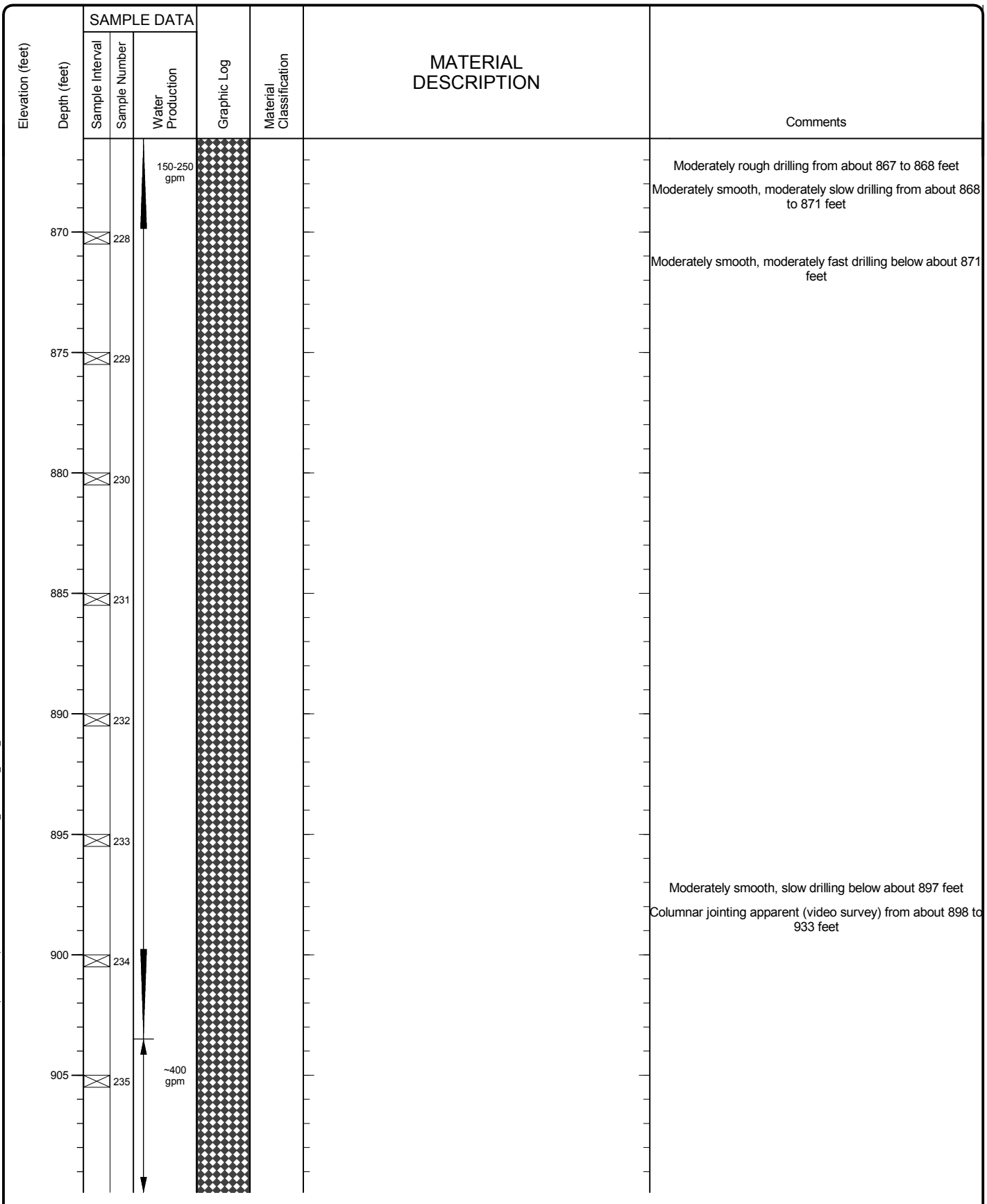
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 20 of 27



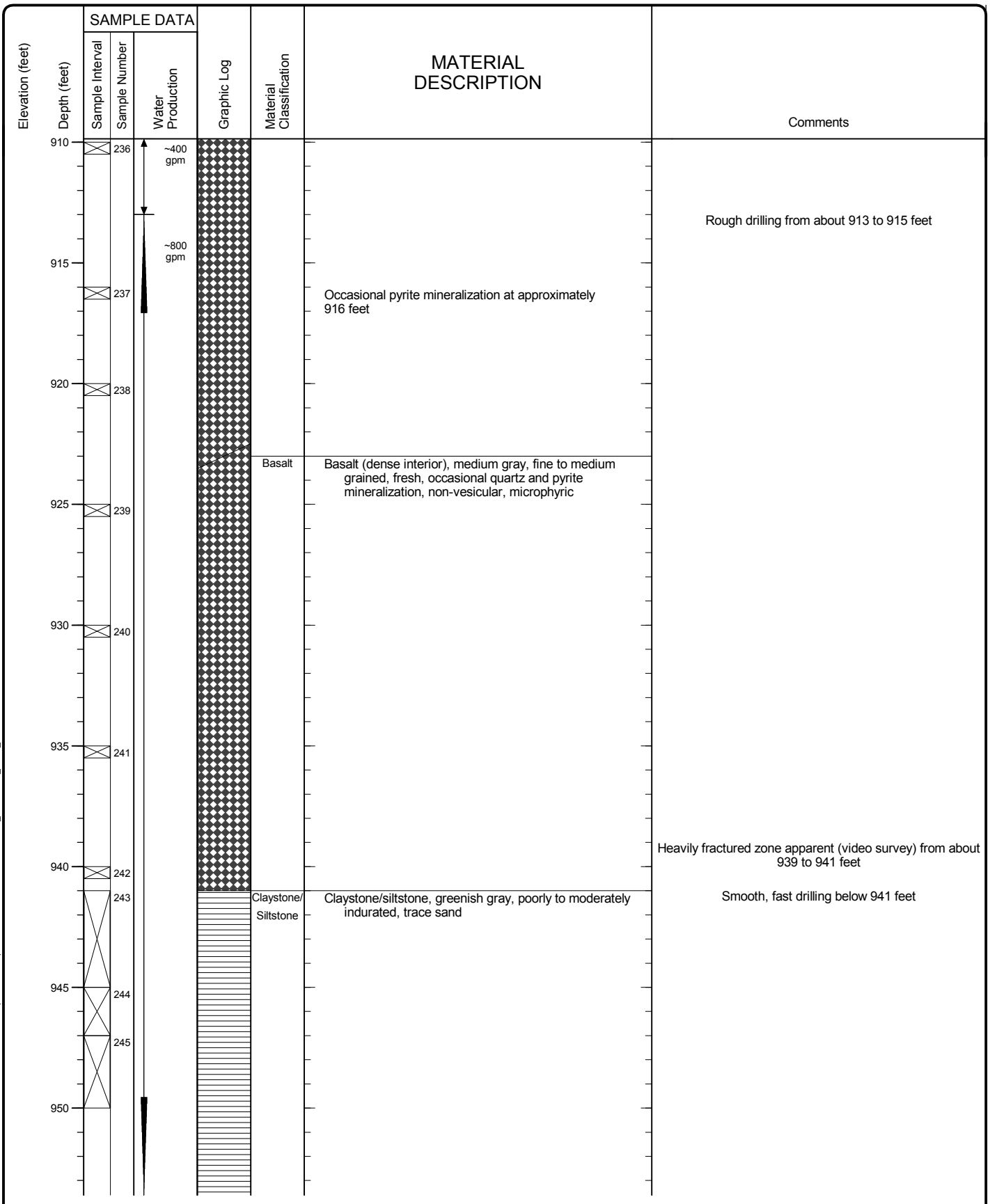
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 21 of 27



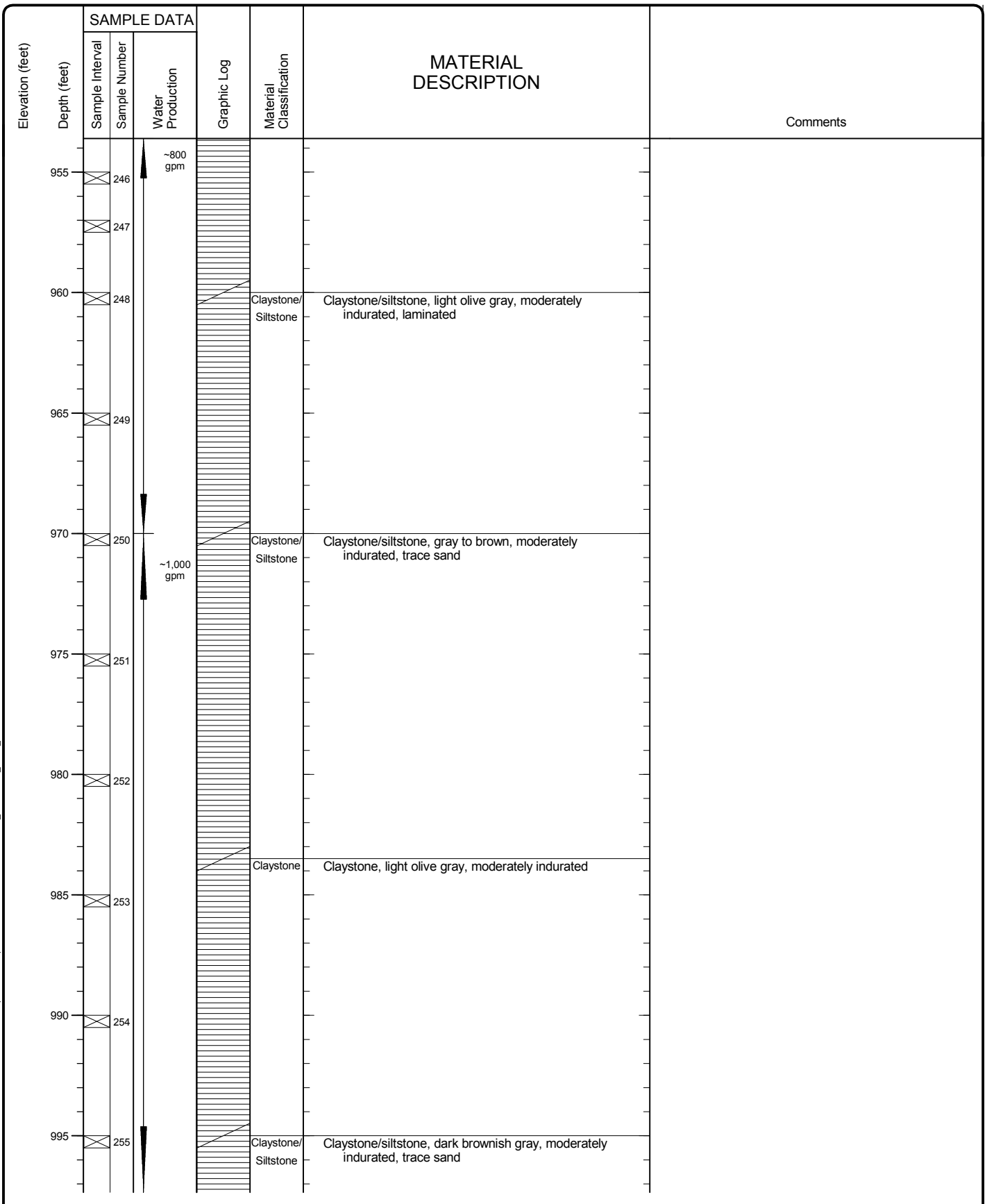
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 22 of 27



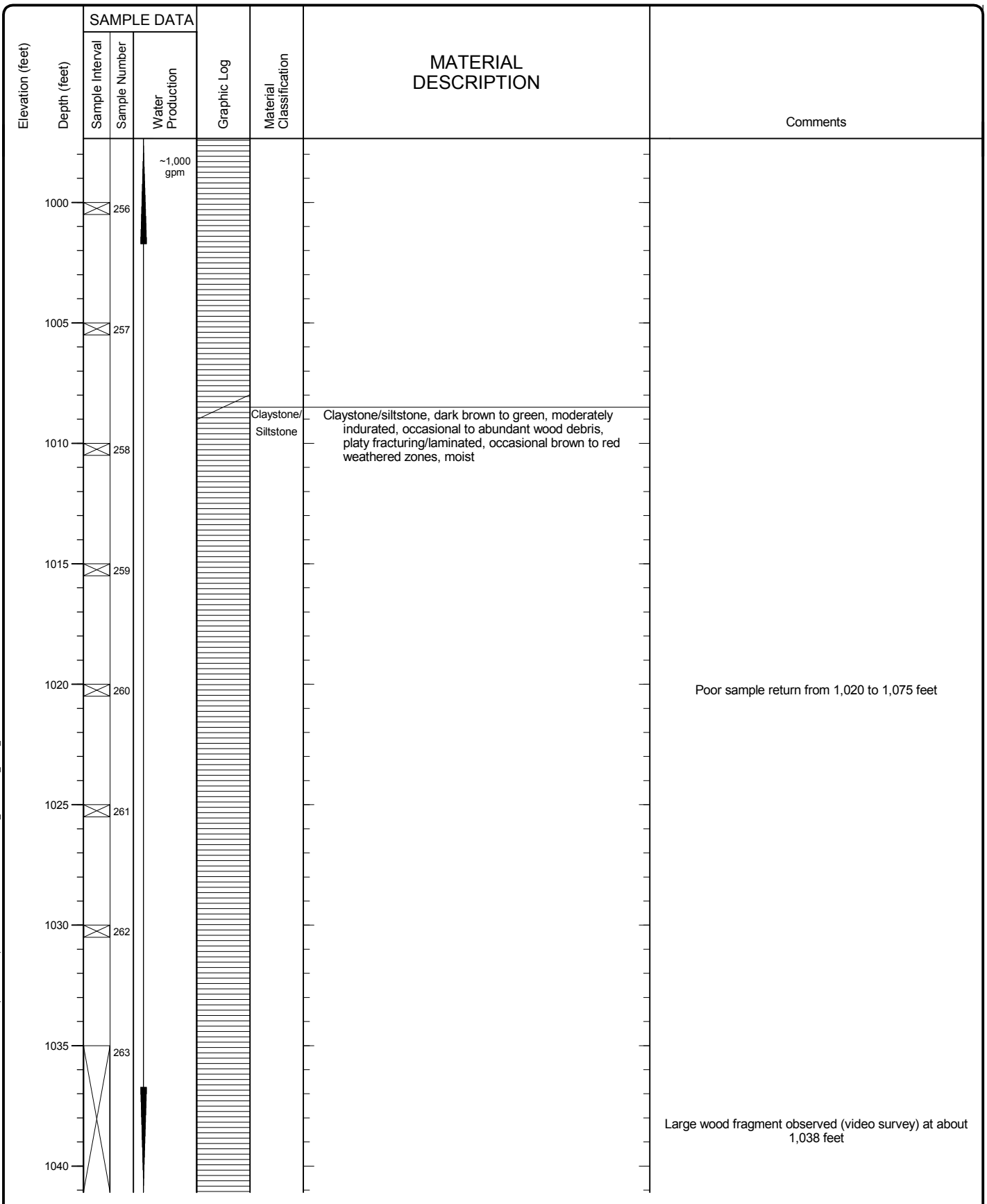
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project:	EWU Class A Water System Upgrades
Project Location:	Cheney, Washington
Project Number:	3170-026-00

Figure C-2
Sheet 23 of 27



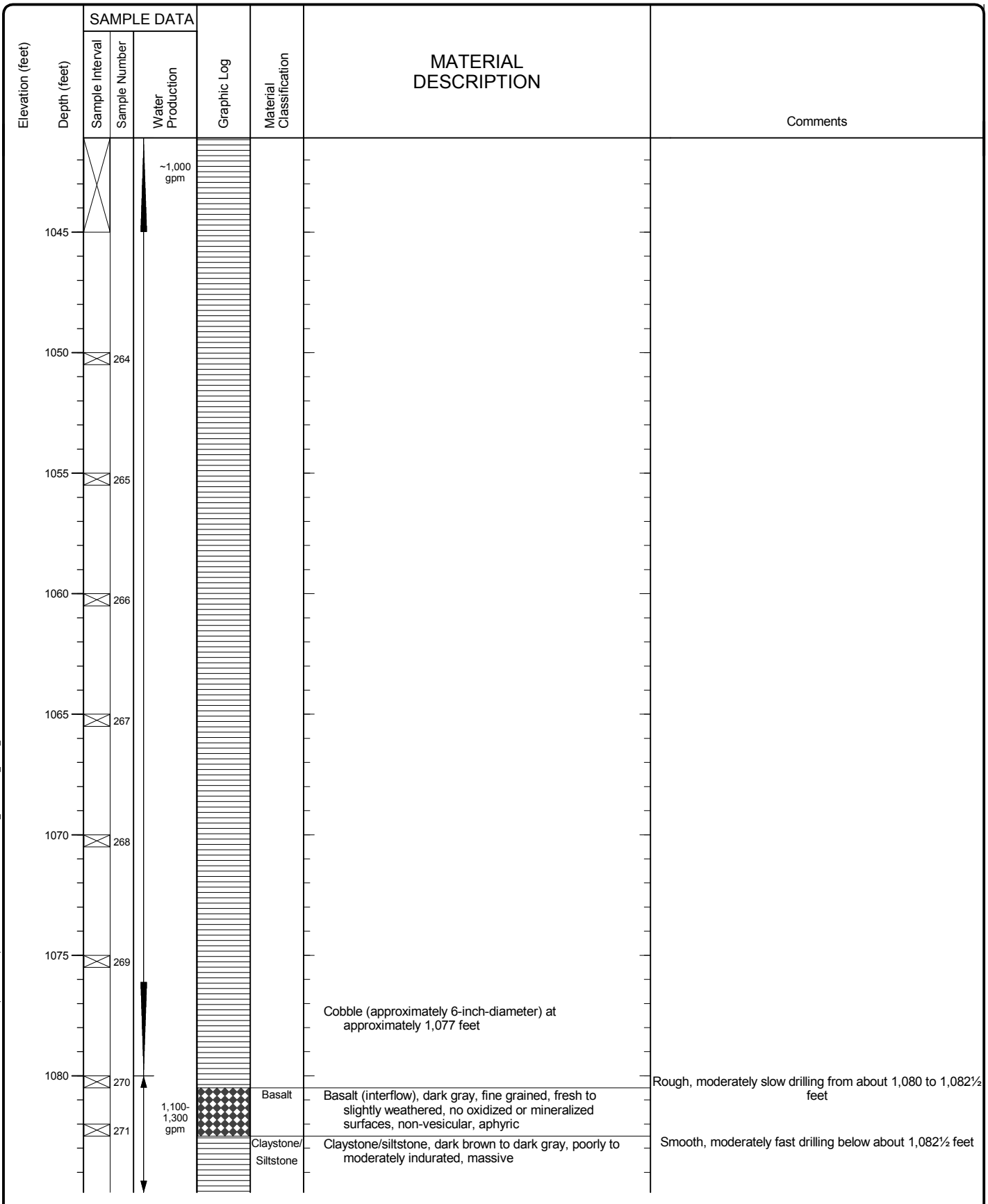
Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 24 of 27



Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project:	EWU Class A Water System Upgrades
Project Location:	Cheney, Washington
Project Number:	3170-026-00

Figure C-2
Sheet 25 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
1085			272	1,100-1,300 gpm				
						Basalt	Basalt (fractured dense interior), dark gray, fine grained, slightly weathered, occasional oxidized surfaces, no secondary mineralization, non-vesicular, fractured, microphyric	Rough, moderately slow drilling below about 1,089 feet
1090			273					
			274			Basalt	Basalt (fractured dense interior), medium dark gray, fine grained, slightly to moderately weathered, no secondary mineralization, non-vesicular, fractured, aphyric	Smooth, moderately slow drilling from about 1,093 to 1,095 feet
1095			275					Moderately rough, moderately slow drilling below about 1,095 feet
1100			276					
								Increase in downhole air pressure from about 1,103 to 1,106 feet
1105			277			Basalt	Basalt (fractured dense interior), medium dark gray, fine to medium grained, fresh to slightly weathered, no oxidized surfaces or secondary mineralization, non-vesicular, fractured, microphyric	
1110			280					Rough, moderately slow drilling from about 1,111 to 1,115 feet
1115			281					
1120			282					Moderately smooth, moderately slow drilling from about 1,120 to 1,123 feet
1125			283					

Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 26 of 27

Elevation (feet)	Depth (feet)	SAMPLE DATA: Sample Interval	SAMPLE DATA: Sample Number	SAMPLE DATA: Water Production	Graphic Log	Material Classification	MATERIAL DESCRIPTION	Comments
1130			284	1,100-1,300 gpm				
1135			285			Basalt	Basalt (fractured dense interior), medium dark gray, fine grained, fresh to slightly weathered, no oxidized surfaces, occasional to abundant secondary quartz mineralization (2 to 5 millimeters), microphyric	Moderately rough, moderately slow drilling
1140			286					
						Basalt	Basalt (dense interior), medium gray, fine grained, fresh to slightly weathered, no oxidized surfaces, microphyric	
1145			287					

Note: See Figure A-1 for explanation of symbols.

Log of Well 2R (continued)

GeoEngineers

Project: EWU Class A Water System Upgrades
Project Location: Cheney, Washington
Project Number: 3170-026-00

Figure C-2
Sheet 27 of 27

APPENDIX B

Hydraulic Modeling

Hydraulic Modeling - Theis Analysis Results for Case Study 1

Case Study 1
Q = 600 gpm
t = 5 years

Well	s(ft)
EW-1	16
IW-1	-16

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm

T= coefficient of transmissivity of aquifer, in ft^2/day and gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9,900	ft^2/day
T =	74,057	gpd/ft
Q =	600	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	28.46	264	600	74,057	1825	0.1	0.0002	2.14	2.0273E+13	13.30691995
IW-1	-12.30	264	600	74,057	1825	600	0.0002	2.14	563141.391	5.750617449

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 16.16

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm

T= coefficient of transmissivity of aquifer, in ft^2/day and gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9,900	ft^2/day
T =	74,057	gpd/ft
Q =	600	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	(0.3Tt/r²S)	log(0.3Tt/r²S)
	s	264	Q	T	t	r	S			
EW-1	12.30	264	600	74,057	1825	600	0.0002	2.14	563141.391	5.750617449
IW-1	-28.46	264	600	74,057	1825	0.1	0.0002	2.14	2.0273E+13	13.30691995

Note: Analysis run under the assumption of no increase or decrease in available storage

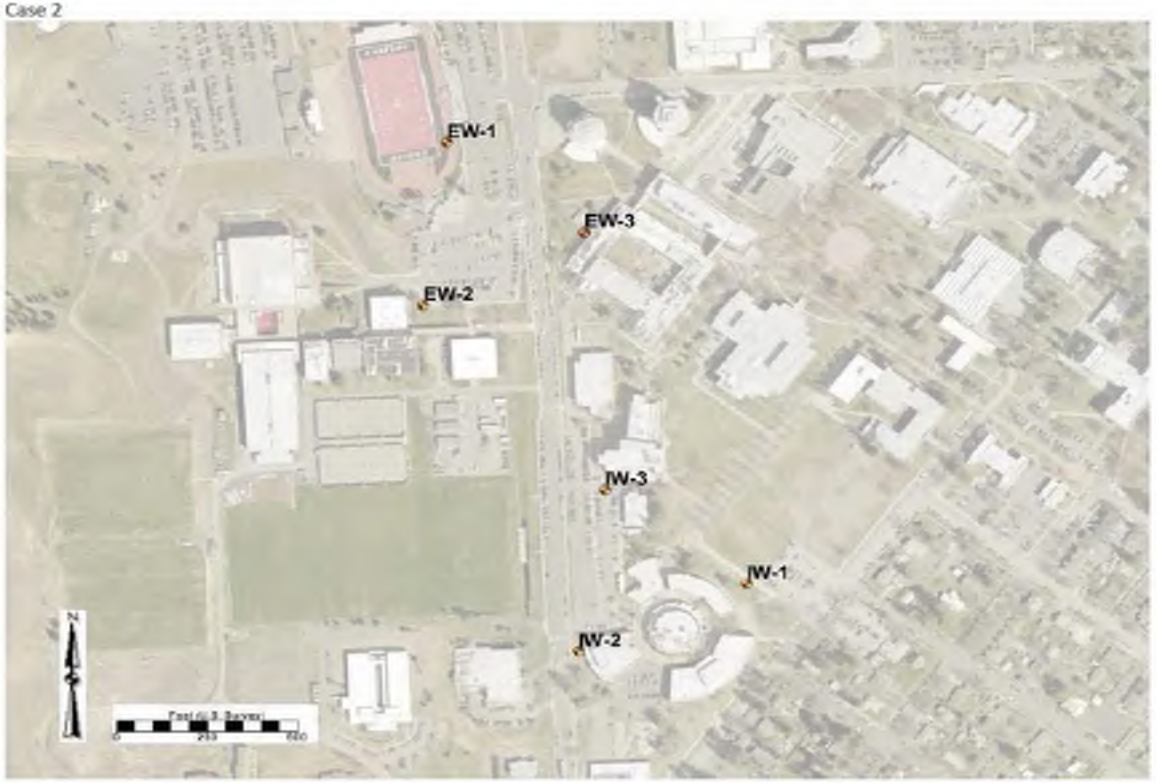
Total s -16.16

Hydraulic Modeling - Theis Analysis Results for Case Study 2

Case Study 2
Q = 1,200
5 years

Well	s (ft)
EW-1	43
EW-2	40
EW-3	40
IW-1	-43
IW-2	-43
IW-3	-38

Case 2



Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	56.92	264	1200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
EW-2	25.28	264	1200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
EW-3	25.28	264	1200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-1	-20.96	264	1200	74,057	1825	1600	0.0002	4.28	79191.7581	4.898679984
IW-2	-20.96	264	1200	74,057	1825	1600	0.0002	4.28	79191.7581	4.898679984
IW-3	-22.15	264	1200	74,057	1825	1160	0.0002	4.28	150662.084	5.178003971

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 43.42

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
EW-2	56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
EW-3	25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-1	-21.87	264	1,200	74,057	1825	1250	0.0002	4.28	129747.776	5.113099924
IW-2	-22.18	264	1,200	74,057	1825	1150	0.0002	4.28	153293.687	5.185524269
IW-3	-23.77	264	1,200	74,057	1825	750	0.0002	4.28	360410.49	5.556797423

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 39.65

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
EW-2	25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
EW-3	56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
IW-1	-22.09	264	1,200	74,057	1825	1180	0.0002	4.28	145598.176	5.163155935
IW-2	-21.73	264	1,200	74,057	1825	1300	0.0002	4.28	119959.113	5.079033245
IW-3	-23.53	264	1,200	74,057	1825	800	0.0002	4.28	316767.032	5.500739976

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 40.13

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	20.96	264	1,200	74,057	1825	1600	0.0002	4.28	79191.7581	4.898679984
EW-2	21.87	264	1,200	74,057	1825	1250	0.0002	4.28	129747.776	5.113099924
EW-3	22.09	264	1,200	74,057	1825	1180	0.0002	4.28	145598.176	5.163155935
IW-1	-56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
IW-2	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-3	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -42.56

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	20.96	264	1,200	74,057	1825	1600	0.0002	4.28	79191.7581	4.898679984
EW-2	22.18	264	1,200	74,057	1825	1150	0.0002	4.28	153293.687	5.185524269
EW-3	21.73	264	1,200	74,057	1825	1300	0.0002	4.28	119959.113	5.079033245
IW-1	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-2	-56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995
IW-3	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -42.61

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,200	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	22.15	264	1,200	74,057	1825	1160	0.0002	4.28	150662.084	5.178003971
EW-2	23.77	264	1,200	74,057	1825	750	0.0002	4.28	360410.49	5.556797423
EW-3	23.53	264	1,200	74,057	1825	800	0.0002	4.28	316767.032	5.500739976
IW-1	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-2	-25.28	264	1,200	74,057	1825	500	0.0002	4.28	810923.603	5.908979941
IW-3	-56.92	264	1,200	74,057	1825	0.1	0.0002	4.28	2.0273E+13	13.30691995

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -38.03

Hydraulic Modeling - Theis Analysis Results for Case Study 3

Case Study 3
Q = 1,500
t = 5 years

Well	s (ft)
EW-1	87
EW-2	82
EW-3	85
EW-4	85
EW-5	75
EW-6	77
EW-7	67
EW-8	51
EW-9	38
EW-10	44

Well	s (ft)
IW-1	-59
IW-2	-74
IW-3	-64
IW-4	-84
IW-5	-74
IW-6	-87
IW-7	-80
IW-8	-85
IW-9	-69
IW-10	-76

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-2	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-3	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-4	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-5	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-6	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-7	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
EW-8	26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
EW-9	25.70	264	1,500	74,057	1825	1780	0.0002	5.35	63985.2609	4.806079945
EW-10	25.60	264	1,500	74,057	1825	1820	0.0002	5.35	61203.629	4.786777174
IW-1	-24.51	264	1,500	74,057	1825	2300	0.0002	5.35	38323.4217	4.583464278
IW-2	-23.85	264	1,500	74,057	1825	2650	0.0002	5.35	28868.7648	4.460428202
IW-3	-24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
IW-4	-23.76	264	1,500	74,057	1825	2700	0.0002	5.35	27809.4514	4.444192421
IW-5	-24.41	264	1,500	74,057	1825	2350	0.0002	5.35	36709.9865	4.564784225
IW-6	-23.38	264	1,500	74,057	1825	2930	0.0002	5.35	23614.8238	4.373184709
IW-7	-24.08	264	1,500	74,057	1825	2520	0.0002	5.35	31924.1151	4.504118868
IW-8	-23.34	264	1,500	74,057	1825	2960	0.0002	5.35	23138.5707	4.364336528
IW-9	-24.07	264	1,500	74,057	1825	2530	0.0002	5.35	31672.2493	4.500678907
IW-10	-23.26	264	1,500	74,057	1825	3010	0.0002	5.35	22376.2321	4.349786959

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 87.08

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

b=	100	ft	Q= pumping rate in gpm (Attentuated over a period of time)
K=	99	ft/day	T= coefficient of transmissivity of aquifer, in gpd/ft
S=	0.0002		t= time since pumping test started, in days
T =	9900	ft^2/day	r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured
T =	74,057	gpd/ft	S= coefficient of storage (dimensionless)
Q =	1,500	gpm	

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.6025	5.908979941
EW-2	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.02731E+13	13.30691995
EW-3	28.38	264	1,500	74,057	1825	1000	0.0002	5.35	202730.9006	5.30691995
EW-4	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.6025	5.908979941
EW-5	26.68	264	1,500	74,057	1825	1440	0.0002	5.35	97767.60254	4.990194966
EW-6	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.6867	5.185524269
EW-7	28.24	264	1,500	74,057	1825	1030	0.0002	5.35	191,093.32	5.2812455
EW-8	25.91	264	1,500	74,057	1825	1700	0.0002	5.35	70,149.10	4.846022107
EW-9	26.14	264	1,500	74,057	1825	1620	0.0002	5.35	77,248.48	4.887889921
EW-10	26.59	264	1,500	74,057	1825	1470	0.0002	5.35	93,817.81	4.97228528
IW-1	-24.25	264	1,500	74,057	1825	2430	0.0002	5.35	34,332.66	4.535707403
IW-2	-23.78	264	1,500	74,057	1825	2690	0.0002	5.35	28016.59742	4.44741539
IW-3	-24.78	264	1,500	74,057	1825	2170	0.0002	5.35	43052.70883	4.634000482
IW-4	-23.94	264	1,500	74,057	1825	2600	0.0002	5.35	29989.7782	4.476973254
IW-5	-24.76	264	1,500	74,057	1825	2180	0.0002	5.35	42658.63577	4.630006963
IW-6	-23.71	264	1,500	74,057	1825	2730	0.0002	5.35	27201.61288	4.434594656
IW-7	-24.61	264	1,500	74,057	1825	2250	0.0002	5.35	40045.61	4.602554913
IW-8	-23.85	264	1,500	74,057	1825	2650	0.0002	5.35	28868.76477	4.460428202
IW-9	-24.82	264	1,500	74,057	1825	2150	0.0002	5.35	43857.41495	4.64204303
IW-10	-23.94	264	1,500	74,057	1825	2600	0.0002	5.35	29989.7782	4.476973254

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 81.57

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-2	28.38	264	1,500	74,057	1825	1000	0.0002	5.35	202730.901	5.30691995
EW-3	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-4	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-5	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-6	30.03	264	1,500	74,057	1825	700	0.0002	5.35	413736.532	5.61672387
EW-7	27.53	264	1,500	74,057	1825	1200	0.0002	5.35	140785.348	5.148557458
EW-8	26.65	264	1,500	74,057	1825	1450	0.0002	5.35	96423.7339	4.984183945
EW-9	26.56	264	1,500	74,057	1825	1480	0.0002	5.35	92554.2826	4.966396519
EW-10	26.02	264	1,500	74,057	1825	1660	0.0002	5.35	73570.5112	4.866703774
IW-1	-25.57	264	1,500	74,057	1825	1830	0.0002	5.35	60536.5644	4.78201777
IW-2	-24.69	264	1,500	74,057	1825	2210	0.0002	5.35	41508.3435	4.618135402
IW-3	-25.70	264	1,500	74,057	1825	1780	0.0002	5.35	63985.2609	4.806079945
IW-4	-24.51	264	1,500	74,057	1825	2300	0.0002	5.35	38323.4217	4.583464278
IW-5	-25.16	264	1,500	74,057	1825	2000	0.0002	5.35	50682.7252	4.704859958
IW-6	-23.96	264	1,500	74,057	1825	2590	0.0002	5.35	30221.8066	4.480320422
IW-7	-24.63	264	1,500	74,057	1825	2240	0.0002	5.35	40403.9582	4.606423913
IW-8	-23.75	264	1,500	74,057	1825	2710	0.0002	5.35	27604.5942	4.440981368
IW-9	-24.39	264	1,500	74,057	1825	2360	0.0002	5.35	36399.5441	4.561095944
IW-10	-23.55	264	1,500	74,057	1825	2830	0.0002	5.35	25313.2016	4.403347079

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 85.22

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-2	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-3	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-4	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-5	29.13	264	1,500	74,057	1825	850	0.0002	5.35	280596.402	5.448082098
EW-6	30.91	264	1,500	74,057	1825	580	0.0002	5.35	602648.337	5.780063963
EW-7	29.84	264	1,500	74,057	1825	730	0.0002	5.35	380429.538	5.580274229
EW-8	27.81	264	1,500	74,057	1825	1130	0.0002	5.35	158768.032	5.200763063
EW-9	24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
EW-10	27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
IW-1	-25.47	264	1,500	74,057	1825	1870	0.0002	5.35	57974.4633	4.763236737
IW-2	-24.80	264	1,500	74,057	1825	2160	0.0002	5.35	43452.2678	4.638012447
IW-3	-26.02	264	1,500	74,057	1825	1660	0.0002	5.35	73570.5112	4.866703774
IW-4	-24.84	264	1,500	74,057	1825	2140	0.0002	5.35	44268.255	4.646092403
IW-5	-25.75	264	1,500	74,057	1825	1760	0.0002	5.35	65447.7339	4.815894614
IW-6	-24.41	264	1,500	74,057	1825	2350	0.0002	5.35	36709.9865	4.564784225
IW-7	-25.35	264	1,500	74,057	1825	1920	0.0002	5.35	54994.2764	4.740317492
IW-8	-24.39	264	1,500	74,057	1825	2360	0.0002	5.35	36399.5441	4.561095944
IW-9	-25.32	264	1,500	74,057	1825	1930	0.0002	5.35	54425.8639	4.735805332
IW-10	-24.29	264	1,500	74,057	1825	2410	0.0002	5.35	34904.8571	4.542885865

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 85.11

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-2	26.68	264	1,500	74,057	1825	1440	0.0002	5.35	97767.6025	4.990194966
EW-3	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-4	29.13	264	1,500	74,057	1825	850	0.0002	5.35	280596.402	5.448082098
EW-5	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-6	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-7	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
EW-8	30.24	264	1,500	74,057	1825	670	0.0002	5.35	451617.065	5.654770344
EW-9	27.57	264	1,500	74,057	1825	1190	0.0002	5.35	143161.43	5.155826027
EW-10	26.43	264	1,500	74,057	1825	1520	0.0002	5.35	87747.1003	4.943232774
IW-1	-27.19	264	1,500	74,057	1825	1290	0.0002	5.35	121826.153	5.085740529
IW-2	-25.91	264	1,500	74,057	1825	1700	0.0002	5.35	70149.1006	4.846022107
IW-3	-27.09	264	1,500	74,057	1825	1320	0.0002	5.35	116351.527	5.065772087
IW-4	-25.52	264	1,500	74,057	1825	1850	0.0002	5.35	59234.7409	4.772576493
IW-5	-26.11	264	1,500	74,057	1825	1630	0.0002	5.35	76303.5495	4.882544741
IW-6	-24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
IW-7	-25.40	264	1,500	74,057	1825	1900	0.0002	5.35	56158.1442	4.749412748
IW-8	-24.31	264	1,500	74,057	1825	2400	0.0002	5.35	35196.3369	4.546497466
IW-9	-24.87	264	1,500	74,057	1825	2130	0.0002	5.35	44684.8951	4.650160743
IW-10	-23.96	264	1,500	74,057	1825	2590	0.0002	5.35	30221.8066	4.480320422

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 75.00

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-2	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
EW-3	30.03	264	1,500	74,057	1825	700	0.0002	5.35	413736.532	5.61672387
EW-4	30.91	264	1,500	74,057	1825	580	0.0002	5.35	602648.337	5.780063963
EW-5	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-6	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-7	30.31	264	1,500	74,057	1825	660	0.0002	5.35	465406.108	5.667832079
EW-8	31.07	264	1,500	74,057	1825	560	0.0002	5.35	646463.331	5.810543896
EW-9	29.47	264	1,500	74,057	1825	790	0.0002	5.35	324837.207	5.511665767
EW-10	28.20	264	1,500	74,057	1825	1040	0.0002	5.35	187436.114	5.272853271
IW-1	-27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-2	-26.17	264	1,500	74,057	1825	1610	0.0002	5.35	78211.0646	4.893268198
IW-3	-27.81	264	1,500	74,057	1825	1130	0.0002	5.35	158768.032	5.200763063
IW-4	-26.08	264	1,500	74,057	1825	1640	0.0002	5.35	75375.8554	4.877232254
IW-5	-27.09	264	1,500	74,057	1825	1320	0.0002	5.35	116351.527	5.065772087
IW-6	-25.40	264	1,500	74,057	1825	1900	0.0002	5.35	56158.1442	4.749412748
IW-7	-26.34	264	1,500	74,057	1825	1550	0.0002	5.35	84383.3093	4.926256553
IW-8	-25.11	264	1,500	74,057	1825	2020	0.0002	5.35	49684.0752	4.696217211
IW-9	-25.89	264	1,500	74,057	1825	1710	0.0002	5.35	69331.0422	4.840927729
IW-10	-24.78	264	1,500	74,057	1825	2170	0.0002	5.35	43052.7088	4.634000482

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 76.59

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
EW-2	28.24	264	1,500	74,057	1825	1030	0.0002	5.35	191093.318	5.2812455
EW-3	27.53	264	1,500	74,057	1825	1200	0.0002	5.35	140785.348	5.148557458
EW-4	29.84	264	1,500	74,057	1825	730	0.0002	5.35	380429.538	5.580274229
EW-5	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
EW-6	30.31	264	1,500	74,057	1825	660	0.0002	5.35	465406.108	5.667832079
EW-7	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-8	28.57	264	1,500	74,057	1825	960	0.0002	5.35	219977.106	5.342377484
EW-9	30.60	264	1,500	74,057	1825	620	0.0002	5.35	527395.683	5.722136571
EW-10	31.69	264	1,500	74,057	1825	490	0.0002	5.35	844360.269	5.92652779
IW-1	-26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
IW-2	-25.78	264	1,500	74,057	1825	1750	0.0002	5.35	66197.8451	4.820843852
IW-3	-27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
IW-4	-26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
IW-5	-27.69	264	1,500	74,057	1825	1160	0.0002	5.35	150662.084	5.178003971
IW-6	-25.89	264	1,500	74,057	1825	1710	0.0002	5.35	69331.0422	4.840927729
IW-7	-27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
IW-8	-26.05	264	1,500	74,057	1825	1650	0.0002	5.35	74464.9773	4.871952061
IW-9	-27.53	264	1,500	74,057	1825	1200	0.0002	5.35	140785.348	5.148557458
IW-10	-25.97	264	1,500	74,057	1825	1680	0.0002	5.35	71829.259	4.856301386

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 66.69

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
EW-2	25.91	264	1,500	74,057	1825	1700	0.0002	5.35	70149.1006	4.846022107
EW-3	26.65	264	1,500	74,057	1825	1450	0.0002	5.35	96423.7339	4.984183945
EW-4	27.81	264	1,500	74,057	1825	1130	0.0002	5.35	158768.032	5.200763063
EW-5	30.24	264	1,500	74,057	1825	670	0.0002	5.35	451617.065	5.654770344
EW-6	31.07	264	1,500	74,057	1825	560	0.0002	5.35	646463.331	5.810543896
EW-7	28.57	264	1,500	74,057	1825	960	0.0002	5.35	219977.106	5.342377484
EW-8	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-9	30.45	264	1,500	74,057	1825	640	0.0002	5.35	494948.488	5.694560002
EW-10	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
IW-1	-29.78	264	1,500	74,057	1825	740	0.0002	5.35	370217.13	5.56845651
IW-2	-28.11	264	1,500	74,057	1825	1060	0.0002	5.35	180429.78	5.256308219
IW-3	-30.45	264	1,500	74,057	1825	640	0.0002	5.35	494948.488	5.694560002
IW-4	-27.65	264	1,500	74,057	1825	1170	0.0002	5.35	148097.67	5.170548226
IW-5	-28.47	264	1,500	74,057	1825	980	0.0002	5.35	211090.067	5.324467798
IW-6	-26.43	264	1,500	74,057	1825	1520	0.0002	5.35	87747.1003	4.943232774
IW-7	-27.27	264	1,500	74,057	1825	1270	0.0002	5.35	125693.41	5.099312508
IW-8	-25.75	264	1,500	74,057	1825	1760	0.0002	5.35	65447.7339	4.815894614
IW-9	-26.22	264	1,500	74,057	1825	1590	0.0002	5.35	80191.0133	4.904125701
IW-10	-25.16	264	1,500	74,057	1825	2000	0.0002	5.35	50,682.73	4.704859958

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 50.70

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	25.70	264	1,500	74,057	1825	1780	0.0002	5.35	63985.2609	4.806079945
EW-2	26.14	264	1,500	74,057	1825	1620	0.0002	5.35	77248.4761	4.887889921
EW-3	26.56	264	1,500	74,057	1825	1480	0.0002	5.35	92554.2826	4.966396519
EW-4	24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
EW-5	27.57	264	1,500	74,057	1825	1190	0.0002	5.35	143161.43	5.155826027
EW-6	29.47	264	1,500	74,057	1825	790	0.0002	5.35	324837.207	5.511665767
EW-7	30.60	264	1,500	74,057	1825	620	0.0002	5.35	527395.683	5.722136571
EW-8	30.45	264	1,500	74,057	1825	640	0.0002	5.35	494948.488	5.694560002
EW-9	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
EW-10	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-1	-28.06	264	1,500	74,057	1825	1070	0.0002	5.35	177073.02	5.248152394
IW-2	-27.77	264	1,500	74,057	1825	1140	0.0002	5.35	155994.845	5.193110247
IW-3	-30.52	264	1,500	74,057	1825	630	0.0002	5.35	510785.842	5.708238851
IW-4	-28.42	264	1,500	74,057	1825	990	0.0002	5.35	206847.159	5.315649561
IW-5	-30.99	264	1,500	74,057	1825	570	0.0002	5.35	623979.38	5.795170238
IW-6	-27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
IW-7	-29.78	264	1,500	74,057	1825	740	0.0002	5.35	370217.13	5.56845651
IW-8	-27.45	264	1,500	74,057	1825	1220	0.0002	5.35	136207.27	5.134200288
IW-9	-28.62	264	1,500	74,057	1825	950	0.0002	5.35	224632.577	5.351472739
IW-10	-26.81	264	1,500	74,057	1825	1400	0.0002	5.35	103434.133	5.014663878

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 37.79

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	25.60	264	1,500	74,057	1825	1820	0.0002	5.35	61203.629	4.786777174
EW-2	26.59	264	1,500	74,057	1825	1470	0.0002	5.35	93817.8077	4.97228528
EW-3	26.02	264	1,500	74,057	1825	1660	0.0002	5.35	73570.5112	4.866703774
EW-4	27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
EW-5	26.43	264	1,500	74,057	1825	1520	0.0002	5.35	87747.1003	4.943232774
EW-6	28.20	264	1,500	74,057	1825	1040	0.0002	5.35	187436.114	5.272853271
EW-7	31.69	264	1,500	74,057	1825	490	0.0002	5.35	844360.269	5.92652779
EW-8	27.93	264	1,500	74,057	1825	1100	0.0002	5.35	167546.199	5.224134579
EW-9	31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
EW-10	71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-1	-26.34	264	1,500	74,057	1825	1550	0.0002	5.35	84383.3093	4.926256553
IW-2	-26.31	264	1,500	74,057	1825	1560	0.0002	5.35	83304.9394	4.920670753
IW-3	-28.02	264	1,500	74,057	1825	1080	0.0002	5.35	173809.071	5.240072439
IW-4	-27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-5	-29.24	264	1,500	74,057	1825	830	0.0002	5.35	294282.045	5.468763765
IW-6	-27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-7	-29.36	264	1,500	74,057	1825	810	0.0002	5.35	308993.904	5.489949912
IW-8	-27.61	264	1,500	74,057	1825	1180	0.0002	5.35	145598.176	5.163155935
IW-9	-30.03	264	1,500	74,057	1825	700	0.0002	5.35	413736.532	5.61672387
IW-10	-27.57	264	1,500	74,057	1825	1190	0.0002	5.35	143161.43	5.155826027

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s 43.83

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.51	264	1,500	74,057	1825	2300	0.0002	5.35	38323.4217	4.583464278
EW-2	24.25	264	1,500	74,057	1825	2430	0.0002	5.35	34332.656	4.535707403
EW-3	25.57	264	1,500	74,057	1825	1830	0.0002	5.35	60536.5644	4.78201777
EW-4	25.47	264	1,500	74,057	1825	1870	0.0002	5.35	57974.4633	4.763236737
EW-5	27.19	264	1,500	74,057	1825	1290	0.0002	5.35	121826.153	5.085740529
EW-6	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
EW-7	26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
EW-8	29.78	264	1,500	74,057	1825	740	0.0002	5.35	370217.13	5.56845651
EW-9	28.06	264	1,500	74,057	1825	1070	0.0002	5.35	177073.02	5.248152394
EW-10	26.34	264	1,500	74,057	1825	1550	0.0002	5.35	84383.3093	4.926256553
IW-1	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-2	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-3	-31.41	264	1,500	74,057	1825	520	0.0002	5.35	749744.455	5.874913262
IW-4	-29.24	264	1,500	74,057	1825	830	0.0002	5.35	294282.045	5.468763765
IW-5	-28.47	264	1,500	74,057	1825	980	0.0002	5.35	211090.067	5.324467798
IW-6	-27.23	264	1,500	74,057	1825	1280	0.0002	5.35	123737.122	5.09250001
IW-7	-27.12	264	1,500	74,057	1825	1310	0.0002	5.35	118134.666	5.072377358
IW-8	-25.94	264	1,500	74,057	1825	1690	0.0002	5.35	70981.7235	4.85114654
IW-9	-25.73	264	1,500	74,057	1825	1770	0.0002	5.35	64710.3006	4.810973417
IW-10	-25.02	264	1,500	74,057	1825	2060	0.0002	5.35	47773.3294	4.679185509

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -58.78

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.85	264	1,500	74,057	1825	2650	0.0002	5.35	28868.7648	4.460428202
EW-2	23.78	264	1,500	74,057	1825	2690	0.0002	5.35	28016.5974	4.44741539
EW-3	24.69	264	1,500	74,057	1825	2210	0.0002	5.35	41508.3435	4.618135402
EW-4	24.80	264	1,500	74,057	1825	2160	0.0002	5.35	43452.2678	4.638012447
EW-5	25.91	264	1,500	74,057	1825	1700	0.0002	5.35	70149.1006	4.846022107
EW-6	26.17	264	1,500	74,057	1825	1610	0.0002	5.35	78211.0646	4.893268198
EW-7	25.78	264	1,500	74,057	1825	1750	0.0002	5.35	66197.8451	4.820843852
EW-8	28.11	264	1,500	74,057	1825	1060	0.0002	5.35	180429.78	5.256308219
EW-9	27.77	264	1,500	74,057	1825	1140	0.0002	5.35	155994.845	5.193110247
EW-10	26.31	264	1,500	74,057	1825	1560	0.0002	5.35	83304.9394	4.920670753
IW-1	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-2	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-3	-31.41	264	1,500	74,057	1825	520	0.0002	5.35	749744.455	5.874913262
IW-4	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-5	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-6	-28.76	264	1,500	74,057	1825	920	0.0002	5.35	239521.385	5.379344295
IW-7	-27.98	264	1,500	74,057	1825	1090	0.0002	5.35	170634.543	5.232066954
IW-8	-26.88	264	1,500	74,057	1825	1380	0.0002	5.35	106453.949	5.027161777
IW-9	-26.22	264	1,500	74,057	1825	1590	0.0002	5.35	80191.0133	4.904125701
IW-10	-25.65	264	1,500	74,057	1825	1800	0.0002	5.35	62571.2656	4.79637494

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -74.27

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
EW-2	24.78	264	1,500	74,057	1825	2170	0.0002	5.35	43052.7088	4.634000482
EW-3	25.70	264	1,500	74,057	1825	1780	0.0002	5.35	63985.2609	4.806079945
EW-4	26.02	264	1,500	74,057	1825	1660	0.0002	5.35	73570.5112	4.866703774
EW-5	27.09	264	1,500	74,057	1825	1320	0.0002	5.35	116351.527	5.065772087
EW-6	27.81	264	1,500	74,057	1825	1130	0.0002	5.35	158768.032	5.200763063
EW-7	27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
EW-8	30.45	264	1,500	74,057	1825	640	0.0002	5.35	494948.488	5.694560002
EW-9	30.52	264	1,500	74,057	1825	630	0.0002	5.35	510785.842	5.708238851
EW-10	28.02	264	1,500	74,057	1825	1080	0.0002	5.35	173809.071	5.240072439
IW-1	-31.41	264	1,500	74,057	1825	520	0.0002	5.35	749744.455	5.874913262
IW-2	-31.41	264	1,500	74,057	1825	520	0.0002	5.35	749744.455	5.874913262
IW-3	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-4	-31.33	264	1,500	74,057	1825	530	0.0002	5.35	721719.119	5.858368211
IW-5	-31.88	264	1,500	74,057	1825	470	0.0002	5.35	917749.663	5.962724234
IW-6	-28.82	264	1,500	74,057	1825	910	0.0002	5.35	244814.516	5.388837165
IW-7	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-8	-27.38	264	1,500	74,057	1825	1240	0.0002	5.35	131848.921	5.120076579
IW-9	-27.34	264	1,500	74,057	1825	1250	0.0002	5.35	129747.776	5.113099924
IW-10	-26.25	264	1,500	74,057	1825	1580	0.0002	5.35	81209.3016	4.909605776

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -63.87

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.76	264	1,500	74,057	1825	2700	0.0002	5.35	27809.4514	4.444192421
EW-2	23.94	264	1,500	74,057	1825	2600	0.0002	5.35	29989.7782	4.476973254
EW-3	24.51	264	1,500	74,057	1825	2300	0.0002	5.35	38323.4217	4.583464278
EW-4	24.84	264	1,500	74,057	1825	2140	0.0002	5.35	44268.255	4.646092403
EW-5	25.52	264	1,500	74,057	1825	1850	0.0002	5.35	59234.7409	4.772576493
EW-6	26.08	264	1,500	74,057	1825	1640	0.0002	5.35	75375.8554	4.877232254
EW-7	26.19	264	1,500	74,057	1825	1600	0.0002	5.35	79191.7581	4.898679984
EW-8	27.65	264	1,500	74,057	1825	1170	0.0002	5.35	148097.67	5.170548226
EW-9	28.42	264	1,500	74,057	1825	990	0.0002	5.35	206847.159	5.315649561
EW-10	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-1	-29.24	264	1,500	74,057	1825	830	0.0002	5.35	294282.045	5.468763765
IW-2	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-3	-31.33	264	1,500	74,057	1825	530	0.0002	5.35	721719.119	5.858368211
IW-4	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-5	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-6	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-7	-30.31	264	1,500	74,057	1825	660	0.0002	5.35	465406.108	5.667832079
IW-8	-28.87	264	1,500	74,057	1825	900	0.0002	5.35	250285.063	5.398434931
IW-9	-27.69	264	1,500	74,057	1825	1160	0.0002	5.35	150662.084	5.178003971
IW-10	-27.05	264	1,500	74,057	1825	1330	0.0002	5.35	114608.458	5.059216668

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -83.51

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.41	264	1,500	74,057	1825	2350	0.0002	5.35	36709.9865	4.564784225
EW-2	24.76	264	1,500	74,057	1825	2180	0.0002	5.35	42658.6358	4.630006963
EW-3	25.16	264	1,500	74,057	1825	2000	0.0002	5.35	50682.7252	4.704859958
EW-4	25.75	264	1,500	74,057	1825	1760	0.0002	5.35	65447.7339	4.815894614
EW-5	26.11	264	1,500	74,057	1825	1630	0.0002	5.35	76303.5495	4.882544741
EW-6	27.09	264	1,500	74,057	1825	1320	0.0002	5.35	116351.527	5.065772087
EW-7	27.69	264	1,500	74,057	1825	1160	0.0002	5.35	150662.084	5.178003971
EW-8	28.47	264	1,500	74,057	1825	980	0.0002	5.35	211090.067	5.324467798
EW-9	30.99	264	1,500	74,057	1825	570	0.0002	5.35	623979.38	5.795170238
EW-10	29.24	264	1,500	74,057	1825	830	0.0002	5.35	294282.045	5.468763765
IW-1	-28.47	264	1,500	74,057	1825	980	0.0002	5.35	211090.067	5.324467798
IW-2	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-3	-31.88	264	1,500	74,057	1825	470	0.0002	5.35	917749.663	5.962724234
IW-4	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-5	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-6	-30.83	264	1,500	74,057	1825	590	0.0002	5.35	582392.705	5.765215926
IW-7	-33.39	264	1,500	74,057	1825	340	0.0002	5.35	1753727.51	6.243962116
IW-8	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-9	-29.36	264	1,500	74,057	1825	810	0.0002	5.35	308993.904	5.489949912
IW-10	-27.89	264	1,500	74,057	1825	1110	0.0002	5.35	164540.947	5.216273992

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -74.12

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.38	264	1,500	74,057	1825	2930	0.0002	5.35	23614.8238	4.373184709
EW-2	23.71	264	1,500	74,057	1825	2730	0.0002	5.35	27201.6129	4.434594656
EW-3	23.96	264	1,500	74,057	1825	2590	0.0002	5.35	30221.8066	4.480320422
EW-4	24.41	264	1,500	74,057	1825	2350	0.0002	5.35	36709.9865	4.564784225
EW-5	24.72	264	1,500	74,057	1825	2200	0.0002	5.35	41886.5497	4.622074588
EW-6	25.40	264	1,500	74,057	1825	1900	0.0002	5.35	56158.1442	4.749412748
EW-7	25.89	264	1,500	74,057	1825	1710	0.0002	5.35	69331.0422	4.840927729
EW-8	26.43	264	1,500	74,057	1825	1520	0.0002	5.35	87747.1003	4.943232774
EW-9	27.73	264	1,500	74,057	1825	1150	0.0002	5.35	153293.687	5.185524269
EW-10	27.16	264	1,500	74,057	1825	1300	0.0002	5.35	119959.113	5.079033245
IW-1	-27.23	264	1,500	74,057	1825	1280	0.0002	5.35	123737.122	5.09250001
IW-2	-28.76	264	1,500	74,057	1825	920	0.0002	5.35	239521.385	5.379344295
IW-3	-28.82	264	1,500	74,057	1825	910	0.0002	5.35	244814.516	5.388837165
IW-4	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-5	-30.83	264	1,500	74,057	1825	590	0.0002	5.35	582392.705	5.765215926
IW-6	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-7	-31.50	264	1,500	74,057	1825	510	0.0002	5.35	779434.451	5.891779598
IW-8	-31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-9	-28.82	264	1,500	74,057	1825	910	0.0002	5.35	244814.516	5.388837165
IW-10	-28.66	264	1,500	74,057	1825	940	0.0002	5.35	229437.416	5.360664243

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -86.58

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.08	264	1,500	74,057	1825	2520	0.0002	5.35	31924.1151	4.504118868
EW-2	24.61	264	1,500	74,057	1825	2250	0.0002	5.35	40045.61	4.602554913
EW-3	24.63	264	1,500	74,057	1825	2240	0.0002	5.35	40403.9582	4.606423913
EW-4	25.35	264	1,500	74,057	1825	1920	0.0002	5.35	54994.2764	4.740317492
EW-5	25.40	264	1,500	74,057	1825	1900	0.0002	5.35	56158.1442	4.749412748
EW-6	26.34	264	1,500	74,057	1825	1550	0.0002	5.35	84383.3093	4.926256553
EW-7	27.42	264	1,500	74,057	1825	1230	0.0002	5.35	134001.521	5.127109727
EW-8	27.27	264	1,500	74,057	1825	1270	0.0002	5.35	125693.41	5.099312508
EW-9	29.78	264	1,500	74,057	1825	740	0.0002	5.35	370217.13	5.56845651
EW-10	29.36	264	1,500	74,057	1825	810	0.0002	5.35	308993.904	5.489949912
IW-1	-27.12	264	1,500	74,057	1825	1310	0.0002	5.35	118134.666	5.072377358
IW-2	-27.98	264	1,500	74,057	1825	1090	0.0002	5.35	170634.543	5.232066954
IW-3	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-4	-30.31	264	1,500	74,057	1825	660	0.0002	5.35	465406.108	5.667832079
IW-5	-33.39	264	1,500	74,057	1825	340	0.0002	5.35	1753727.51	6.243962116
IW-6	-31.50	264	1,500	74,057	1825	510	0.0002	5.35	779434.451	5.891779598
IW-7	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-8	-31.79	264	1,500	74,057	1825	480	0.0002	5.35	879908.423	5.944437475
IW-9	-31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-10	-29.65	264	1,500	74,057	1825	760	0.0002	5.35	350988.401	5.545292765

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -79.68

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.34	264	1,500	74,057	1825	2960	0.0002	5.35	23138.5707	4.364336528
EW-2	23.85	264	1,500	74,057	1825	2650	0.0002	5.35	28868.7648	4.460428202
EW-3	23.75	264	1,500	74,057	1825	2710	0.0002	5.35	27604.5942	4.440981368
EW-4	24.39	264	1,500	74,057	1825	2360	0.0002	5.35	36399.5441	4.561095944
EW-5	24.31	264	1,500	74,057	1825	2400	0.0002	5.35	35196.3369	4.546497466
EW-6	25.11	264	1,500	74,057	1825	2020	0.0002	5.35	49684.0752	4.696217211
EW-7	26.05	264	1,500	74,057	1825	1650	0.0002	5.35	74464.9773	4.871952061
EW-8	25.75	264	1,500	74,057	1825	1760	0.0002	5.35	65447.7339	4.815894614
EW-9	27.45	264	1,500	74,057	1825	1220	0.0002	5.35	136207.27	5.134200288
EW-10	27.61	264	1,500	74,057	1825	1180	0.0002	5.35	145598.176	5.163155935
IW-1	-25.94	264	1,500	74,057	1825	1690	0.0002	5.35	70981.7235	4.85114654
IW-2	-26.88	264	1,500	74,057	1825	1380	0.0002	5.35	106453.949	5.027161777
IW-3	-27.38	264	1,500	74,057	1825	1240	0.0002	5.35	131848.921	5.120076579
IW-4	-28.87	264	1,500	74,057	1825	900	0.0002	5.35	250285.063	5.398434931
IW-5	-29.41	264	1,500	74,057	1825	800	0.0002	5.35	316767.032	5.500739976
IW-6	-31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-7	-31.79	264	1,500	74,057	1825	480	0.0002	5.35	879908.423	5.944437475
IW-8	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-9	-31.07	264	1,500	74,057	1825	560	0.0002	5.35	646463.331	5.810543896
IW-10	-32.09	264	1,500	74,057	1825	450	0.0002	5.35	1001140.25	6.000494922

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -84.56

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	24.07	264	1,500	74,057	1825	2530	0.0002	5.35	31672.2493	4.500678907
EW-2	24.82	264	1,500	74,057	1825	2150	0.0002	5.35	43857.415	4.64204303
EW-3	24.39	264	1,500	74,057	1825	2360	0.0002	5.35	36399.5441	4.561095944
EW-4	25.32	264	1,500	74,057	1825	1930	0.0002	5.35	54425.8639	4.735805332
EW-5	24.87	264	1,500	74,057	1825	2130	0.0002	5.35	44684.8951	4.650160743
EW-6	25.89	264	1,500	74,057	1825	1710	0.0002	5.35	69331.0422	4.840927729
EW-7	27.53	264	1,500	74,057	1825	1200	0.0002	5.35	140785.348	5.148557458
EW-8	26.22	264	1,500	74,057	1825	1590	0.0002	5.35	80191.0133	4.904125701
EW-9	28.62	264	1,500	74,057	1825	950	0.0002	5.35	224632.577	5.351472739
EW-10	30.03	264	1,500	74,057	1825	700	0.0002	5.35	413736.532	5.61672387
IW-1	-25.73	264	1,500	74,057	1825	1770	0.0002	5.35	64710.3006	4.810973417
IW-2	-26.22	264	1,500	74,057	1825	1590	0.0002	5.35	80191.0133	4.904125701
IW-3	-27.34	264	1,500	74,057	1825	1250	0.0002	5.35	129747.776	5.113099924
IW-4	-27.69	264	1,500	74,057	1825	1160	0.0002	5.35	150662.084	5.178003971
IW-5	-29.36	264	1,500	74,057	1825	810	0.0002	5.35	308993.904	5.489949912
IW-6	-28.82	264	1,500	74,057	1825	910	0.0002	5.35	244814.516	5.388837165
IW-7	-31.60	264	1,500	74,057	1825	500	0.0002	5.35	810923.603	5.908979941
IW-8	-31.07	264	1,500	74,057	1825	560	0.0002	5.35	646463.331	5.810543896
IW-9	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995
IW-10	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -69.20

Theoretical Drawdown of a Well at a Given Distance and a Constant Pumping Rate
Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where:

s= drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q= pumping rate in gpm (Attentuated over a period of time)

T= coefficient of transmissivity of aquifer, in gpd/ft

t= time since pumping test started, in days

r= distance, in feet, from the center of a pumped well to a point where the drawdown is measured

S= coefficient of storage (dimensionless)

b=	100	ft
K=	99	ft/day
S=	0.0002	
T =	9900	ft^2/day
T =	74,057	gpd/ft
Q =	1,500	gpm

Well ID	Drawdown of Well at a given distance (ft)	Constant	Discharge (GPM)	Transmissivity (GPD/ft)	Time since pumping started (days)	Distance to Well (ft)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
	s	264	Q	T	t	r	S			
EW-1	23.26	264	1,500	74,057	1825	3010	0.0002	5.35	22376.2321	4.349786959
EW-2	23.94	264	1,500	74,057	1825	2600	0.0002	5.35	29989.7782	4.476973254
EW-3	23.55	264	1,500	74,057	1825	2830	0.0002	5.35	25313.2016	4.403347079
EW-4	24.29	264	1,500	74,057	1825	2410	0.0002	5.35	34904.8571	4.542885865
EW-5	23.96	264	1,500	74,057	1825	2590	0.0002	5.35	30221.8066	4.480320422
EW-6	24.78	264	1,500	74,057	1825	2170	0.0002	5.35	43052.7088	4.634000482
EW-7	25.97	264	1,500	74,057	1825	1680	0.0002	5.35	71829.259	4.856301386
EW-8	25.16	264	1,500	74,057	1825	2000	0.0002	5.35	50682.7252	4.704859958
EW-9	26.81	264	1,500	74,057	1825	1400	0.0002	5.35	103434.133	5.014663878
EW-10	27.57	264	1,500	74,057	1825	1190	0.0002	5.35	143161.43	5.155826027
IW-1	-25.02	264	1,500	74,057	1825	2060	0.0002	5.35	47773.3294	4.679185509
IW-2	-25.65	264	1,500	74,057	1825	1800	0.0002	5.35	62571.2656	4.79637494
IW-3	-26.25	264	1,500	74,057	1825	1580	0.0002	5.35	81209.3016	4.909605776
IW-4	-27.05	264	1,500	74,057	1825	1330	0.0002	5.35	114608.458	5.059216668
IW-5	-27.89	264	1,500	74,057	1825	1110	0.0002	5.35	164540.947	5.216273992
IW-6	-28.66	264	1,500	74,057	1825	940	0.0002	5.35	229437.416	5.360664243
IW-7	-29.65	264	1,500	74,057	1825	760	0.0002	5.35	350988.401	5.545292765
IW-8	-32.09	264	1,500	74,057	1825	450	0.0002	5.35	1001140.25	6.000494922
IW-9	-31.98	264	1,500	74,057	1825	460	0.0002	5.35	958085.542	5.981404286
IW-10	-71.16	264	1,500	74,057	1825	0.1	0.0002	5.35	2.0273E+13	13.30691995

Note: Analysis run under the assumption of no increase or decrease in available storage

Total s -76.13

APPENDIX C

Thermal Modeling

APPENDIX C

THERMAL MODELING

Case Study 1 (in degrees Kelvin)

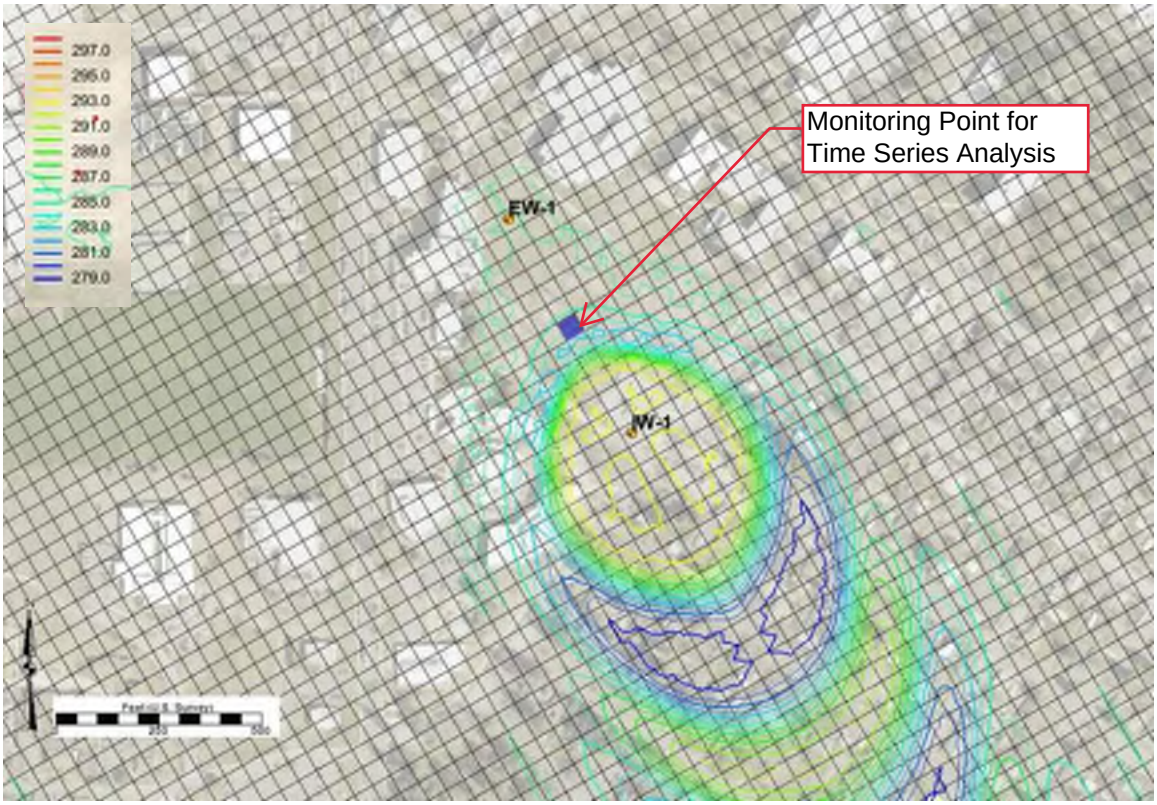


Figure C1. Temperature (Kelvin) at the end of the 5-year simulation.

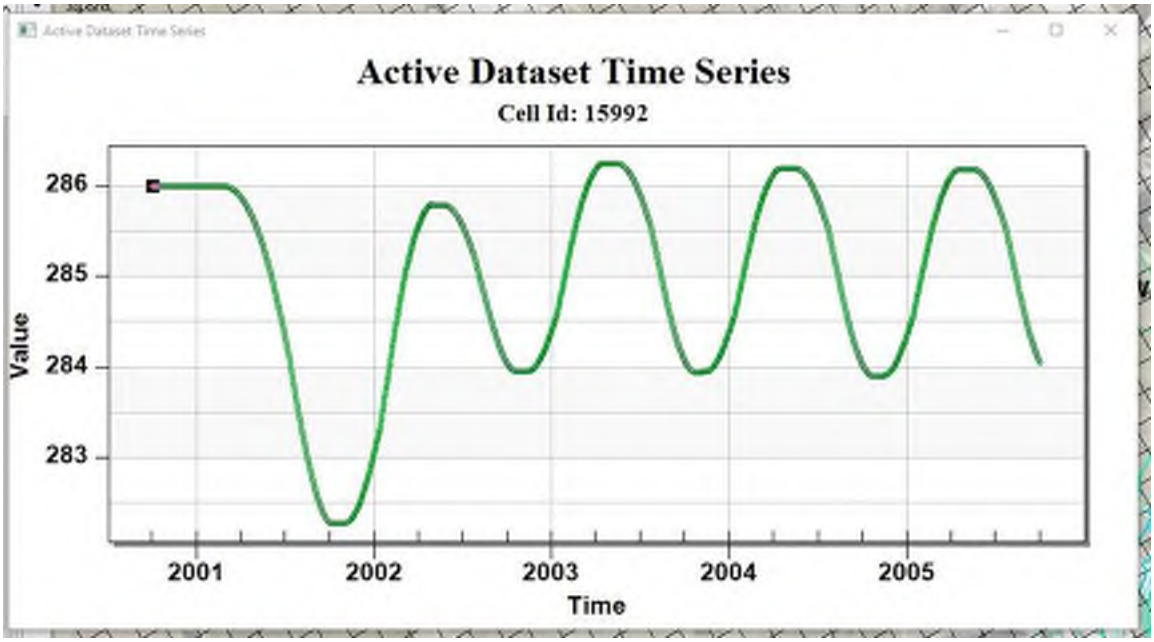


Figure C2. Timeseries of temperature in a cell in between the EW and IW (blue highlighted cell in the image above – about 300 ft down-gradient of the extraction well).

Case Study 2 (in degrees Kelvin)

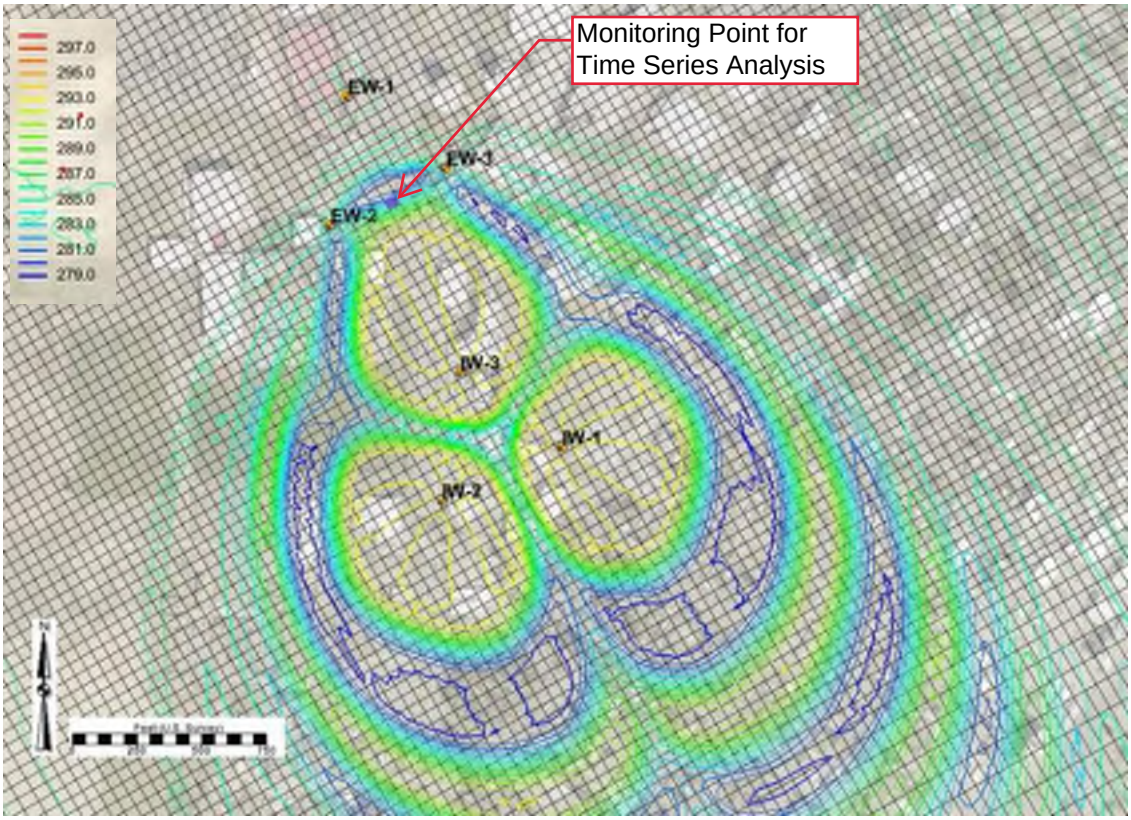


Figure C3. Temperature (Kelvin) at the end of the 5-year simulation.

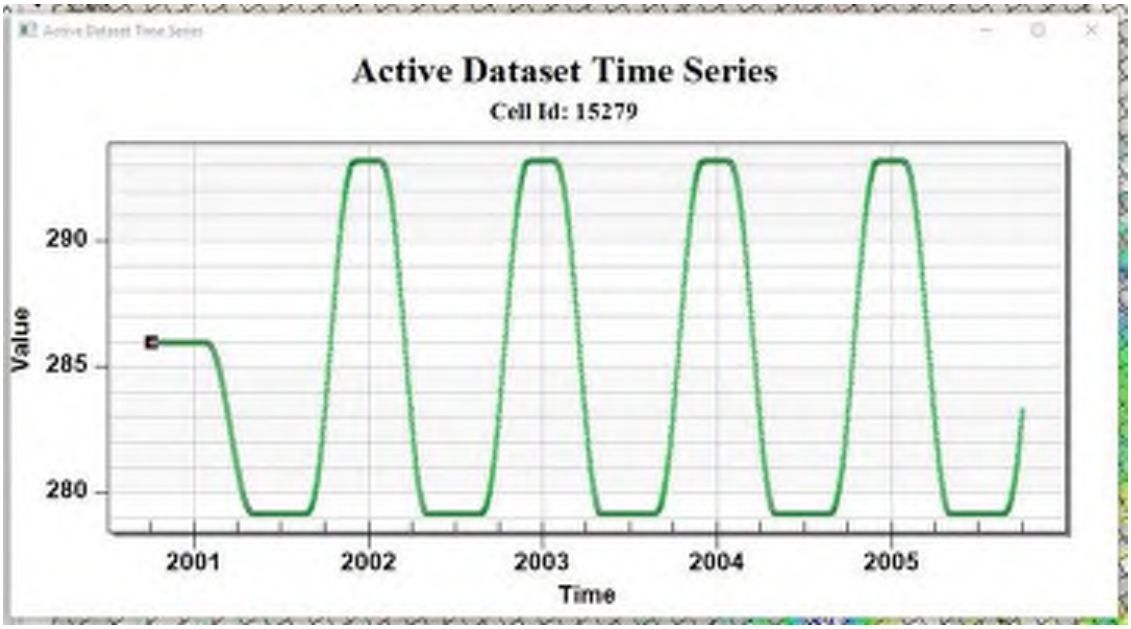


Figure C4. Timeseries of temperature in a cell in between the EW-2 and EW-3 and IW (blue highlighted cell in the image above).

Case Study 3 (in degrees Kelvin)

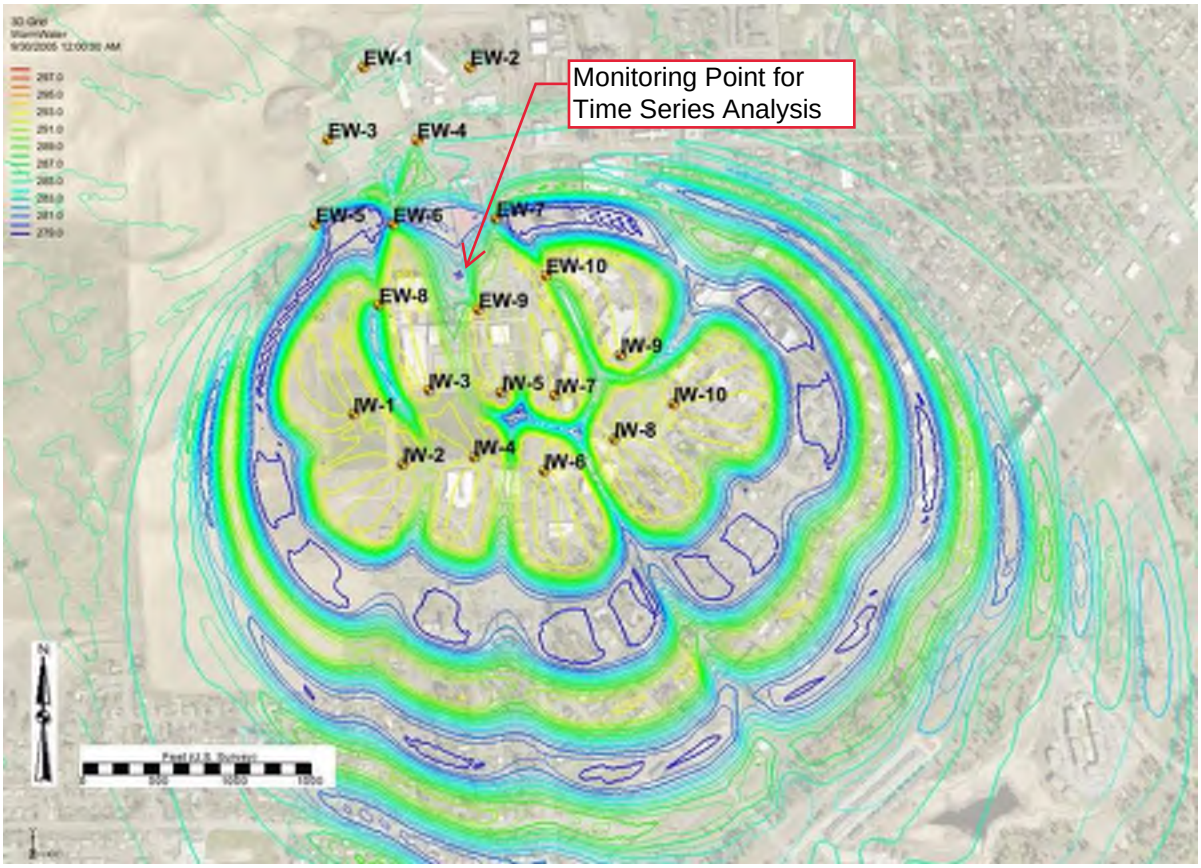


Figure C5. Temperature (Kelvin) at the end of the 5-year simulation.

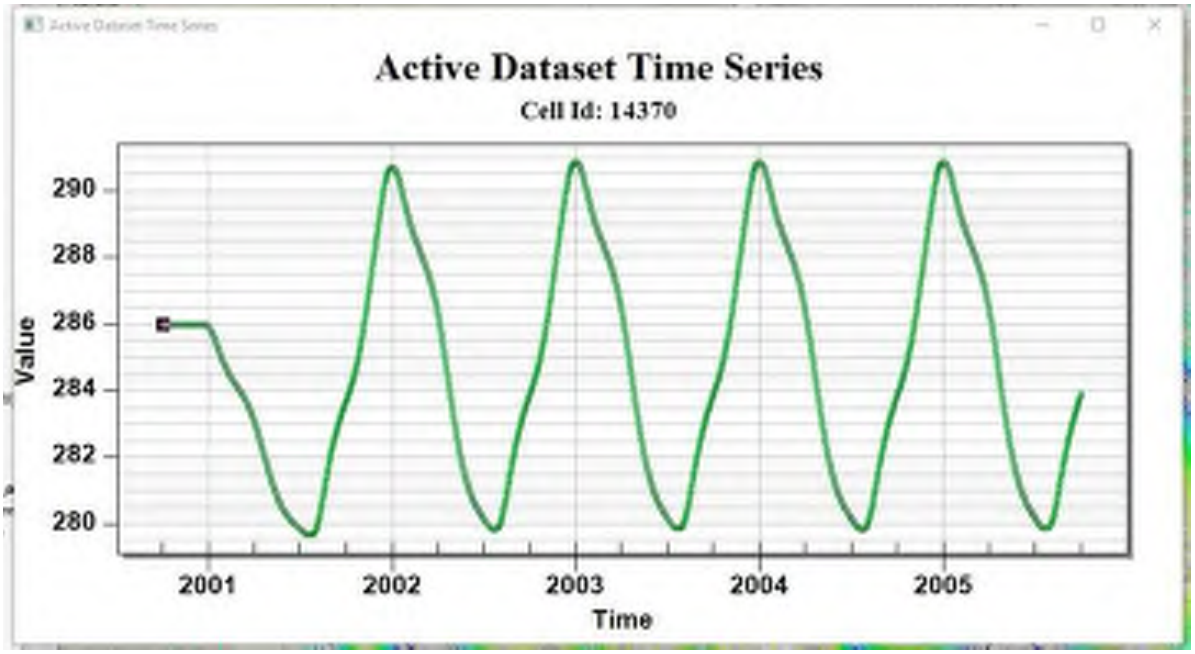


Figure C6. Timeseries of temperature in a cell in between the EW-6, EW-7, EW-8, EW-9, and EW-10 (blue highlighted cell in the image above).

APPENDIX D

Water Right Application

Application for a New Water Right Permit

Form No. ECY 040-1-14 (Rev 05-2020)

- Refer to accompanying guidance to complete this form.
- We strongly encourage applicants to seek pre-application consultation prior to applying.
- Incomplete applications will be returned.
- All fees are non-refundable (RCW 90.03.470(13)).

Processing option you are choosing:

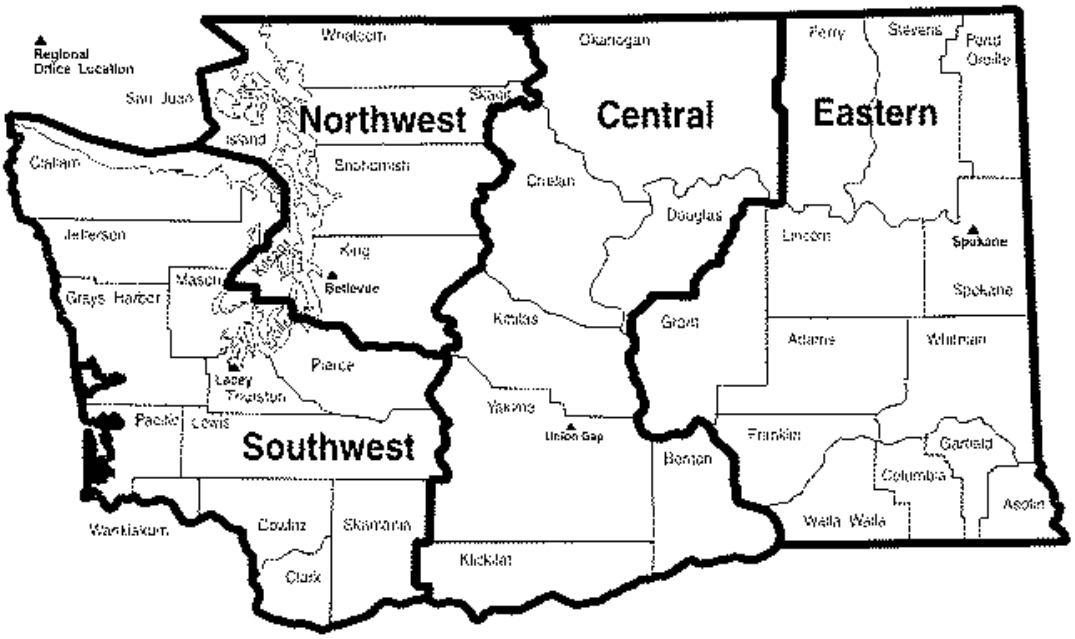
X **Standard Processing** (Department of Ecology)	☐ **Cost Reimbursement Agreement Processing** (Ecology Contractor)
A minimum $50 fee is required to apply. Additional fees may apply. Drought applications are exempt.	Contact Department of Ecology to obtain information on this option.

Submit all applications and fees to:

DEPARTMENT OF ECOLOGY
CASHIERING SECTION
PO BOX 47611
OLYMPIA, WA 98504-7611

Check the box for the region where your project is located.

- ☐ Central Region
- X Eastern Region
- ☐ Northwest Region
- ☐ Southwest Region



ADA Requests

To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program at 360-407-6872. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

WATER RESOURCES PROGRAM
Application for a New Water Right Permit

For Ecology Use
(Date Stamp)

I am applying for a:

☒ New groundwater right permit
☐ New surface water right permit

☐ Short-term water right permit (less than 4 months, non-recurring)
Dates the water will be needed:
FROM: _____/_____/_____
TO: _____/_____/_____

☐ Cost Reimbursement Processing
☐ Drought (see Attachment A)

Required submittals:

- ☐ A $50 filing fee. This fee is not required for drought or cost reimbursement applications.
- ☐ A map showing the proposed point(s) of diversion/withdrawal and place(s) of use.
- ☐ A copy of the legal description of property where the water will be used (taken from a real estate contract, property deed, or title insurance policy).
- ☐ If platted property, a complete copy of the plat map.

Date of pre-application consultation with Ecology: _____

Name of Ecology contact for pre-application: _____

1. Applicant Information (Complete all applicable boxes)

APPLICANT/BUSINESS NAME:	PHONE NO:	OTHER NO:
Eastern Washington University, Attn: Steve Schmedding	509-359-4205	509-359-0455
ADDRESS: 101 Rozell		
CITY: Cheney	STATE: WA	ZIP: 99004-2464
EMAIL ADDRESS (IF AVAILABLE): sschmedding@ewu.edu		

CONTACT NAME (IF DIFFERENT FROM ABOVE):	PHONE NO:	OTHER NO:
Gene St.Godard	509-953-9395	
RELATIONSHIP TO APPLICANT: Consultant		
ADDRESS: PO Box 28755		
CITY: Spokane	STATE: WA	ZIP: 99228
EMAIL ADDRESS (IF AVAILABLE): wnrgroup@comcast.net		

FOR ECOLOGY USE	**ECY CODING: 001-001-WR1-0285-000011** APPLICATION NO:_____ DOC ID NO._____SEPA: EXEMPT/NOT EXEMPT FEE PAID:_____ CHECK NO:_____
DATE RETURNED _____BY_____ PRIORITY DATE _____BY_____ WRIA:_____	
PRE-APPLICATION INTERVIEWER:	

2. Project Description

Attach a report with responses to the following required information, and reference the section number in your responses.

Section	Required information	Reference(s)
2.1	Provide a brief narrative explaining the general nature and intent of the proposed water use.	
2.2	If the proposed water use will include a diversion from a new or permitted reservoir, list any associated water rights, and the means of withdrawal.	
2.3	Attach a copy of any SEPA checklists or environmental analyses related to this project with this application.	
2.4	Describe how you will measure and control the rate and volume of your diversion or withdrawal.	

3. Purpose(s) and Period of Use

List all purposes for which water will be applied to a beneficial use, and provide the quantity required for each.

PURPOSE(S) OF USE	RATE (CHECK ONE BOX ONLY) ☐ CFS X GPM	ACRE-FEET PER YEAR (AF/YR)	PROPOSED NUMBER OF IRRIGATED ACRES	PERIOD OF USE (CONTINUOUS, OR DATES OF PROPOSED USE)
Heat Exchange	12,000	0	0	Continuous
TOTAL:	12,000	0	0	

Section	Required information	Reference(s)
3.1	For domestic water supply systems proposals with **fewer than 15 residential connections,** provide**:** • Projected number of connections to be served • Type of connections (e.g., home, recreational cabin)	
3.2	For domestic water supply systems proposals with **more than 15 residential connections,** provide**:** • Present population to be served water • Estimated future population to be served (20 year projection) • Whether you have a Water System Plan approved by the Washington State Department of Health, Drinking Water Division, and the date of plan approval. • Water System Identification Number • Name of water system	RCW 90.03.015
3.3	**For stockwater purposes,** provide the number of animals and type of stock, and daily water requirements per animal.	

Section	Required information	Reference(s)
3.4	**For agricultural irrigation,** calculate the acreage in which you have a controlling interest, including only: • Acreage irrigated under water rights acquired after December 8, 1977, • Acreage proposed to be irrigated under this application, and • Acreage proposed to be irrigated under other pending application(s). Is the combined acreage under existing rights greater than 6,000 acres? • Do you have a controlling interest in a Family Farm Development Permit? If yes, provide the permit number.	RCW 90.66
3.5	**For other farm uses,** describe all proposed uses.	
3.6	**For hydropower uses,** indicate: • Total feet of head • Proposed capacity in kilowatts • Describe works • Indicate all uses to which power is to be applied • FERC License Number	RCW 90.03.260
3.7	**For industrial/mining uses,** describe the type of industrial/mining operations, and the method of supplying and utilizing water.	
3.8	**For other uses,** describe your use in detail.	

4. Point(s) of Diversion or Withdrawal Location(s)

Use a separate application for each source (either surface water or groundwater). Attach additional sheets if more than four points of diversion or withdrawal are proposed. Refer to the application guidance document for more information.

Source Name	Source Location Information (Legal Description)					
SOURCE NAME (Reference by number below)	QTR QTR	QTR	SEC	TWP	RGE	PARCEL NO.
1 Extraction Well	SW	SE	11	23N	41E	13114.0005
3 Extraction Wells	SE	SE	11	23N	41E	13114.0006
3 Injection Wells	NW	NW	13	23N	41E	13132.7302, 13132.0003
1 Extraction Wells	NW	NW	13	23N	41E	13132.7302, 13132.0003
2 Injection Wells	SW	NW	13	23N	41E	13132.7302
4 Extraction Wells	NE	NE	14	23N	41E	13141.0001
3 Injection Wells	NE	NE	14	23N	41E	13141.0023, 13141.0001
1 Extraction Well	NW	NE	14	23N	41E	13141.0026, 13141.0024
2 Injection Wells	SE	NE	14	23N	41E	13141.0023

Complete one of the following tables: A for surface water, or B for groundwater

A) Point(s) of Diversion (SURFACE WATER ONLY)

☐ SPRING ☐ CREEK ☐ RIVER ☐ LAKE ☐ OTHER:		
SOURCE (identified above)	**TRIBUTARY TO:**	**GPS/ LAT-LONG**
1.		
2.		
3.		
4.		

DO YOU OWN THE POINT(S) OF DIVERSION? ☐ YES ☐ NO

B) Point(s) of Withdrawal (GROUNDWATER ONLY)

WITHDRAWAL DEVICE: X WELL ☐ OTHER:			
EXISTING WELL: ☐ YES XNO			
SOURCE (identified above)	**WELL NO.**	**WELL TAG NO.**	**GPS/ LAT-LONG**
1.	10 proposed extraction wells		Exact location to be detemined
2.	10 proposed injection wells		Exact location to be detemined

DO YOU OWN THE POINT(S) OF WITHDRAWAL? x YES ☐ NO

5. Water Storage

Section	Required information	Reference(s)
5.1	If you will be storing 10 acre-feet or more of water and/or if the water depth will be 10 feet or more at the deepest point and some portion of the storage will be above grade, you must also complete an "*Application for Permit to Construct a Reservoir*," and a *"Dam Construction or Decommissioning Permit Application*."	WAC 173-175 WAC 508-12-260
5.2	If applicable, describe your proposed impoundment, including the volume and maximum depth.	
5.3	If you are proposing an Aquifer Storage and Recovery project, Do not use this form. Use "*Form ECY 040-1-60: Application for a Reservoir Permit"* • https://fortress.wa.gov/ecy/publications/summarypages/ECY040160.html	

6. Place of Use

QTR QTR	QTR	SEC	TWP	RGE	COUNTY	PARCEL NO.	NO. OF IRRIGATED ACRES
	SE	11	23N	41E	Spokane	Area serviced by EASTERN WASHINGTON UNIVERSITY	
	SW	12	23N	41E			
	NW	13	23N	41E			
	NE	14	23N	41E			

Outline the area to be irrigated on your attached map, if applicable.

LEGAL LANDOWNER OF PROPOSED PLACE OF USE (IF DIFFERENT THAN APPLICANT)	PHONE NO.	ALT PHONE NO.
ADDRESS		
CITY	STATE	ZIP CODE
EMAIL ADDRESS (IF AVAILABLE)		

Attach additional sheets as necessary.

7. Related Water Rights (if applicable)

Section	Required information	Reference(s)
7.1	List any other water rights (applications, permits, certificates, or claims) related to this application. Include any rights that overlap the place of use.	
7.2	Explain how the water rights listed above have been exercised.	

8. System Design and Operation

Section	Required information	Reference(s)
8.1	Provide a description of the proposed water supply system from the point of diversion or withdrawal to the proposed place of use.	
8.2	Provide preliminary design plans and specifications for the proposed use, including diversion or withdrawal and conveyance facilities, if applicable, and the proposed flow rate and volume design capacity.	
8.3	Provide the projected system efficiency.	
8.4	**For surface water diversions,** describe how your plans comply with WDFW fish screening requirements.	RCW 77.57

DEVELOPMENT SCHEDULE

Section	Required information	
8.5	Provide a general timeline that includes the steps needed to begin the project, complete the project, and put the water to full beneficial use.	
8.6	Identify and discuss other land-use or environmental permits required and the timeline to obtain those permits.	

9. Hydrogeologic Analysis

We strongly recommend that applicants consult with Ecology in a pre-application meeting prior to conducting ***any*** hydrogeologic work, to determine the scope of data required for processing this application.

Section	Required information	Reference(s)
9.1	If known, describe the hydrogeologic setting and identify all groundwater bodies and surface water bodies involved.	
9.2	If known, describe: • Geographic recharge and discharge areas • Seasonal variations of groundwater elevations • Interrelationships between surface water and groundwater, and between aquifers • Barriers to flow • Hydrologic boundaries	
9.3	Attach any available well information including: • Water well report • Well diameter and depth • Motor and pump specifications (i.e., make, horsepower, and type) • Pump test data • Well locations (must be identified as outlined in Section 11)	
9.4	If known, describe the following charicteristics of the aquifer, and cite the source of that information: • Aquifer transmissivity • Aquifer storage coefficient and specific yield • Saturated thickness • Aquitard leakage • A detailed description of groundwater-flow boundaries • Water-level hydrographs for wells • Associated water-quality information	

If your proposed water use impacts or impairs a protected water source or an existing water right, you will need to discuss mitigation options in **Attachment B** with the appropriate regional office.

10. Environmental Assessment

Section	Required information	
10.1	Describe the aquatic uses of any related surface water bodies (i.e., fish and wildlife, recreation and aesthetic, water quality, etc.).	
10.2	Indicate whether the related surface water is fish-bearing, including whether it is inhabited by salmonids. List species and the times of year they are present. https://apps.wdfw.wa.gov/salmonscape/	

11. Driving Directions

Section	Required information	Reference(s)
11.1	Site address, and detailed driving directions to the project site.	

12. Maps and Other Documentation

Section	Required information	
12.1	Attach detailed map(s) clearly indicating the following: • The proposed places of use for all rights related to this application. If any overlapping water rights for the place of use, or multiple rights that share the same point(s) of diversion/withdrawal exist, provide one map depicting all of the historic points of diversion, means of conveyance, and places of use. Identify related rights as such by water right number. • The county parcel numbers for the proposed place of use, unless the place of use is for a large service area such as that served by an irrigation district or municipal water system. Identify the name of the irrigation district or the water system, if applicable. • The proposed locations of the point(s) of diversion/withdrawal. • The names, informal or formal, used to identify each point of diversion/withdrawal (e.g., Well No. 1, River Well, S01, Smith Dam, etc.). • A grid layer referencing Section, Township, and Range of the area. • The location of the water delivery system and other such features relevant to your proposed application (e.g., mainlines, reservoirs, booster pumps, etc.)	

13. Signatures

I certify that the information provided in this application is true and accurate to the best of my knowledge. I understand that in order to process my application, I grant staff from the Department of Ecology access to the site for inspection and monitoring purposes. Even though the employees of the Department of Ecology may have assisted me in the preparation of the above application, all responsibility for the accuracy of the information rests with me, the applicant.

Print Name (Eastern Washington University)	Signature	Date
Print Name (Legal Owner or Part Owner Place of Use)	Signature	Date
Print Name (Legal Owner or Part Owner Place of Use)	Signature	Date

For additional information, contact the Ecology regional office where your project is located:

Region	Counties served	Mailing Address	Phone
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	3190 160th Ave SE Bellevue, WA 98008	425-649-7000
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300

ADA Requests

To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program at 360-407-6872. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Attachment A: Drought Authorizations

Note: In order to apply for a new temporary drought permit, applicants must be conducting a previously established activity under a valid water right permit, certificate, or water right claim within an area covered by a formal drought declaration. (WAC 173-166).

Complete this attachment and the following sections of the Application for a New Water Right:

- Sections 1 through 5
- Section 11. Maps and other Documentation

Section	Required information	Reference(s)
A.1	Describe the specific circumstances pertaining to your water shortage. Describe how existing water rights are insufficient to address these impacts due to the drought.	
A.2	Describe how the water right proposed will address these impacts.	
A.3	Have you had any previous drought-specific authorizations for the subject parcels? If yes: • What are the Drought Authorization numbers? • Did those former authorizations cause impairment to other water users?	RCW 43.83B.410

Attachment B: Mitigation Plan

Section	Required information	Reference(s)
B.1	Identify the source of supply for the proposed mitigation water.	
B.2	Estimate the consumptive quantity of water for the proposed use. Describe the methodology used to support your estimate.	
B.3	Describe how the proposed mitigation would offset the impacts of the proposed withdrawal or diversion.	
B.4	Describe the measures that will be taken to ensure mitigation will be maintained for the duration of the water right authorization.	
B.5	Provide copies of any agreements between you and other parties regarding mitigation for impacts, if applicable.	
B.6	Describe the benefits and costs, including environmental effects, of any water impoundment or other resource management technique that is included as a component of the application.	RCW 90.03.255 RCW 90.44.055
B.7	**For surface water**, analyze whether there will be any increased water supply from the impoundment or technique, including recharge of groundwater, as a means of making water available or otherwise offsetting diversion impacts.	
B.8	**For groundwater**, analyze whether there will be any increased water supply from the impoundment or technique, including recharge of groundwater, as a means of making water available or otherwise offsetting the impact of the diversion of surface water.	
B.9	If you intend to offset your new use, describe how and when non-consumptive water returns to groundwater or surface water, and explain how this volume was estimated. Specifically describe how the quantity, timing and location of return flow would change if the proposed permit is approved.	WAC 173-500-050(5) WAC 173-500-050(9) POL 1020

Attachment
EWU Application for Non-Consumptive Water Right
Proposed Heat Exchange System at EWU Campus

SECTION 2: Project Description

2.1 Brief Narrative

Eastern Washington University (EWU) is evaluating a proposed heat exchange project plan at the EWU campus. This water right application is being submitted to support the non-consumptive use and consists of a phased proposal designed to determine the feasibility and design Ground Source based Heat Pump systems (GSHPs).

The GSHP system proposed by MSI Engineers (engineers under contract to EWU) is an open-loop type system, where groundwater is pumped out of the basalt aquifers, circulated through a heat exchanger, and reinjected back into the earth. Hydraulic and thermal modeling was completed to evaluate hydraulic and thermal capacity of the local aquifer to meet the GHSP demands for each case study (Landau, 2023). Aquifer extraction requires a water right from the Washington Department of Ecology (Ecology) and reinjection requires registration with Ecology's Underground Injection Control program. Permitting considerations are discussed in the appurtenant section below. A detailed discussion of the hydrogeologic assessment, modeling results, well design and recommendations are included in the Landau (2023) report completed for this project.

Closed-loop heat pump systems circulate water through buried piping to exchange heat with the ground, whereas open-loop type systems (Figure 1) pump water directly in and out of the earth, from an available aquifer source. The nature of heat transfer requires closed-loop type systems to utilize a significant number of expensive vertical wells, or large open fields for shallow horizontal loops, whereas open-loop type systems, which use water directly, instead of relying on heat transfer to the earth, only required a few wells. This allows for an economy of both scale and space constraints, especially in the context of a college campus, where open space for multiple wells or heat transfer fields is extremely limited.

The evaluation to be completed at the EWU facility is planned to be undertaken in a phased approach, with the three case studies described below. This application is being submitted assuming the project will continue to full buildout throughout the university. Should the project plans be modified during feasibility and/or construction activities, the application may be modified during development or at the proof of appropriation phase. The three case studies for the project are:

CASE STUDY – 1: MARTIN-WILLIAMSON HALL GSHP SYSTEM

The first case to be studied is based around the upcoming project involving the remodel and retrofit of the existing Martin-Williamson Hall facility. Because the existing, aging, HVAC system in Martin-Williamson Hall will be replaced with an entirely new, modern HVAC system, the application of a possible GSHP based system is easy to propose. This phase will require one 16-inch extraction well and one 16-inch injection well. Proposed Qi for the first phase is 600 gpm.

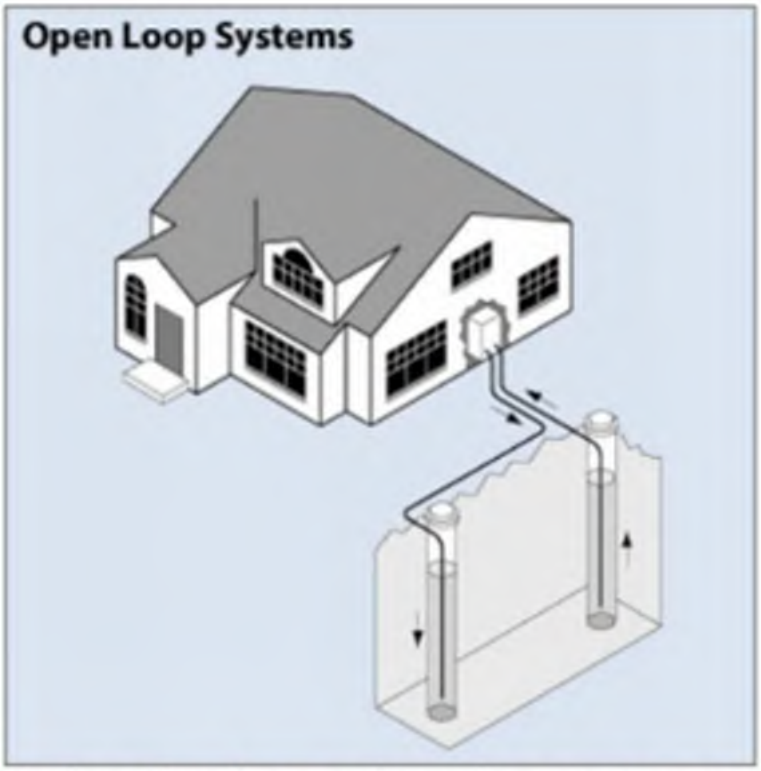
CASE STUDY – 2: FOUR (4) BUILDINGS – MICRO-DISTRICT GSHP SYSTEM

Then, considering the initial M-W case as a likely starting point for the campus transition to GSHP based systems, the nearby buildings that include the JFK Library, the Computing and Engineering Building (CEB) and the Art-Theater-Music (ART) complex, were chosen as part of a so-called Micro-District Heat Transfer Center, under the second case study. This would be a facility where the proposed several open-loop system source wells would deliver the ground water to heat exchangers for the building heat pump systems before the ground water was returned to the ground via the reinjection wells. This phase will require three 16-inch extraction wells and three 16-inch injection wells. Proposed Qi for the second phase is 3,600 gpm.

CASE STUDY – 3: ENTIRE CAMPUS – GSHP SYSTEMS

The third, and final, case study would provide a large network of source and reinjection wells, serving multiple micro-district heat transfer centers sprinkled around the campus, to support the entire campus using GSHP systems. This would be the upper boundary case in converting the whole campus to be conditioned by open-loop ground-source type heat pump systems. This phase will require ten 16-inch extraction well and ten 16-inch injection well. Proposed Qi for the full campus buildout phase is 12,000 gpm.

Figure 1: Generalized Schematic of Open Loop System.



Configuration of a groundwater heat pump system

2.2 Diversion and Other Water Rights

The proposed project will not include a diversion from a new or permitted reservoir. The project area is currently within the boundaries of the EWU Water System Service area. Water supplied to the municipal water system is provided by two wells as shown on Figure 2. This service area currently utilizes three water rights. These include:

Table 1: Summary EWU Existing Water Rights

Water Right No.	Type	Priority	Type	Qi (gpm)	Qa (AF)	Irr. Ac.
G3-*09810CWRIS	groundwater	9/19/1968	Certificate	200	162	--
G3-25018C	groundwater	8/9/1976	Certificate	150	200	125
G3-27882C	groundwater	5/28/1996	Certificate	550	520	125

Note: Water rights above have a provision that the total amount of water authorized for withdrawal under Groundwater Certificates No. 7218-A, G3-25018C and G3-27882C is limited to 900 gallons per minute and 922 acre-feet per year.

This proposal is independent of the three existing water rights currently owed by EWU. These water rights are currently undergoing a proof of appropriation and/or conforming documents for the rights.

2.3 SEPA

A SEPA determination evaluates if a proposed water right diversion will cause significant adverse environmental impacts. A SEPA threshold determination is required for:

- Surface water applications for more than 1 cubic feet per second (cfs). For agricultural irrigation, the threshold increases to 50 cfs, if the project isn't receiving public subsidies.
- Groundwater applications requesting more than 2,250 gpm.
- Projects with several water right applications where the combined diversions meet the conditions listed above.
- Projects subject to SEPA for other reasons.
- Applications that are part of several exempt actions that collectively trigger SEPA under WAC 197-11-305.

A SEPA will be required under this application. The SEPA will be completed upon final submittal of this application.

2.4 Measuring

The groundwater withdrawal will be measured by a dedicated meter at each of the well heads. Pumping rate and quantity withdrawn and injected will be recorded weekly.

SECTION 3: Purpose and Period of Use

3.1 – Not Applicable
3.2 – EWU water system has a DOH approved water system plan (WSP) for Water System ID# 21900. This project is proposed to be independent of those water rights.
3.3 - Not Applicable
3.4 – Not Applicable
3.5 – Not Applicable
3.6 – Not Applicable
3.7 – Industrial Use of Water

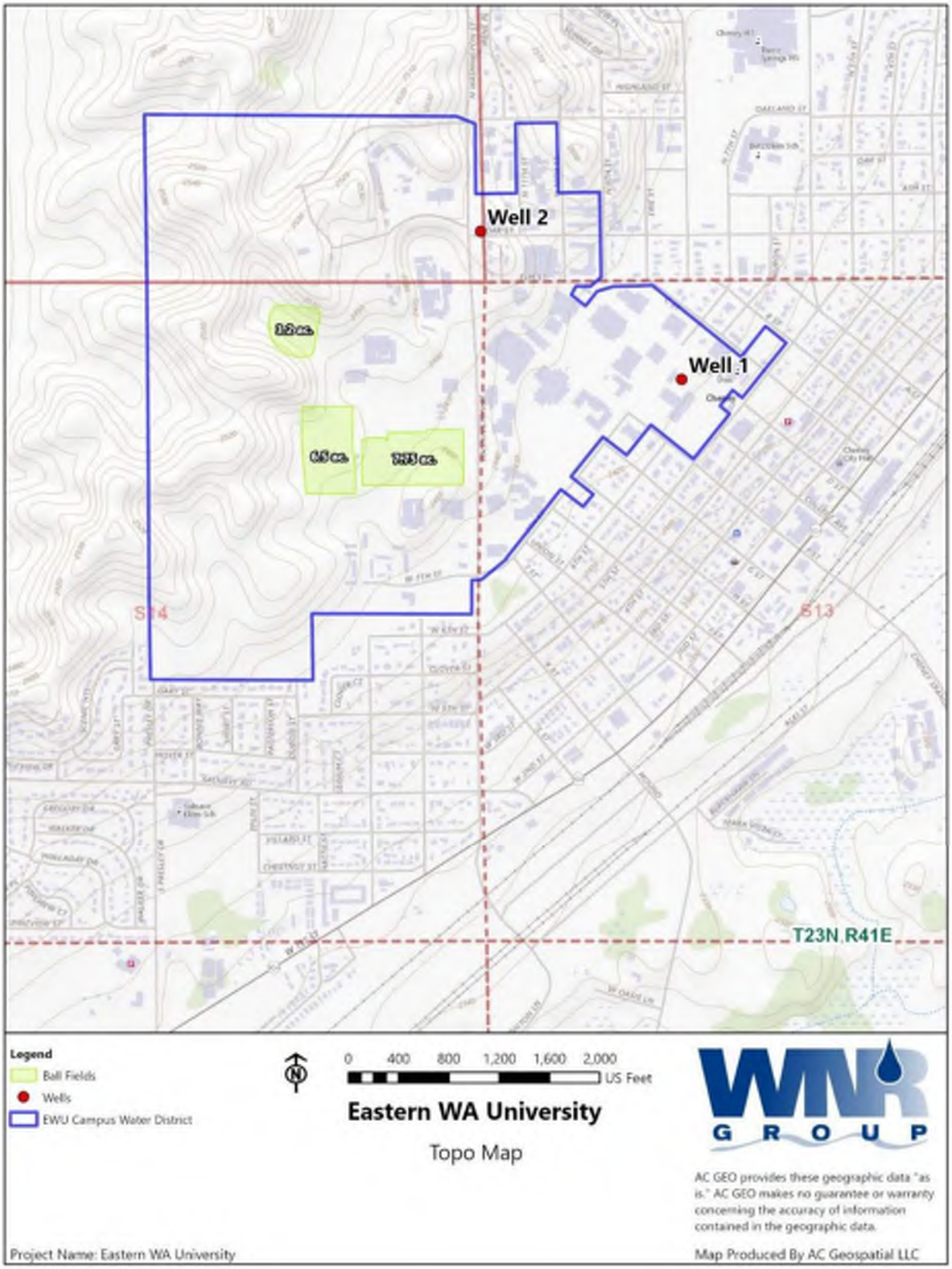


Figure 2: Location of existing municipal wells for EWU service area.

3.8 – Description of Use

The primary goal of this project is to provide EWU with information on a possible pathway to reducing fossil fuel use at the existing campus central heating (and cooling) plant, with the ultimate goal of achieving an Energy Efficient, Zero-Carbon campus. As such it will be looking at the availability of, and characteristics of, the existing aquifer water within the Grande Ronde aquifer beneath the EWU campus. The proposed use is using this ground water for the purpose of heating and/or cooling the EWU campus buildings, as this aquifer acts as a heat-source or heat-sink for efficient operation of ground-source heat pump systems. A ground-source heat pump system is an electric energy-based heating and cooling system, rather than a fossil fuel based system, which uses the earth as a source of stable "energy" for extracting or rejecting heat to (i.e., heat sink or heat source), for the purpose of heating or cooling buildings. Although there are other possible heat pump based systems that utilize the ambient outdoor air, rather than the earth, as the heat source or heat sink, using the earth is considered more efficient, since the thermal mass is much more dense than air, and the typical 50 to 60 deg. F ground temperatures are also more stable than the air, which can vary well over 100 deg. F throughout the seasons.

The heat exchange process calls for pumping water from the proposed source (extraction) wells, passing it through a heat pump exchange unit, for the purpose of heat generation, and then injecting it back into the ground through the proposed injection wells, currently planned at approximately a 600-foot spacing. The intent is to have the full discharge from the heat exchange system return to the source aquifer within a short time of being withdrawn. By doing this, the purpose is considered a non-consumptive use. The standard for the project is for the water to be returned to the same aquifer location from which it was withdrawn without any changes to its chemical content. The project will also require approval through the Underground Injection Control registration, discussed later in this document.

The use of water is proposed for heat exchange purposes and is defined in statute as a beneficial use (RCW 90.54.020(1)) and Ecology Policy-2020. The use is defined as a non-consumptive use.

SECTION 5: Water Storage

5.1 – Not Applicable

5.2 – Not Applicable

5.3 – Not Applicable

SECTION 6

The proposed Heat Exchange project is being evaluated for use within the boundaries of the EWU Water System area. However, the Heat Exchange program will be operated independently of the water supply system currently in use for the university.

SECTION 7 – Related Water Rights

7.1 - The EWU facility is currently developing the change to their three water rights shown in Table 1. These three rights are primarily used for municipal water supply and irrigation on the campus. The WNR Group also conducted a screen of the Ecology WRTS database to determine what water rights were within a ½-mile radius of the boundaries of the EWU service area. These results are shown in Table 2 and on Figure 3.

TABLE 2 – WATE RIGHTS AT AND WITHIN ½-MILE OF EWU WSA BOUNDARY

Water Right No.	Type	Priority Date	Wtr Rgt Type	Qi (gpm)	Qa (AF/yr)	Irrigated Area Quantity	Purpose Of Use Type Codes	Name on Certificate
G3-*09810CWRIS	groundwater	9/19/1968	Certificate	200	162	--	CI, CDS	Eastern Washington University
G3-25018C	groundwater	8/9/1976	Certificate	150	200	125	CDS, HE, Irr	Eastern Washington University
G3-27882C	groundwater	5/28/1996	Certificate	550	520	125	CDS, HE, Irr	Eastern Washington University
G3-*00661SWRIS	groundwater	1/1/1928	Certificate	75	12.3	--	RW (supply for locomotives)	Northern Pacific Railway Co
G3-*00359S	groundwater	8/1/1924	Certificate	625	245	--	MU CI	Cheney City
G3-*00720C	groundwater	1/28/1948	Certificate	900	550	--	MU CI	Cheney City
G3-*00358S	groundwater	8/1/1915	Certificate	475	100	--	MU CI	Cheney City
G3-*00720C	groundwater	1/28/1948	Certificate	900	550	--	MU CI	Cheney City
G3-25859CWRIS	groundwater	1/31/1978	Certificate	1250	2000	--	MU	Cheney City
G3-22439CWRIS	groundwater	1/30/1974	Certificate	500	804	--	MU	Cheney City
G3-*05472C	groundwater	1/25/1960	Certificate	900	1440	--	MU	Cheney City
G3-*07939C	groundwater	1/27/1966	Certificate	750	975	--	MU	Cheney City
G3-034030CL	groundwater	3/1/1954	Claim	80	3	--	DG ST	GREIN
G3-019199CL	groundwater	1/1/1918	Claim	20	1.9	0.5	IR	NABISCO
G3-018216CL	groundwater	6/1/1919	Claim	10	2	--	DG ST	CHRISTOPHER, STEFAN
G3-024741CL	groundwater	1/1/1944	Claim	15	2	--	DG	POPE, STEVE
G3-005892CL	groundwater	4/1/1959	Claim	5	2	--	IR	KINGSLY, Bernard
G3-038954CL	groundwater	1/1/1942	Claim	30	92	--	ST DG	NELSON, Marie
G3-146718CL	groundwater	--	Claim	--	--	--	DG IR	HENRY, Douglas
G3-053567CL	groundwater	--	Claim	--	--	--	DG	PRENTICE, Leonard
G3-139761CL	groundwater	--	Claim	--	--	--	IR	Ableman, Lee
G3-074259CL	groundwater	--	Claim	--	--	--	DG	THUROW, Carl
G3-059148CL	groundwater	--	Claim	--	--	--	DG	LOUTHAN, John
G3-014816CL	groundwater	7/1/1970	Claim	30	48	--	DG	WYATT, Anne
S3-027151CL	surface Wtr	1/1/1900	Claim	0.1	2	0.25	IR ST	DARE, Lisle

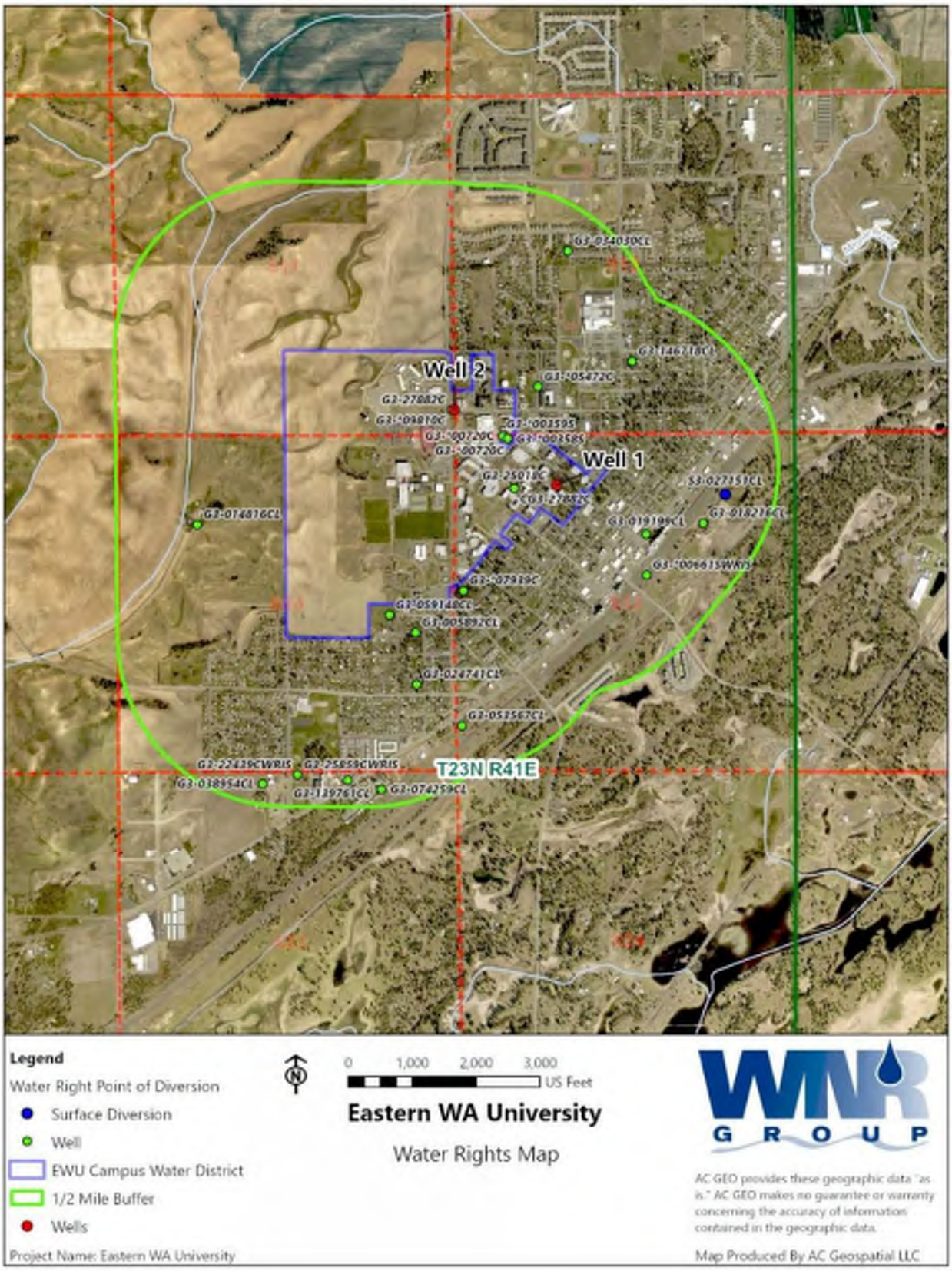


FIGURE 3: Map showing location of water rights within ½-mile of EWU Service Area boundaries.

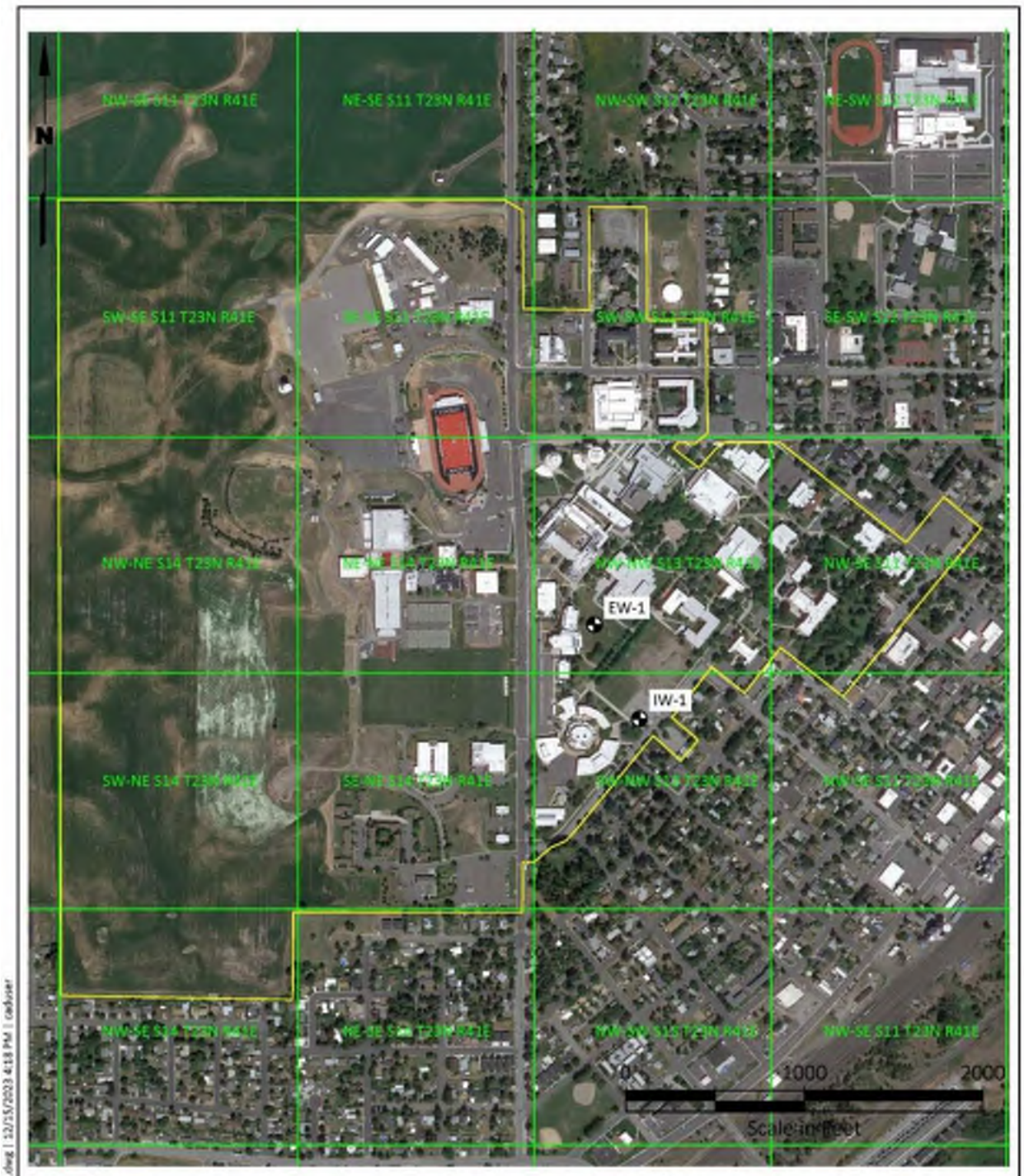
As shown on Table 2, EWU utilizes three water rights within their service area. The City of Cheney also utilizes nine water rights for their water system area. Although the water system areas do not overlap, the City does operate wells within the boundaries of EWU's service area. Outside of the two municipal water purveyors, no other certificates are located within ½-mile of the boundaries of EWU service area. Twelve groundwater and one surface water claims are within ½-mile of the EWU service area as shown in the water right summary Table 2. These claims are all for domestic water use with irrigation less than half an acre and stock watering. Review of well logs show that these small water uses are primarily using water from the shallow Wanapum formation and do not have wells completed into the deeper Grande Ronde aquifer like EWU and the City of Cheney. In addition, all but one of these Claims are located down or cross-gradient of the proposed heat exchange groundwater extraction wells.

7.2 – Water rights currently owned by EWU have been exercised to provide domestic and municipal use within the EWU water service area. Groundwater is also used for irrigation on sports fields around the campus, and for building land scaping and lawn irrigation throughout the campus. EWU is currently undergoing the CWRE evaluation for the proof of appropriation of the changes to these rights and completion of the conforming documents to change the water rights to municipal use. The water right being submitted under this request will be operated independently of the existing water rights and develop its own extraction and injection wells. No shared wells will be utilized under this request and the existing rights.

SECTION 8 System Design and Operation

The system design and operation are discussed in detail in the MSI Engineers GSHP Feasibility Report (MSI, 2023) and the Landau Groundwater Temperature Modeling Report (2023). Final design and operations will be based on any results of the feasibility phase of this project.

As discussed previously, three phases are proposed for this GSHP project. Preliminary modelling results completed by Landau (2023) have tentatively determined the proposed place of withdrawal of 10 wells and the proposed placement of ten injection wells. The following figures (4a, 4b and 4c) outline the location of the proposed extraction wells and accompanying proposed injection wells for each of the three phases discussed previously. These locations correspond to the 20 proposed wells included within this application.



Legend

- Approximate Well Location
- Place of Use
- Quarter Sections (Township & Range)

Source: Google Earth, accessed December 2015

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Landau Associates | Drawing3.dwg | 12/15/2023 4:18 PM | cadvuser

LANDAU ASSOCIATES

Eastern Washington University
GSHP Hydrogeological Evaluation
Cheney, Washington

Case Study 1

Figure 4-A


N
NW-SE S11 T23N R41E
NE-SE S11 T23N R41E
NW-SW S12 T23N R41E
SW-SE S11 T23N R41E
NW-NE S14 T23N R41E
SW-NE S14 T23N R41E
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NE-SE S14 T23N R41E
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EW-1
EW-2
EW-3
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IW-2
IW-3
0
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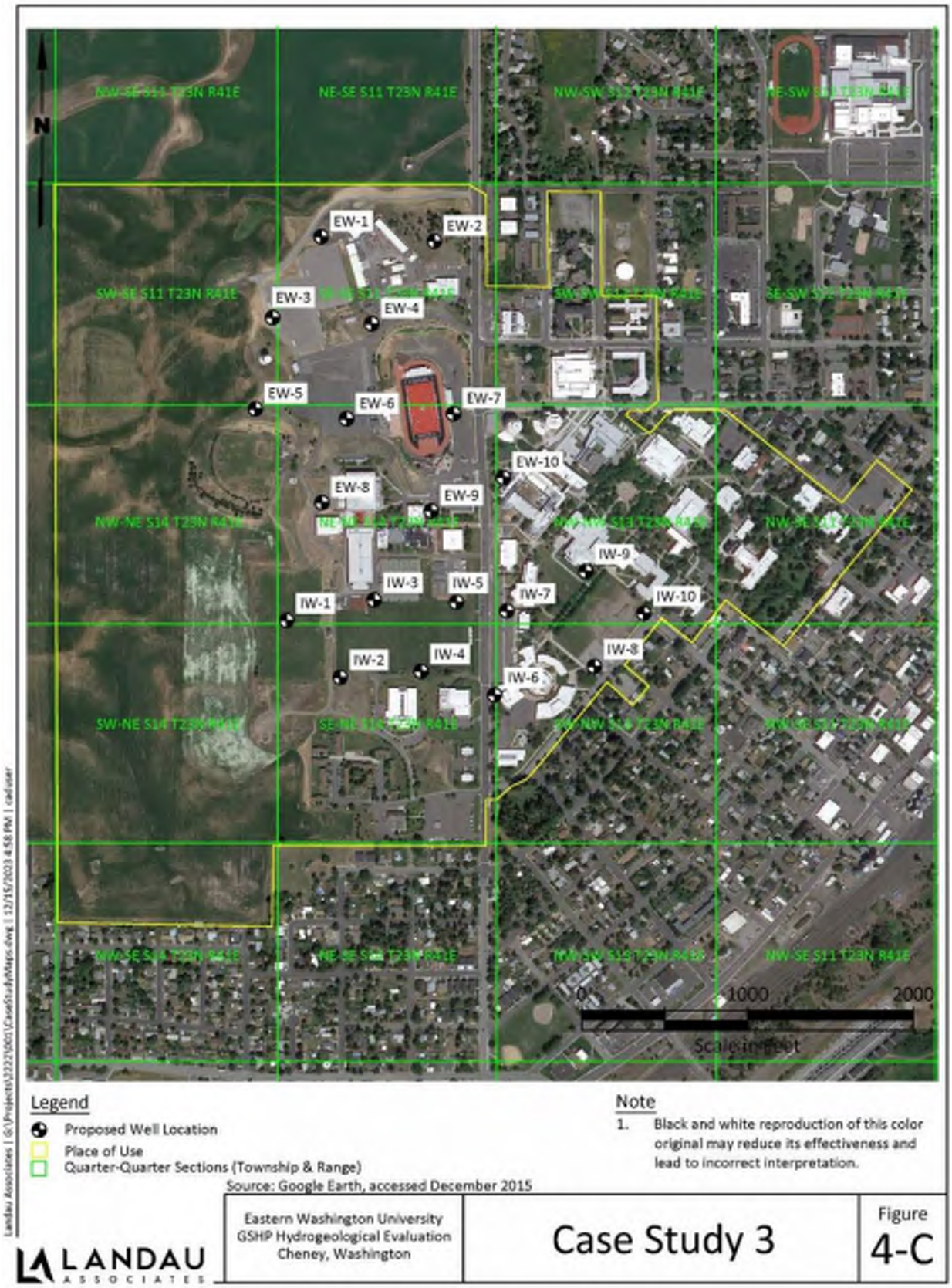
Scale in Feet
Legend
Proposed Well Location
Place of Use
Quarter-Quarter Sections (Township & Range)
Source: Google Earth, accessed December 2015
Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
LANDAU ASSOCIATES
Eastern Washington University
GSHP Hydrogeological Evaluation
Cheney, Washington
Case Study 2
Figure
4-B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EW-2
EW-3
EW-4
EW-5
EW-6
EW-7
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IW-1
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Scale in feet
Legend
Proposed Well Location
Place of Use
Quarter-Quarter Sections (Township & Range)
Source: Google Earth, accessed December 2015
Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
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GSHP Hydrogeological Evaluation
Cheney, Washington
Case Study 3
Figure
4-C

8.5 Timeline

The timeline on this project will be defined by funding alternatives of the project. Initiation of the first phase of the project, to include the initial extraction and injection well is tentatively projected to be initiated by 2026. Full completion of the project through phase 3 may extend up to 10 years.

8.6 Other Permits

The project will first require a water right permit for the GSHP. Typically, new water right applications are acted upon in the order which they are received by the Department of Ecology, who assigns their priority date. Certain new water right applications are granted priority processing dependent upon certain proposed project requirements and conditions. Under WAC 173-152-050(2), an application may be priority processed if Ecology determines that: "the proposed water use is non-consumptive and if approved would substantially enhance or protect the quality of the natural environment (WAC 173-152-050(2)(b)). Ecology also has Policy 2020 – Priority Processing of Heat Pump Applications". This policy also states that a withdrawal for heat exchange purposes may be afforded priority processing if the conditions under WAC 173-152-050(2)(b) are met.

Ecology Policy 1020 governs determination of consumptive vs. non-consumptive water use. The policy defines groundwater use as non-consumptive when "there is no diminishment of the source." As proposed with this project, the groundwater withdrawn for the GSHP will immediately be injected back to the source "in the same quantity and quality (excluding temperature change) at a point in close proximity to the withdrawal wells. As shown previously in this document, this proposed project meets these standards.

The EWU GSHP proposed open-loop heat exchange system meets the criteria set forth in WAC 173-152-050(2)(b) and as such, Ecology should afford it a priority processing status.

As discussed previously, the proposed water right application exceeds the 2,250-gpm limit, and as such will require submitting the SEPA checklist. The SEPA process will be conducted upon submittal of the water right application.

The project will also be required to register in the "Underground Injection Control Registration" administered by Ecology. Owners or operators of proposed — or existing — underground injection control wells must register their wells online using the SecureAccess Washington website. All injection wells must either receive a program rule authorization or a state discharge permit in order to operate. Ecology guidance states that:

Heat pump/air conditioning (HAC) systems return water back into the subsurface groundwater after it has been used to heat or cool a structure by means of an Underground Injection Control (UIC) well — or injection well.

HAC systems heat or cool buildings by:

- *Extracting heat energy from groundwater.*
- *Using groundwater as a heat sink (heat is absorbed) when cooling.*

Ecology's Underground Injection Control rule, Chapter 173-218 WAC, authorizes open-loop HAC system wells when a well is registered and the environmental protection requirements of the rule are met.

The following conditions are required to authorize HAC systems as an injection well:

- No chemicals are added to the HAC system.
- HAC system meets water right permitting requirements.
- Discharges from wells do not affect the water quality in nearby waters on the 303(d) polluted waters list.
- Discharges from wells do not affect the water in nearby waters with a Total Maximum Daily Load (water quality cleanup) plan.
- Discharges from wells do not affect groundwater quality by concentrating or redirecting existing contaminant plumes.
- Groundwater used in the HAC system must be discharged back to the source aquifer.

EWU will coordinate with Ecology upon water right permit authorization to assure all injection well requirements are met.

SECTION 9 HYDROGEOLOGICAL ANALYSIS

9.1 THROUGH 9.4 – For detailed hydrogeologic interpretations, see the Hydrogeologic Report's cited in this application. Groundwater use for the proposed project exists in a basalt aquifer at the site. The existing EWU municipal system currently withdraws groundwater from two wells in the Grande Ronde basalt, which will also be the target aquifer for this project.

The WNR Group reviewed the Washington Division of Geology and Earth Resources geologic map for northeastern Washington (1991). The geologic map (Figure 5) revealed that the new and proposed sites are underlain by Miocene Wanapum basalts (Mvw) which overlie the deeper Grand Ronde basalt. The Columbia River Basalt Group, of which the Wanapum and Grande Ronde are members, represent a vast outpouring of basaltic lava flows from vents in eastern Oregon and southwestern Washington and Idaho from about 17 to 6 million years ago (Johnson et al, 1998). The two units exposed in Spokane County (Wanapum and Grande Ronde), were erupted from vents in Idaho and flowed to the Pacific Ocean. The Wanapum and Grande Ronde primarily consist of a black to dark gray fine-grained (Grande Ronde) to coarse-grained (Wanapum), basalt (Johnson et al, 1998). These units typically host multiple aquifers in the interflows or where they are heavily fractured.

The stratigraphic sequence beneath EWU can be generalized as follows (in feet below ground surface):

- Zero to 50 feet of unconsolidated surficial deposits; sand and gravel and wind-deposited silts.
- 50 – 1,300 feet of CRBG,
    - 50 – 300 ft, Wanapum basalt unit and sedimentary interbeds
    - 300 – 1,000 ft, Grand Ronde basalt unit and sedimentary interbeds
- 1,300 feet and below, Pre-CRBG basement rock (Kahle 2011, Buchanan 2007, and well log interpretation).

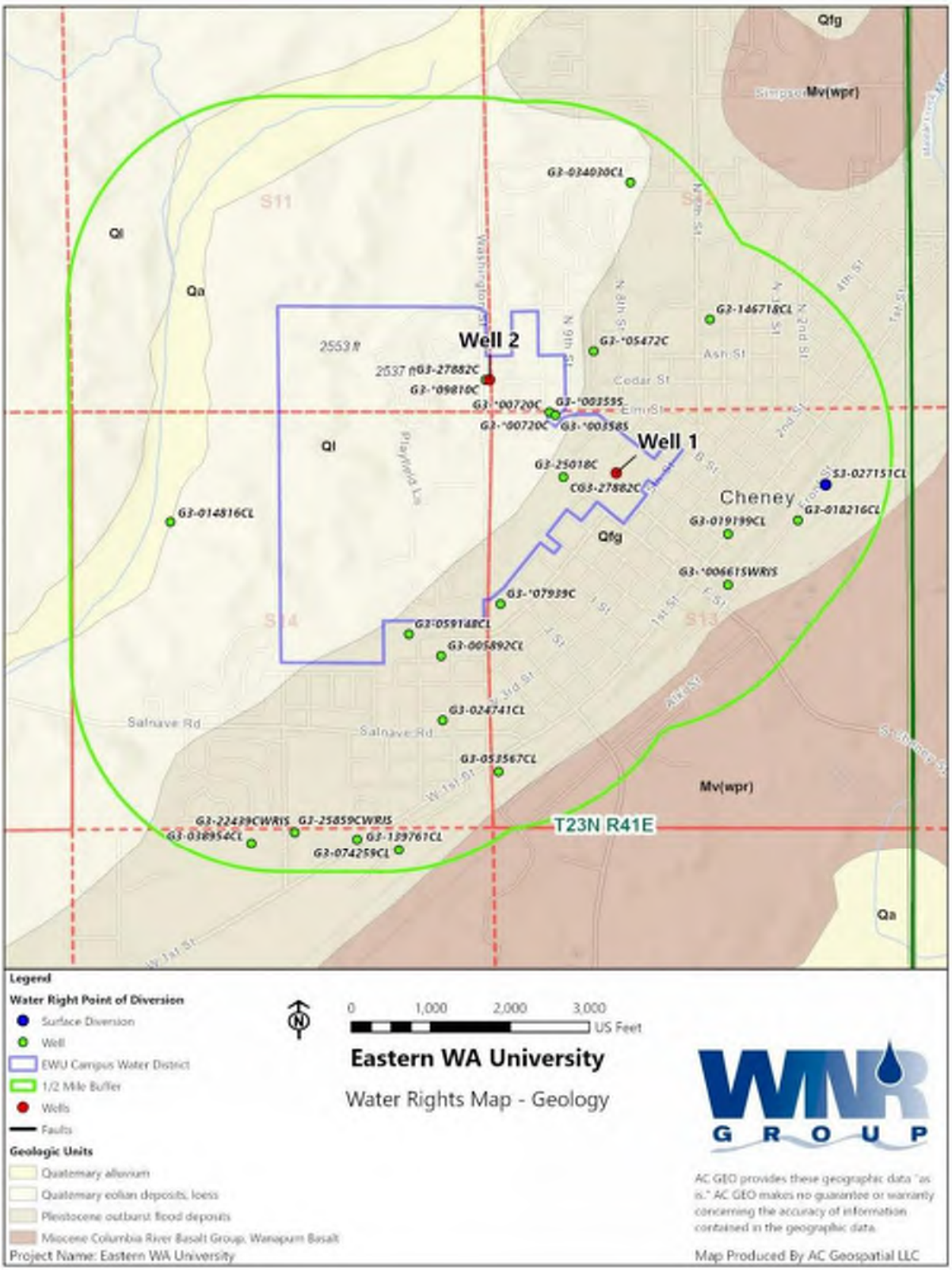

Figure 5: Geologic Map of the area around EWU

The following is presented from an Ecology Memo dated March 13, 2008 which described the hydrogeologic conditions for a proposed change to the City of Cheney water rights.

The area is underlain by the Columbia River Basalt Group, of which there are two major zones of public groundwater: the unconsolidated zone, and the basalt. The unconsolidated zone extends from the land surface down to the first solid basalt flow. It consists of unconsolidated and weakly consolidated sediments, chiefly sands, and gravels.

The basalt zone is part of a large groundwater reservoir occurring in a thick series of basalt flows. These flows primarily consist of the Saddle Mountain, Wanapum and Grand Ronde formations. Groundwater is found in a system of interconnected aquifers within the formations of the Columbia River Basalt Group.

The proposed project lies near the margin of the Columbia River Basalt Group. Steptoes consisting of pre-Cenozoic rocks lie to the north of Cheney. Miocene age Wanapum Basalt is exposed to the south and west of Cheney. The Wanapum basalt overlies the older Grand Ronde basalt, and a sedimentary interbed may be present at that contact.

Hydraulic heads indicative of the Grand Ronde aquifer do not necessarily appear at the base of that sedimentary interbed. Often, the hydraulic head does not appear until wells penetrate up to 200 feet into the Grand Ronde basalt. High hydraulic heads, typical of the overlying Wanapum basalt hosted are often closely connected to shallow groundwater.

Groundwater flow in the Cheney area is from SSW to SW with aquifers recharging along the margins of the basement outcrops which are exposed north of Cheney, or though the basin margins for the deeper basalt interflows. No evidence of significant connection to surface water is available.

Research compiled under this study and summarized in Landau (2023) temperature modeling report documents that the principal aquifer in the region is contained within the Columbia Plateau Basalt flows of the Wanapum and Grand Ronde formations. Regionally, these basalt flows erupted over a 10 million year period beginning approximately 16 million years ago. Each individual flow is typically 50 to 100 feet thick. Water migrates laterally through the high permeability interflow zones which are located at the intersection of the top of the underlying basalt flow and the bottom of the overlying basalt flow. The dense, basalt flow interiors typically display vertical hydraulic conductivity values that are orders of magnitude lower than the much higher conductivities of the interflow zones.

The CRBG aquifer system is a series of vertically stacked confined or semi-confined basalt aquifers with water concentrated interflow zones, i.e., the zone between two individual basalt flows. Interflow zones include a flow top, a flow bottom, and a sedimentary interbed if present. Interflow structures can include vesicular and/or brecciated flow tops, flow-bottom pillow complexes and/or brecciated zones, these features create permeability and storage (Kahle 2011). Water reaches the interflow zones and recharges the aquifers by downward percolation or by lateral groundwater inflow (Luzier and Burt 1974). Movement of groundwater vertically along joints in the basalt is estimated to be several orders of magnitude lower than the horizontal range of

movement. City of Cheney wells 1, 2, 3, 6 and 7 are developing in the CRBG aquifer, as are EWU wells 1 and 2R (Parametrix 2019).

The CRBG consists of the Saddle Mountain Basalt unit, Wanapum Basalt unit, and the Grande Ronde Basalt, and their sedimentary interbeds. The Wanapum and the Grande Ronde Basalts are present in the Cheney area, the Wanapum Basalt underlies the Grande Ronde Basalt. The Grande Ronde is the deepest and most-voluminous unit and the most productive basalt aquifer. The Grande Ronde Basalt aquifer is mostly confined and is recharged by lateral groundwater inflow. The Wanapum Basalt aquifer is partially recharged by precipitation and infiltration and is the source of water for many springs and lakes in the Cheney area (Buchanan 2007).
Well logs in and around the EWU campus record a substantial sedimentary interbed at depths of 500-600 feet bgs and a thickness of 75-100 feet. Previous hydrogeologic studies have interpreted this to be the Latah formation, which is broadly understood to have been deposited between the Wanapum Basalt and the Grande Ronde Basalt (Kahle 2011 and City of Cheney wellhead protection plan). However, recent geochemical analysis of samples collected from City of Cheney Well 5 identified the contact between the Wanapum and Grande Ronde Basalts at about elevation 2,200' (200-300 ft bgs) (Buchanan 2007 and GeoEngineers, 2015). This correlates to an approximate Wanapum Basalt thickness of 220 and 280 in the EWU campus area. Locally the Latah formation has been interpreted as a confining layer that restricts groundwater flow based on higher heads in the Wanapum Basalt respective to the Grande Ronde Basalt (Buchanan 2007).

A generalized geologic cross-section beneath the site is presented in Figure 6. The target aquifer for this project will be the lower Grand Ronde basalt Formation.

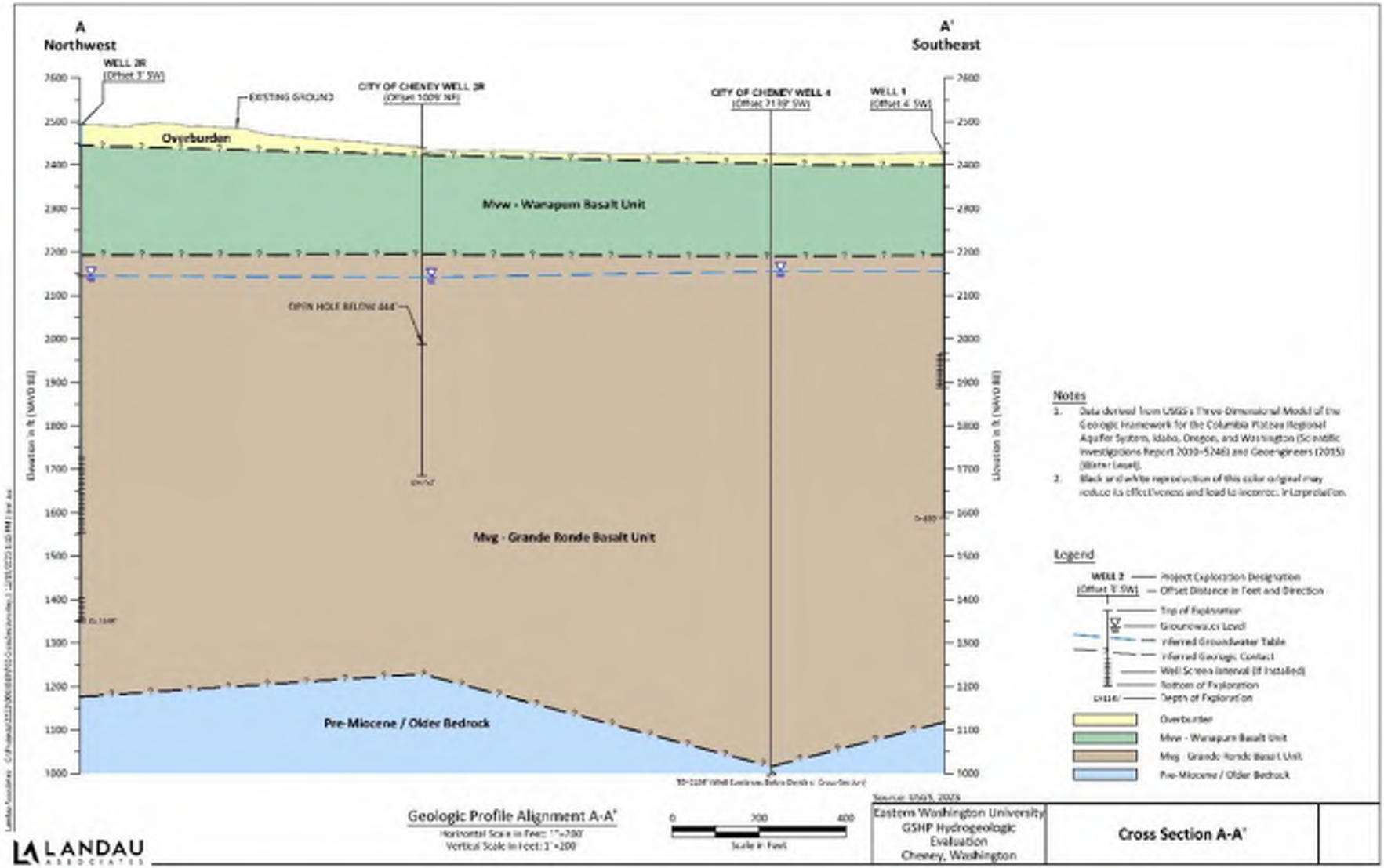

Figure 6: Generalized Geologic Cross Section in the area of EWU

Site Groundwater Conditions – A detailed review of well logs and available hydrogeologic data and reports were conducted for this study. At the Existing subject site, the groundwater within the Grand Ronde member was determined to have the following aquifer characteristics. The Columbia River Basalt Group is a regional aquifer system, and the Grand Ronde Aquifer extends across the basin. The aquifer hydraulic parameters may vary dependent upon the specific geologic conditions at a specific location within the basin. The following are the most representative parameters the project evaluation could develop.

Aquifer Hydraulic Parameters

Well testing and hydrogeologic reports were reviewed to estimate hydraulic parameters for the Grande Ronde aquifer in the vicinity of the EWU campus.

Table 3. Hydraulic Parameters

Model Parameter	**Value**
Aquifer Transmissivity (ft^2/day)	9,900
Aquifer Storativity (unitless)	0.0002
Static Water Level (ft bgs)	300 – 400
Hydraulic Gradient	0.01

Aquifer Transmissivity

Aquifer transmissivity (T) describes the ability of the aquifer to transmit groundwater throughout its entire saturated thickness. Transmissivity is the product of hydraulic conductivity (i.e., the capacity of the aquifer material to transmit water) and aquifer thickness:

$$T = Kb$$

Where K is transmissivity and b is aquifer thickness. Transmissivity can be determined via pumping tests, analysis of aquifer material, or calculations based on laboratory tests. Of these methods, transmissivity values established during pumping tests are the most accurate and should reflect the true hydraulic conditions within an aquifer. Due to the heterogeneity of hydraulic conductivity in the Grande Ronde Basalt aquifer and variability in saturated aquifer thickness, pumping test data from onsite EWU Well 2R is anticipated to be most representative of local conditions (versus pumping test data from wells at greater distances from campus).
In 2015, pumping tests were completed on a new water supply well (Well 2R) installed on EWU campus. Analysis of the constant-rate pumping test data estimated an aquifer transmissivity range of 9,900 ft^2/day to 14,000 ft^2/day, using the Cooper-Jacob graphical method and the Theis recovery method, respectively (GeoEngineers 2015). For conservatism, the lower transmissivity value was selected for modeling purposes.

The pumping well screen was open to 225-ft of the aquifer, and approximately 100-ft of that interval was water-bearing interflow zones, therefore for modeling purposes an aquifer thickness of 100-ft was used.

Aquifer Storativity

Aquifer storativity (S) is a measure of an aquifer's ability to store and release water and is defined as the volume of water that a unit will absorb or release from storage per unit surface area per unit change in head. Storativity is also known as the storage coefficient and is typically expressed in units of cubic feet per cubic feet, a dimensionless quantity. Storativity cannot be estimated from a pumping test without observation well data (testing of Well 2R did not include observation wells), therefore, a representative value was selected from available literature. The estimated median storage coefficient for the Grande Ronde unit of the CRBG is 0.0002 (Kahle, 2011).

Static Water Level and Hydraulic Gradient

Groundwater levels in the Grande Ronde basalt unit are around between 2,100 and 2,200 ft elevation in the Cheney area (Whiteman 1986), i.e., between 300 and 400 ft bgs in the EWU campus area. The groundwater flow direction is interpreted to be to the south-southeast with a gradient of 0.01.

During the production well evaluation at Well 2R, completed in 2015, the static groundwater level in the Grande Ronde Basalt aquifer unit was approximately 350 feet bgs (GeoEngineers 2015). The groundwater level was monitored for a 7-day period under non-pumping conditions. A cyclic fluctuation of 1½ feet was recorded and interpreted to be interference associated with the pumping cycle at Well 1. On a larger timescale, existing historical data indicate that groundwater mining is occurring in the aquifer system beneath the City of Cheney and modeling efforts predict that the rate of water level decline will increase as pumping demands grow with anticipated increases in City population (Buchanan, 2007).

Groundwater levels in the basalt units generally mimic the dip of the basalt, because most groundwater occurs and moves in the interflow zones (Kahle 2011). Groundwater flow in the CRBG near the Cheney area is generally to the south and southwest, towards the center of the Columbia Basin. However, flow in the Grande Ronde Basalt aquifer in the area of the EWU campus appears to be to the south-southeast due to the presence of a groundwater trough to the southeast of Cheney. Grande Ronde groundwater elevation contours are presented in Figure 4 (Whiteman 1986). Groundwater flow direction should be confirmed in the next phase of project design; it is an important design variable for sustaining groundwater temperature targets at the source well.

The altitude of the Grande Ronde Basalt Member (from the USGS WRI Report 87-4238, Sheet Three) for a well in the SE¼ Sec. 11, SW¼ Sec. 12, NW¼ Section 13, or NE¼ of Sec. 14, T. 23 N. R. 41 E.W.M. is approximately 2175'. With a land surface of ~2450', this puts the top of the Grande Ronde at approximately 275' below land surface. The casing call for a well at this site would be estimated at 475' below land surface for a Grande Ronde wells at this location.

To properly construct a well in the Grande Ronde Aquifer, the driller will need to case and seal the well as mentioned above to allow for production from only the Grande Ronde Aquifer. The annular space would need to be a minimum of 4-inches greater than the permanent casing. After the casing is sealed in place, the well may be completed by drilling out of the casing until sufficient

water is obtained. Sealing shall be placed from the bottom of the well to the top until undiluted sealing material returns to the surface.

Impairment Considerations

Impairment is an adverse impact on the physical availability of water for a beneficial use that is entitled to protection. In order to determine potential impairment, the following Theis non-equilibrium well equation analysis was completed.

In order to determine theoretical drawdown in wells at a given distance from the proposed wells, the Theis non-equilibrium equation (1935), modified by Cooper and Jacob (1946) was used as outlined in Driscoll (1986). The equation allows for the calculation of drawdown at any point away from a well pumping at a constant rate. The equation is presented as:

$$\mathbf{s = [264Q/T] * [\log(0.3Tt/r^2 S)]}$$

Where:

s = drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate;

Q = pumping rate in gpm;

T = coefficient of transmissivity of aquifer, in gpd/ft

t = time since pumping started, in days;

r = distance, in feet, from the center of a pumped well to a point where the drawdown is measured;

S = coefficient of storage (dimensionless)

A spreadsheet was developed for the equation and is attached to this memo. The equation was run for a pumping rate for each of the proposed phases (600, 3,600 and 12,000 gpm), with time of pumping at 1, 7, 30, 180, and 365 days, at a distance to observation well of ¼, ½, and 1 mile from a proposed theoretical well. The Thesis non-equilibrium equation generally revealed that a pumping rate of 600 gpm (the maximum amount proposed for each individual extraction well in the system) for 365 days drawdown (decline in hydraulic head) in an observation would be 9.34 feet (1/4-mile), 8.05 feet (1/2-mile), and 6.76 feet (1-mile). At a pumping rate of 3,600 gpm for 365 days, drawdown in an observation would be 56.04 feet (1/4-mile), 48.31 feet (1/2-mile), and 40.59 feet (1-mile).

As the proposed project is non-consumptive, the extracted groundwater will be immediately returned to the aquifer through an injection well within 600 feet of its extraction well. This theoretically creates the same mounding values as that calculated in the drawdown analysis, thus offsetting any drawdown or decline of the hydrostatic head. Figure 7 presents a schematic showing the theoretical effects on the potentiometric head gradient created during an open loop heat exchange system.

Therefore, it is assumed that no impairment to wells in the area may occur. Only the City of Cheney wells located within the EWU service area would be within the radius of influence.

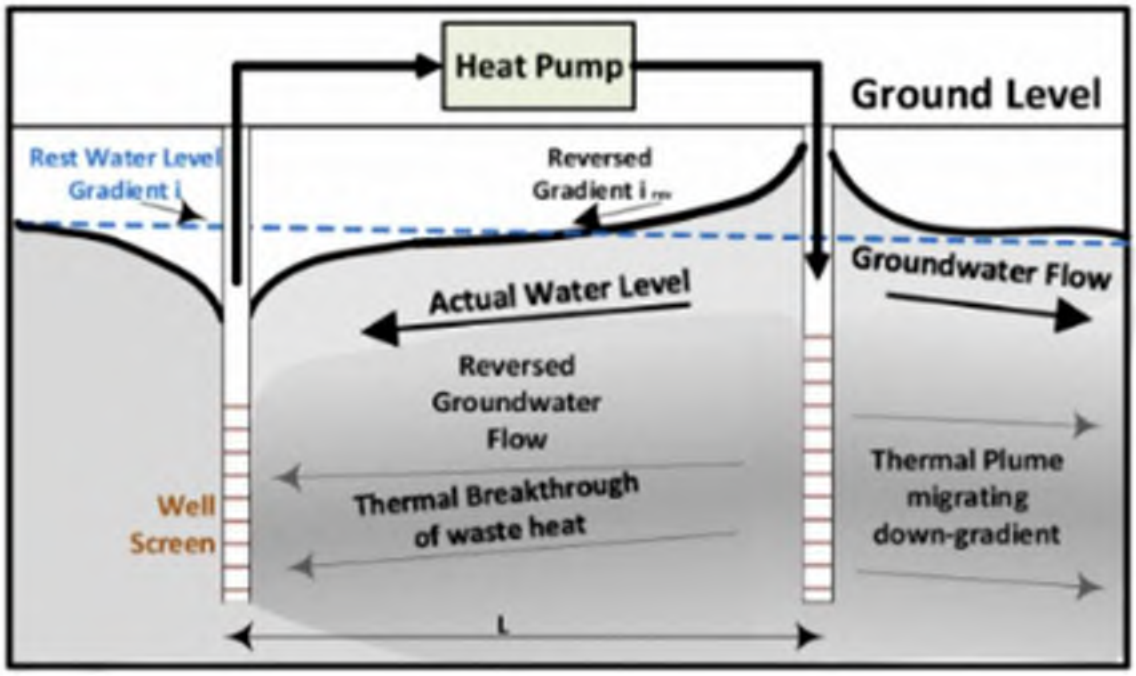

Figure 7: Schematic showing the theoretical drawdown and mounding of an open loop heat exchange project.

SECTION 10: Environmental Assessment

10.1 – Nearest surface water body: An unnamed intermittent creek which is tributary to Browns Lake is located approximately ½-mile north of the facility. The nearest surface water feature is Ames Lake and is located approximately ¾-mile southwest from the facility. There is no evidence of any significant connection to surface water to the basalt aquifers in the area of the site (Ecology, 2008).

10.2 – The project site is located on the Columbia Basalt Plateau and contains some intermittent water bodies perched on top of the basalts. No known salmonids are located in the immediate area of the facility.

SECTION 11: Driving Directions

11.1 The site is located at: Eastern Washington University campus in Cheney, WA 99004
The site is located approximately 17-miles southwest of Spokane Washington in Cheney, WA in Spokane County. To get to the site, drive east on I-90 from Spokane approximately 10 miles to Exit 270-Highway 904, Cheney. Continue approximately 4 miles south on Highway 904 until entering the City of Cheney. Upon entering Cheney, turn right (west) on Betz Road, and after a mile it will bend to the left (heading south) and becomes Washington Street. Drive approximately one mile to the site location.

Section 12: Maps and Other Documentation

12.1 – Various Maps are included in this document

Citations:

Buchanan, J.P., 2007, Modeling future groundwater withdrawals with an emphasis on potential well interference and groundwater mining for the area surrounding the City of Cheney, Spokane County, Washington, prepared for Department of Public Works, City of Cheney, Washington and Esvelt Environmental Engineering, June.

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Drost, Whiteman, and Gonthier Geologic framework of the Columbia Plateau Aquifer System, Washington, Oregon, and Idaho, Water-Resources Investigations Report 87-4238

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GeoEngineers, July 16, 2015, Production Well Evaluation, Eastern Washington University Water System Improvements, Cheney, WA. Report prepared for TD&H Engineering, 117 pp.

Kahle, S.C., Morgan, D.S., Welch, W.B., Ely, D.M., Hinkle, S.R., Vaccaro, J.J., and Orzol, L.L., 2011, Hydrogeologic framework and hydrogeologic budget components of the Columbia Plateau Regional Aquifer System, Washington, Oregon, and Idaho: U.S. Geological Survey Scientific Investigations Report 2011-5124, 66 p.

Landau, 2023. Draft Eastern Washington University Ground Source Heat Pump Hydrogeologic and Thermal Modeling Assessment. December. With WNR.

Luzier, J.E., and Burt, R.J., 1974, Hydrology of basalt aquifers and depletion of ground water in east-central Washington: Washington State Department of Ecology, Water-Supply Bulletin 33, 53 p.

MSI, 2023. Draft Report: EWU Campus Hydro-Geological Assessment Open-Loop Ground-Source Heat Pump Feasibility Study. Eastern Washington University. Cheney, WA. December 22. With Landau Associates, Inc. and WNR.

Parametrix, 2019, City of Cheney Water System Plan Well Head Protection Plan, 2018 Update, 98 pp.

Tanaka, H.H., 1975, Seismic profile lines in the Spokane are [abs.]: U.S. Geological Survey Professional Paper 975, 115 p.

Washington State Department of Natural Resources-Stoffel and others, 1991: Geologic Map of Washington – Northeast Quadrant scale 1:250,000, Washington Division of Geology and Earth Resources, Geologic Map GM-39, 3 sheets.

Washington State Department of Ecology, March 13, 2008, Memorandum prepared by Guy Gregory for Hydrogeologic Analysis, Applications for Change to Groundwater Certificates Nos. 341-D, 342-D, 1418-A, 3969-A, 5967-A, G3-22439C and G3-25859C, 4 pp.

Washington State Department of Ecology, November 2023: Internet search of groundwater well log database, http://www.ecy.wa.gov.

Washington State Department of Ecology, November 2023: Internet search of water rights database (WRTS), http://www.ecy.wa.gov.

Whiteman, K.J., 1986, Ground-water levels in three basalt hydrologic units underlying the Columbia Plateau, Washington and Oregon, spring 1984: U.S. Geological Survey Water-Resources Investigations Report 86-4046, 4 sheets.

Theoritical Drawdown of A Well at a Given Distance and a Constant Pumping Rate Using Theis Nonequilibrium Well Equation (Driscoll, F.G., 1986: Groundwater and Wells)

Equation: $s = [264Q/T]*[\log(0.3Tt/r^2S)]$

Where: s = drawdown, in feet, at any point in the vicinity of a well discharging at a constant rate

Q = pumping rate in gpm

b=100 ft — T = coefficient of transmissivity of aquifer, in gpd/ft

K=99 ft/day — t = time since pumping started, in days

T=9900 ft^2/day — r = distance, in feet, from the center of a pumped well to a point where the drawdown is measured

T=74056.95 gpd/ft — S = coefficient of storage (dimensionless)

K and T data derived from GeoEngineers 2015 Report — T= 74056.95

Drawdown of Well at a given distance (ft)	Constant	Discharge (gpm)	Transmissivity (gpd/ft)	Time since pumping started (days)	Distance to Well (feet)	Storage Coefficient	264Q/T	$(0.3Tt/r^2S)$	$\log(0.3Tt/r^2S)$
s	264	Q	T	t	r	S			
3.86	264	600	74057	1	1320	0.0002	2.138893	63.75430441	1.804509512
5.67	264	600	74057	7	1320	0.0002	2.138893	446.2801309	2.649607552
7.02	264	600	74057	30	1320	0.0002	2.138893	1912.629132	3.281630766
8.68	264	600	74057	180	1320	0.0002	2.138893	11475.77479	4.059782017
9.34	264	600	74057	365	1320	0.0002	2.138893	23270.32111	4.366802376
2.57	264	600	74057	1	2640	0.0002	2.138893	15.9385761	1.20244952
4.38	264	600	74057	7	2640	0.0002	2.138893	111.5700327	2.04754756
5.73	264	600	74057	30	2640	0.0002	2.138893	478.1572831	2.679570775
7.40	264	600	74057	180	2640	0.0002	2.138893	2868.943698	3.457722026
8.05	264	600	74057	365	2640	0.0002	2.138893	5817.580277	3.764742385
1.28	264	600	74057	1	5280	0.0002	2.138893	3.984644025	0.600389529
3.09	264	600	74057	7	5280	0.0002	2.138893	27.89250818	1.445487569
4.44	264	600	74057	30	5280	0.0002	2.138893	119.5393208	2.077510784
6.11	264	600	74057	180	5280	0.0002	2.138893	717.2359246	2.855662034
6.76	264	600	74057	365	5280	0.0002	2.138893	1454.395069	3.162682394
23.16	264	3600	74057	1	1320	0.0002	12.83336	63.75430441	1.804509512
34.00	264	3600	74057	7	1320	0.0002	12.83336	446.2801309	2.649607552
42.11	264	3600	74057	30	1320	0.0002	12.83336	1912.629132	3.281630766
52.10	264	3600	74057	180	1320	0.0002	12.83336	11475.77479	4.059782017
56.04	264	3600	74057	365	1320	0.0002	12.83336	23270.32111	4.366802376
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26.28	264	3600	74057	7	2640	0.0002	12.83336	111.5700327	2.04754756
34.39	264	3600	74057	30	2640	0.0002	12.83336	478.1572831	2.679570775
44.37	264	3600	74057	180	2640	0.0002	12.83336	2868.943698	3.457722026
48.31	264	3600	74057	365	2640	0.0002	12.83336	5817.580277	3.764742385
7.71	264	3600	74057	1	5280	0.0002	12.83336	3.984644025	0.600389529
18.55	264	3600	74057	7	5280	0.0002	12.83336	27.89250818	1.445487569
26.66	264	3600	74057	30	5280	0.0002	12.83336	119.5393208	2.077510784
36.65	264	3600	74057	180	5280	0.0002	12.83336	717.2359246	2.855662034
40.59	264	3600	74057	365	5280	0.0002	12.83336	1454.395069	3.162682394
77.19	264	12000	74057	1	1320	0.0002	42.77786	63.75430441	1.804509512
113.34	264	12000	74057	7	1320	0.0002	42.77786	446.2801309	2.649607552
140.38	264	12000	74057	30	1320	0.0002	42.77786	1912.629132	3.281630766
173.67	264	12000	74057	180	1320	0.0002	42.77786	11475.77479	4.059782017
186.80	264	12000	74057	365	1320	0.0002	42.77786	23270.32111	4.366802376
51.44	264	12000	74057	1	2640	0.0002	42.77786	15.9385761	1.20244952
87.59	264	12000	74057	7	2640	0.0002	42.77786	111.5700327	2.04754756
114.63	264	12000	74057	30	2640	0.0002	42.77786	478.1572831	2.679570775
147.91	264	12000	74057	180	2640	0.0002	42.77786	2868.943698	3.457722026
161.05	264	12000	74057	365	2640	0.0002	42.77786	5817.580277	3.764742385
25.68	264	12000	74057	1	5280	0.0002	42.77786	3.984644025	0.600389529
61.83	264	12000	74057	7	5280	0.0002	42.77786	27.89250818	1.445487569
88.87	264	12000	74057	30	5280	0.0002	42.77786	119.5393208	2.077510784
122.16	264	12000	74057	180	5280	0.0002	42.77786	717.2359246	2.855662034
135.29	264	12000	74057	365	5280	0.0002	42.77786	1454.395069	3.162682394

SECTION 2

APPENDICES

2.4 EWU HYDRO-GEOLOGICAL ASSESSMENT

EWU Campus Hydro-Geological Assessment

Open-Loop Ground-Source Heat Pump Feasibility Study

Eastern Washington University

Cheney, WA

January 08, 2024

FINAL REPORT

LANDAU ASSOCIATES

WMR GROUP

MSI ENGINEERS

Background

PURPOSE

This report provides the technical, economic, environmental and regulatory assessment of utilizing the existing Grande Ronde aquifer, present deep below the Eastern Washington University campus in Cheney, WA, for the feasibility and economic viability of converting the university's district heating and cooling system to Ground-Source based Heat Pump systems (GSHPs).

GOAL

The primary goal of this report is to provide EWU with information on one possible pathway to reducing fossil fuel use at the existing campus central heating (and cooling) plant, with the ultimate goal of achieving an Energy Efficient, Zero-Carbon campus.

"HYDRO-GEOLOGICAL" vs "GEOTHERMAL" ASSESSMENT

What's the difference?

The primary distinction between the term "hyrdo-geological" and "geothermal" is mostly semantics, in that, even though more commonly used in these sorts of studies, the term "geothermal" suggests fairly warm, if not very hot, ground water is present and available. The term "thermal", suggests abundant heat from the earth for direct heating of buildings (or electric generation) is possible. This, however, is not normally the case, except in certain special and isolated areas, such as Yellowstone Park, areas of California and some other select areas in the West, as well as certain parts of Iceland, Indonesia and the Philippines. Most of these readily available geothermal sources have already been identified and utilized to produce fossil fuel free heating or electrical generation, or both. In the case of EWU, there is really no geothermal, meaning very hot, ground water present or available, which, if it were, would make the transition away from traditional fossil fuel based heating, much more economically viable.

So, for the purposes of this report, the more appropriate term that will be used is "hydro-geological" assessment. As such it will be looking at the availability of, and characteristics of, the existing aquifer (hydro) ground (geological) water that is present in the earth beneath the EWU campus. The feasibility of using this ground water for the purpose of heating and/or cooling the EWU campus buildings, as this aquifer acts as a heat-source or heat-sink for efficient operation of ground-source heat pump systems, will be analyzed in detail.

REPORT INDEX

This document was prepared by, or under the direct supervision of, the technical professional noted below:

Report Prepared by:

J. Brad Snow, PE – Senior Mechanical Engineer,
MSI Engineers

Report Reviewed by:

Aaron Donnely, PE – Principal,
MSI Engineer

Background

WHAT IS A GROUND-SOURCE HEAT PUMP SYSTEM?

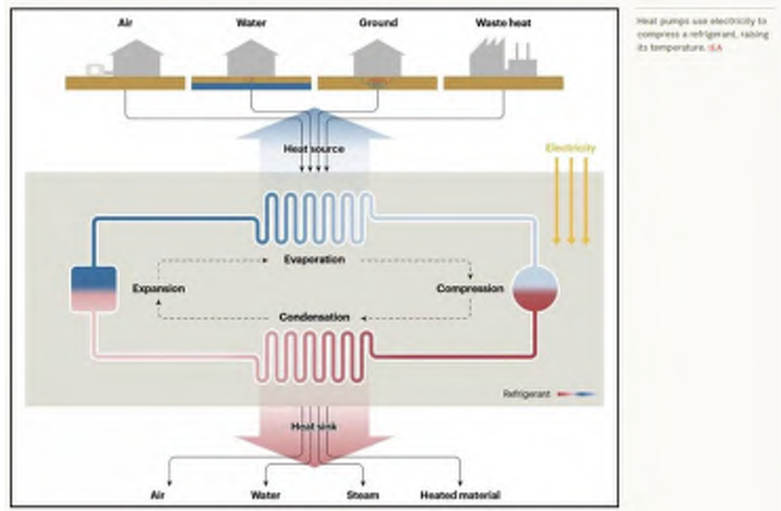
A ground-source heat pump system is an electric energy based heating and cooling system, rather than a fossil fuel based system, that uses the earth as a source of stable “energy” for extracting or rejecting heat to (i.e. heat sink or heat source), for the purpose of heating or cooling buildings. Although there are other possible heat pump based systems that utilize the ambient outdoor air, rather than the earth, as the heat source or heat sink, using the earth is considered more efficient, since the thermal mass is much more dense than air, and the typical 50 to 60 deg. F ground temperatures are also more stable than the air, which can vary well over 100 deg. F throughout the seasons.

WHY STUDY A GROUND-SOURCE HEAT PUMP SYSTEM?

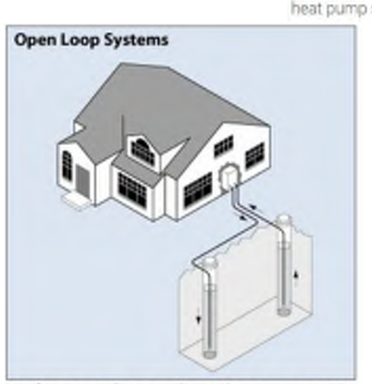
Because ground-source heat pump systems are powered by electricity, and are considered highly efficient, more so than alternative air-source type heat pumps, they can greatly reduce or eliminate completely, the combustion of fossil fuels on site for the purpose of heating buildings. This, therefore, allows for a potential significant reduction in the emission of greenhouse gases (GHGs) at the campus level.

WHAT IS THE DIFFERENCE BETWEEN OPEN-LOOP AND CLOSED-LOOP WELLS?

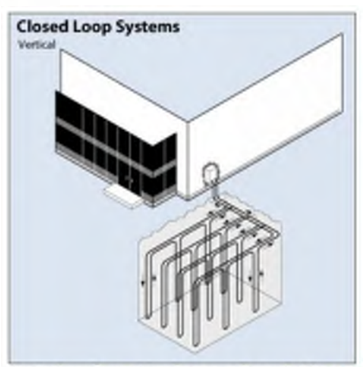
Closed-loop heat pump systems circulate water through buried piping to exchange heat with the ground, whereas open-loop type systems pump water directly in and out of the earth, from an available aquifer source. The nature of heat transfer requires closed-loop type systems to utilize a significant number of expensive vertical wells, or large open fields for shallow horizontal loops, whereas open-loop type systems, which use water directly, instead of relying on heat transfer to the earth, only required a few wells. This allows for an economy of both scale and space constraints, especially in the context of a college campus, where open space for multiple wells or heat transfer fields is extremely limited.



Horizontal configuration of a ground-coupled heat pump system



Configuration of a groundwater heat pump system



Vertical configuration of a ground-coupled heat pump system

Process and Findings

ASSESSMENT PROCESS

- The groundwater aquifer below the EWU campus, was investigated and characterized by the consulting firms of Landau Associates and WNR Group, Inc, with hydrogeologists having expertise and experience in the nature of Eastern Washington aquifers and water rights.
- Existing literature, available aquifer testing data, and well logs from the Cheney area were used to develop estimates of the aquifer properties, potential well yield, and preliminary well design.
- Based on three theoretical well water use scenarios for the campus GSHP systems, the viability of water extraction and reinjection was estimated, along with possible thermal degradation/migration impacts, in order to establish reasonable well sizes, depths, spacing and pumping requirements.
- The complete and detailed Hydro-Geological Assessment can be found in the Appendix of this report:
    - *Eastern Washington University Ground Source Heat Pump Evaluation, by Landau Associates and WNR Group, dated January 08, 2024.*
- Using the open-loop well design requirements from the above assessment, cost estimates for the three campus system scenarios were developed, in order to help quantify the environmental impact and economic viability of these systems.
- The various well costs were then coupled with cost estimates for installing and operating ground-source heat pump systems in the three campus scenarios that were analyzed. These were then compared against traditional district heating (fossil fuel based) and cooling systems, from the existing Rozell Energy Plant, in order to determine potential reductions greenhouse gas emissions and energy cost savings for GSHP systems.

ASSESSMENT SUMMARY, FINDINGS and CHALLENGES

- The Grande Rhonde aquifer has sufficient capacity to support open-loop type ground source heat pumps for the purpose of heating and cooling the EWU campus.
- The campus footprint is large enough to accommodate the development of enough extraction and reinjection wells, to transition the entire campus to GSHP based systems.
- Carbon savings could be significant compared to the existing fossil fuel-based district steam heating systems.
- Energy savings for GSHP systems, compared to the existing central energy plant, are tempered by the added, parasitic pumping energy needed for the open-loop well operations.
- Well costs, interconnecting infrastructure costs, and building HVAC retrofit costs required to utilize GSHP systems, will be considerable.
- Transitioning away from a single centralized energy production energy plant to decentralized, multiple, micro-district plants, will have added management, operational and maintenance costs, that are not included in this study.
- Prior to the design and installation of such GSHP systems as discussed in this report, other alternative HVAC systems, such as air-source heat pumps (which have been discussed in other studies) may provide more economical solutions for reducing carbon emissions on the EWU campus, since the costs to develop expensive well fields can be avoided. It is therefore recommended that more detailed analysis of potential GHG reducing HVAC systems and technologies be further evaluated, which compare life cycle costs vs. energy and carbon savings, prior to a final solution being selected.

Next Steps and Other Considerations

RECOMMENDED NEXT STEPS

- Review and discuss findings presented in this evaluation.
- Review possible alternative approaches or opportunities for carbon reductions on campus.
- Determine if the findings are compelling enough to justify additional, more detailed study, economics evaluation and likely environmental benefits and trade-offs.
- Develop a roadmap/playbook for implementing carbon reduction opportunities, with timelines and cost/budget estimates.
- Identify funding opportunities, including State capital monies, grants, incentives, and rebates.
- Develop a test well in order to validate preliminary hydro-geology expectations and to help better understand costs and challenges for future scalability.
- Develop alternative energy models for the planned Martin-Williamson Complex upgrade, to better understand the cost-benefits of alternative HVAC systems, such as air-source heat pumps, hybrid systems, etc.

GENERAL COMMENTARY ON GROUND SOURCE HEAT PUMP (GSHP) SYSTEMS

- The application of ground source heat pump (GSHP) systems for building HVAC applications, is attractive from both an energy efficiency and carbon reduction standpoint. Because it can eliminate the use of fossil fuel for building heating, it can achieve the ideal goal of zero-carbon operation.
- Although the costs to drill and develop the required water well networks are significant, the considerable social and environment benefits to such a system, in addition to the current regulatory requirements, make such GSHP systems attractive for further consideration, as a serious and viable option for a significant campus Greenhouse Gas (GHG) reduction strategy.

OTHER POSSIBLE CARBON REDUCTION STRATEGIES TO STUDY

- Air-Source Heat Pumps: Similar efficiencies to GSHPs most of the time. May requires supplemental heat in extreme weather. Possibly a more economical option.
- Hybrid Systems: Consider adapting/leveraging existing Central Energy Steam and Chilled water systems with building heat pumps, to optimize energy efficiency and cover the extreme weather periods, without oversizing the heat pumps.
- Green Fuels – Bio-diesel, Renewable Natural Gas & Green Hydrogen: Although so-called “Green Fuels” are not commercially viable for EWU, it may be worthy to consider advances in the development of these fuels for future applications.
- Existing Chiller Plant Optimization: Continue ongoing efforts to optimize the performance of the existing central chilled water plant, due to the fact that it is already carbon zero for campus building cooling duty, and is similar in efficiency to the proposed GSHP systems for air conditioning purposes, but without the added costs of developing the expensive well network. Consider the installation of a Thermal Energy Storage Tank, for added efficiency, and to take advantage of likely future time-of-day electric rates.
- Future Zero-Carbon Steam Production Technologies: High Temperature Heat Pumps, tied into ground-source wells as discussed in this report, combined with new generation Steam Compressors, may make it possible in the future to generate high pressure steam, using zero-carbon electric heat pumps, instead of traditional fossil fuels. Europe is leading the way in these technologies, for heavy industries that are looking for carbon-free steam for process uses. Such technologies may provide a possible bridge, as the campus transitions away from district steam heating to distributed heat pumps, but at the present time, these technologies are not widely used or available in the U.S.

GSHP System Case Studies

CASE STUDY SELECTION CRITERIA

Three (3) discrete GSHP system options were chosen for this feasibility study. These varied from one facility, to a group of several buildings, to the entire campus. The several scenarios were selected based on the idea of scaling-up the assessment from an individual building and system, as a starting point to determine viability, to a somewhat larger system, comprising a network of several nearby buildings, to the theoretical eventual conversion of the entire campus to a GSHP system.

Proposed well locations were selected to allow for the general NW to SE ground water flow direction in the Grande Rhonde aquifer, so that the reinjection wells were located “down stream” from the extraction wells, so as to minimize thermal break-through (short circuiting) over time.

CASE STUDY – 1: MARTIN-WILLIAMSON HALL GSHP SYSTEM

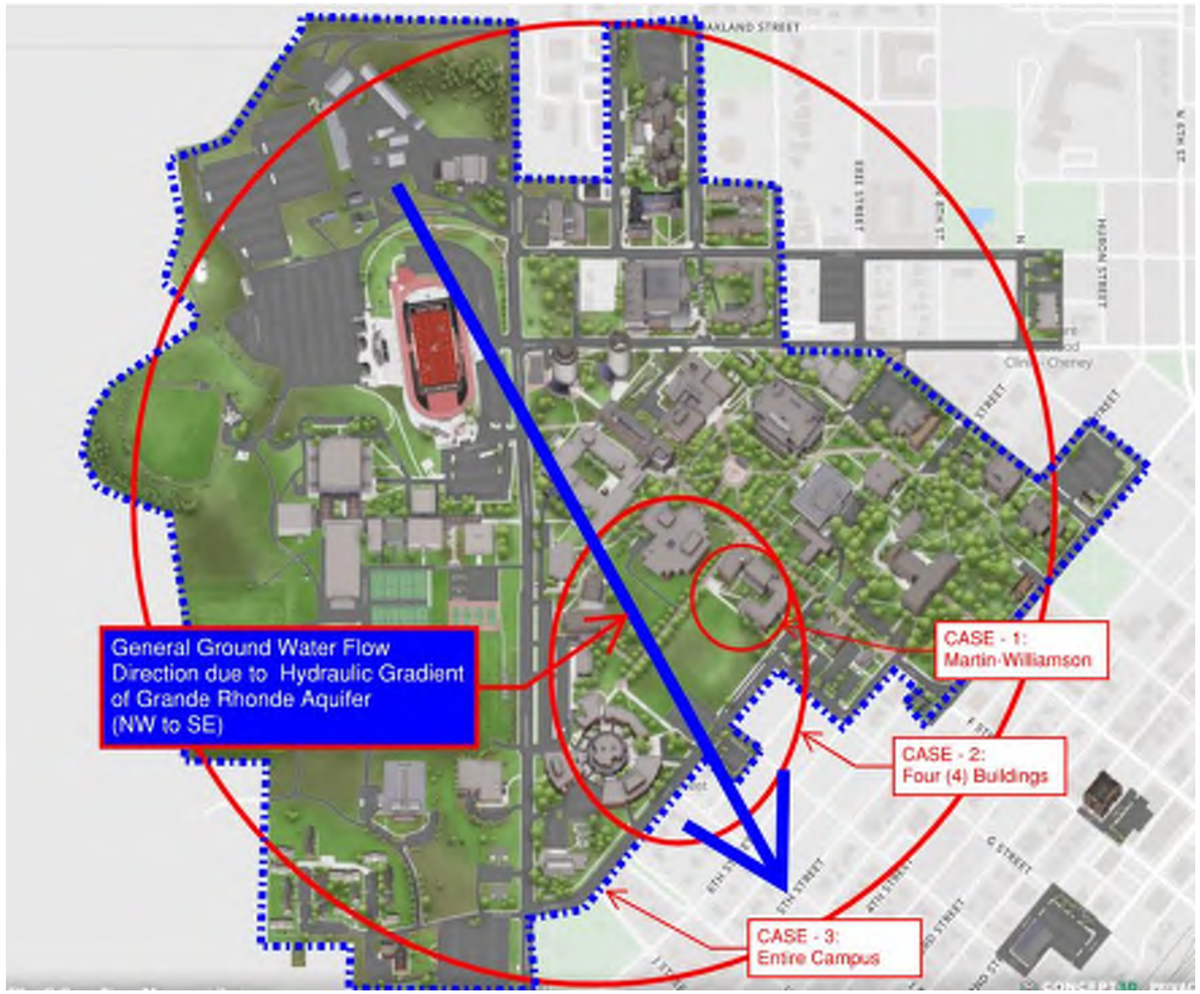
The first case to be study is based around the upcoming project involving the remodel and retrofit of the existing Martin-Williamson Hall facility. Because the existing, aging, HVAC system in Martin-Williamson Hall will be replaced with an entirely new, modern HVAC system, the application of a possible GSHP based system is a practical strategy.

CASE STUDY – 2: FOUR (4) BUILDINGS – MICRO-DISTRICT GSHP SYSTEM

Then, considering the initial M-W case as a likely starting point for the campus transition to GSHP based systems, the nearby buildings that include the JFK Library, the Computing and Engineering Building (CEB) and the Art-Theater-Music (ART) complex, were chosen as part of a so-called Micro-District Heat Transfer Center, under the second case study. This would be a facility where the proposed several open-loop system source wells would deliver the ground water to heat exchangers for the building heat pump systems, before the ground water was returned to the ground via the reinjection wells.

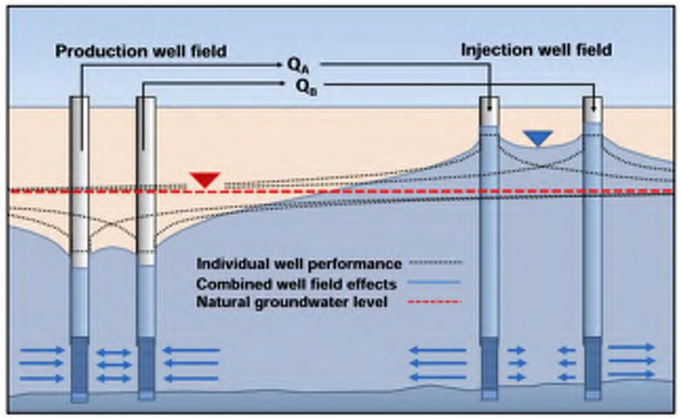
CASE STUDY – 3: ENTIRE CAMPUS – GSHP SYSTEMS

The third, and final, case study would provide a large network of source and reinjection wells, serving multiple micro-district heat transfer centers sprinkled around the campus, to support the entire campus using GSHP systems. This would be the upper boundary case in converting the whole campus to be conditioned by open-loop ground-source type heat pump systems.



Hydro-Geological Assessment | Columbina River Basalt Group (CRBG)

HYDRAULIC MODELING



GRANDE RONDE AQUIFER | EXISTING CONDITIONS

Based on analysis by Landau Associates the CRBG aquifer below EWU campus consists of two units, the Wanapum basalt unit and the Grande Ronde basalt unit. The Grande Ronde is the more productive aquifer and is the focus of the hydrogeologic assessment. The following generalizations can be made.

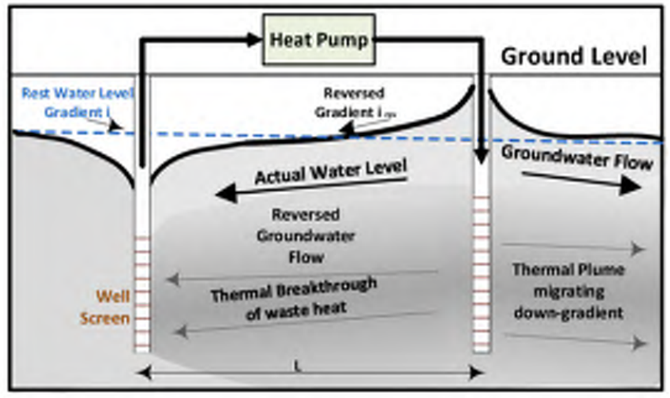
- The CRBG aquifer is present at a depth of approximately 50 to at least 1,300 ft deep.
- It is one of the primary sources for EWU and the City of Cheney.
- The Grande Rhonde portion of the CRBG aquifer is assumed to be confined or semi-confined.
- General regional groundwater flow direction is south.
- Assumed hydraulic gradient: 0.001 to 0.01.
- Estimated transmissivity 9,900 to 1,400 SF/day (Grande Rhonde unit).
- The storage coefficient is assumed to be about 0.0002.

Water rights and impacts to neighboring water users has been reviewed by WNR group. Impairment does not appear to be a project constraint. New water rights for non-consumptive use are therefore likely to be approved.

HYDRAULIC MODELING RESULTS | DESIGN FACTORS

- The aquifer can supply sufficient water to support each of the three case study scenarios proposed.
- Estimated source well pumping rates: 600 gpm to 1,500 gpm.
- Estimated pumping depths: 650 ft deep.
- Estimated draw-down: 16 ft to 87 ft.
- Recommended well spacing: 600 ft.
- Reinjection pressure: 9 to 41 psi.
- Case-1 can be supported by 1-extraction well and 1-injection well.
- Case-2 can be supported by 3-extraction wells and 3-injection wells.
- Case-3 can be supported by 10-extraction wells and 10-injection wells.

THERMAL MODELING | THERMAL BREAKTHROUGH ANALYSIS



- Simulated well-field operation over time indicates no significant thermal breakthrough of waste heat for the proposed well head spacing and seasonal usages.

GSHP Case Study Results Summary | Economic & Environmental Metrics

	BASELINE CASE **EXISTING ROZELL CENTRAL ENERGY PLANT** • HEATING: HP Steam produced by natural gas or oil-fired Boilers. • COOLING: Chilled Water produced by Water-Cooled Chillers • HEAT REJECTION: Open DT Cooling Towers	**CASE STUDY-1** **ONE BUILDING – GSHP SYSTEM: MARTIN-WILLIAMSON HALL** • Open-Loop GSHP System for Heating and Cooling • Building HVAC Retrofit/Upgrade for M-W is Already in the Planning Stages	**CASE STUDY-2** **FOUR BUILDINGS – GSHP SYSTEM: (M-W), (JFK), (CEB) & (ART)** • Open-Loop GSHP System for Heating and Cooling • Micro-District Heat Transfer Center • Building HVAC Systems would need to be Retrofit for GSHP duty	**CASE STUDY-3** **ENTIRE CAMPUS – GSHP SYSTEMS: 45 BUILDINGS, 2.5M SF** • Open-Loop GSHP System for Heating and Cooling • Multiple Micro-District Heat Transfer Centers • Most Campus Building HVAC Systems would need to be Retrofit for GSHP duty	Comments And Notes
ROM HVAC Retrofit Costs ($)		**$2.7M to $3.5M***	**$16.0M to $20.0M**	**$70.0M to $90M**	Rough Order of Magnitude Costs are conceptual in nature.
ROM Well & Infrastructure Costs ($)		**$3.2M to $3.8M**	**$9.0M $12.0M**	**$25.0M to $35.0M**	Well costs run approx. $1.5M per well, plus Elec., HT Center & distribution piping costs.
Total Costs (Avg) ($)		**$6.6M**	**$28.5M**	**$110.0M**	Prices without escalation.
Utility Cost Savings ($/yr)		**$8,000 to $12,000/yr**	**$50,000 to $75,000/yr**	**$500,000 to $700,000/yr**	Compared to Existing Central Utility Plant Services.
Heating EUI Reduction (Kbtu/SF/yr)		**~25**	**~30**	**~45**	
GHG Reduction (tons of CO2e)		**170 tons/yr = 34 gas cars**	**800 tons/yr = 160 gas cars**	**7,700 tons/yr = 1,540 gas cars**	
Zero Carbon Heating and Cooling?		**Yes**	**Yes**	**Yes**	Zero Carbon at campus usage. Grid is not yet carbon zero.
Number of Wells Required		**1 - 16” Extraction** **1 - 16” Injection**	**3 - 16” Extraction** **3 - 16” Injection**	**10 - 16” Extraction** **10 - 16” Injection**	
Well Depth/Pumping Depth (ft)		**1,050 ft/650 ft**	**1,050 ft/650 ft**	**1,050 ft/650 ft**	
Building Area Served (SF)		**87,000 SF**	**~515,000 SF**	**~2,600,000 SF**	
Target System Capacity (ton/gpm)		**200 tons / 600 gpm**	**1,200 tons / 3,600 gpm**	**4,800–6,000 tons/12K to 15K gpm**	Nominal 2.5 – 3.0 gpm per ton.
Comments		*** M-W Hall is already scheduled for Remodel, making it a good candidate for HVAC Upgrades. (Costs already included in Capital Project Funds).** **- A good opportunity for a test case project.** **- Heating EUI Reduction Potential is Substantial.** **- Grant Monies, Rebates and Incentives may be available to reduce first costs.**	**- Good economy of scale for shared Micro-District Heat Transfer Center usage.** **- Aging Building HVAC Systems are good candidates for future upgrades to GSHP systems.** **- Heating EUI Reduction Potential is Substantial.** **- Grant Monies, Rebates and Incentives may be available to reduce first costs.**	**- Good economy of scale. Campus-wide Zero Carbon Heating achievable over time.** **- Upgrading Building HVAC Systems for GSHP duty will be a phased process over several years.** **- Campus Heating EUI Reduction Potential is Substantial.** **- Grant Monies, Rebates and Incentives may be available to reduce first costs.**	

BASELINE CASE | Existing Rozell Central Energy Plant - District Heating & Cooling

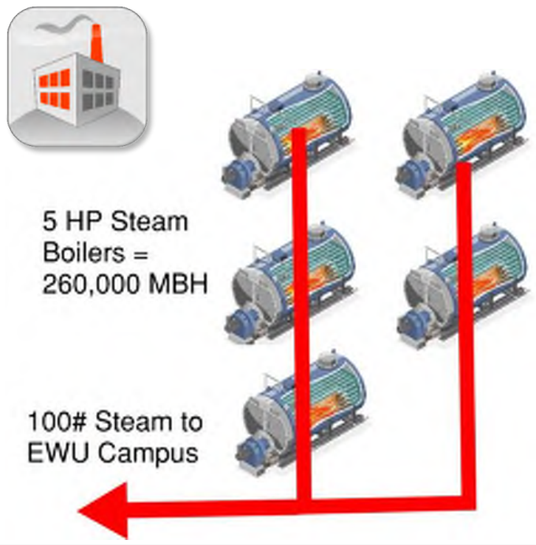
EXISTING ROZELL CENTRAL ENERGY PLANT

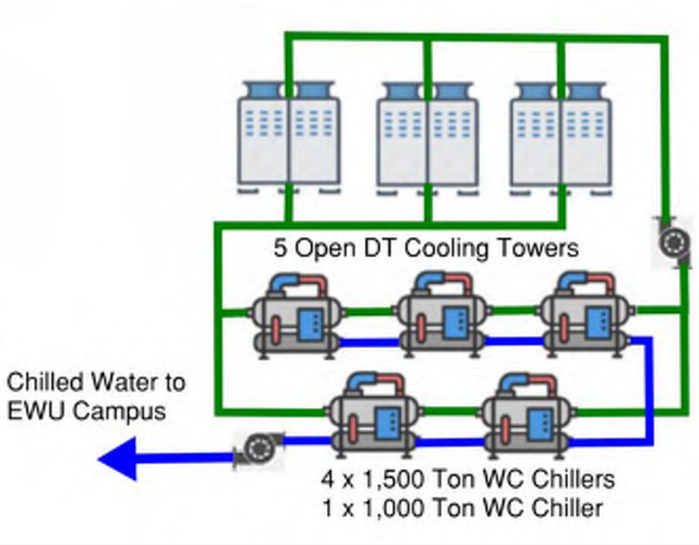
Campus Heating:

- Five (5) Gas & Oil-Fired High Pressure (100#) Steam Boilers
- 260 Klb/Hr Steam Capacity
- Assumed Efficiency – 85%

Campus Cooling:

- Five (5) Water-Cooled Chillers & Open Draw-Thru Cooling Towers
- 7,000 Tons CHW Capacity
- Calculated Efficiency – 0.61 kW/Ton





2022 EWU Utility Rates

- Electricity (City of Cheney): Consumption Rate: $0.064/kWh
- Natural Gas (AVISTA): Consumption Rate: $0.994/Therm

E-GRID WA STATE CO_2E FACTORS

- Electricity CO_2e = 0.44 lb/kWh
- Natural Gas CO_2e = 11.7 lb/Therm

CAMPUS HEATING

Heating for the EWU campus is provided by steam produced at the Central Rozell Energy Plant. High Pressure (100 psig) Steam is distributed through a campus-wide network of underground utility tunnels, which then feeds steam into each building.

Steam pressure is typically reduced to about 15 psig, for space heating needs and domestic hot water production. Some buildings convert the steam to hot water, for hydronic heating, but most facilities use the steam directly. The steam condensate is pumped back to the central plant to be reused in the heating cycle.

Campus heating, due to the cold winter months in eastern Washington, accounts for about 74% of the total central plant energy usage, and about 95% of the carbon emissions. As such the primary focus of this study is to explore opportunities to reduce carbon impacts from the heating plant.

CAMPUS COOLING

Cooling for the EWU campus is provided by chilled water that is produced at the Central Rozell Energy Plant. Five water-cooled chillers and open-type cooling towers produce chilled water at approximately 45 deg. F, which is pumped around the campus through the utility tunnel network.

The chiller plant is in the process of several modernization and energy upgrades, including water-side economizers and variable speed chillers and pumps. Winter cooling, when needed for process cooling needs, is provided by a separate dry-cooler unit, with glycol anti-freeze protection.

The majority of the campus buildings are cooled (air-conditioned) from the chiller plant, except for most of the residence halls, which are not air conditioned. Chilled water from the plant is typically fed directly into the building's HVAC air handling units, without losses due to intervening heat exchangers.

EXISTING CENTRAL PLANT METRICS

Fuel Costs:

Natural Gas/Oil - $1,988,000/yr
Electricity - $ 241,432/yr

Emissions (GHG equivalents):

Natural Gas/Oil – 2,340 Gas Cars/yr
Electricity – 152 Gas Cars/yr

Overall Campus Energy Density:

Heating EUI – 77 kBtu/sf/yr
Cooling EUI – 33 kBtu/sf/yr

CENTRAL ENERGY PLANT AREAS SERVED

Heating ~ 2,600,000 SF
Cooling ~ 2,100,000 SF

CARBON REDUCTION OPPORTUNITIES

- Transition Campus Heating to Heat Pumps (ground or air-source).
- Explore hybrid heating systems, such as air-source heat pumps with steam back-up for cold spells.
- Add/Expand use of Steam Micro-Turbine Electric Generators (Phase 1 is already being implemented) for "free" site produced power.
- Transition to evolving "Green" Fuels, if and when available, such as Renewable Diesel or Renewable Natural Gas. Allows continued use of existing infrastructure.
- Explore eventual transition of the Plant to High-Temperature (LP Steam) Heat Pumps and/or Steam Compressors, as these technologies continue to develop. Allows continued use of existing infrastructure.

CARBON REDUCTION OPPORTUNITIES

- Transition Campus Cooling to Heat Pumps (maximize building heat recovery/sharing opportunities with heating-side operation).
- Explore hybrid cooling systems, using building-level heat pumps with simultaneous heat recovery operation, to maximize efficiency during moderate weather, with chiller plant use during peak summer cooling season. Allows continued use of existing infrastructure and highly efficient chiller plant.
- Explore opportunities to continue maximize existing chiller plant efficiencies, such as Thermal Energy Storage, Steam-Powered Chillers, etc.

CARBON REDUCTION CHALLENGES

- Carbon Reduction Costs are very high for these case studies.
- Transitions and upgrades/retrofits will take time and be disruptive.
- Future costs of energy are uncertain.
- Alternative GHG reduction technologies are still emerging. Markets are developing.

CASE STUDY-1 | Martin-Williamson Hall Complex GSHP System

GROUND-SOURCE HEAT PUMP (GSHP) SYSTEM HVAC INFRASTRUCTURE:

- Water-to-Water Heat Recovery Chillers (Heat Pumps) – 2 Units
- Heat Exchanger
- Distribution Pumps (To GSHPs)
- Extraction Well Supply Pump
- Underground Piping to and from Well Heads.

FIRST COSTS:

- Bldg HVAC Systems:
  90K SF x $35/sf = $3.1M

(Costs for GSHP system components only, other HVAC costs are common to other systems)

OPEN-LOOP TYPE EXTRACTION & REINJECTION WELL CHARACTERISTICS:

Target System Capacity:
200 tons

Ground Water Exchange Flow Rate:
600 gpm

Spacing Between Extraction and Reinjection Wells:
600 ft

Total Well Depth:	No. of Wells:
1,075 ft	**2 (1-pair)**

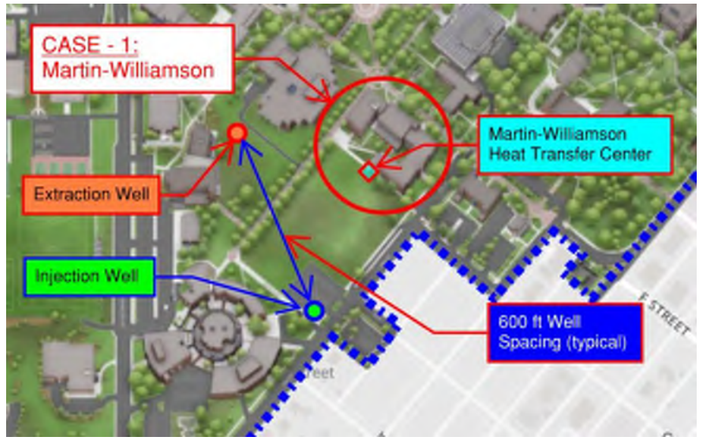
Pump Depth:	Average Reinjection Backpressure:
650 ft	**20 PSI**

FIRST COSTS:

- Wells, Pumps & Piping: $3.5M
($1.5M per well – Typical)

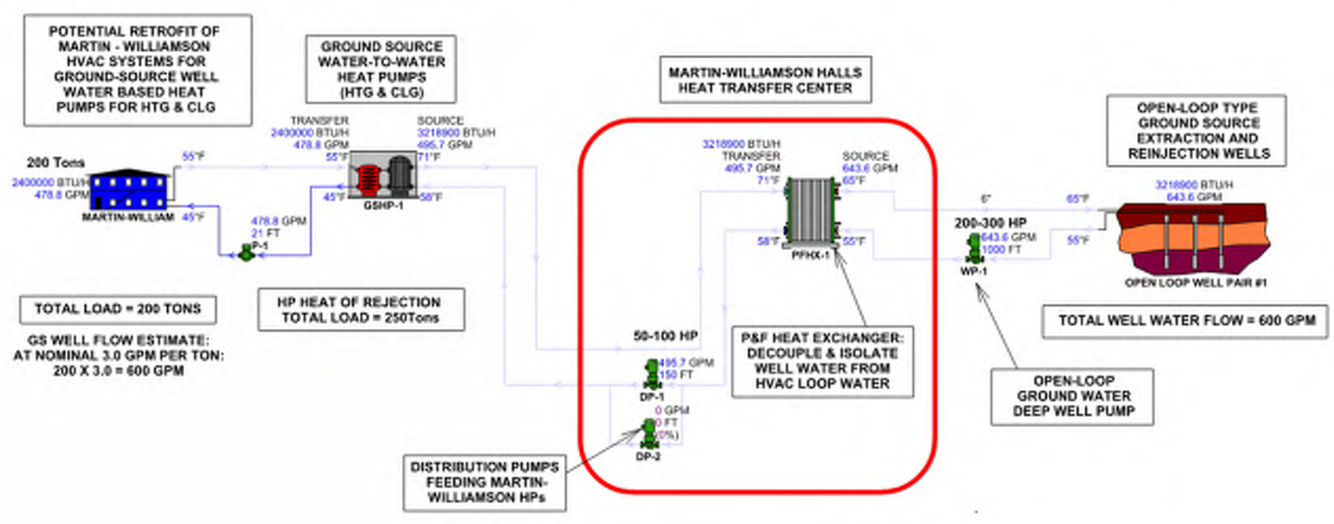
PROPOSED OPEN-LOOP WELL LOCATIONS:

The proposed location of the extraction well, for the Martin-Williamson Complex, would be near the NE corner of the CEB building. The location of the injection well would be at the SE corner of the vacant lot, where the former Reid Elementary School was torn down. This well would be situated near the corner of the lot, to allow for future construction in the main vacant area, with piping running along the edges, to and from the well heads.

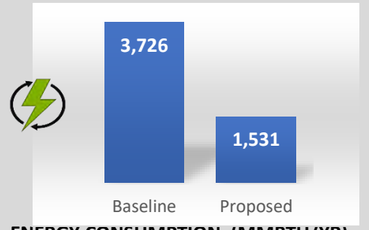


PROPOSED SYSTEM DESIGN:

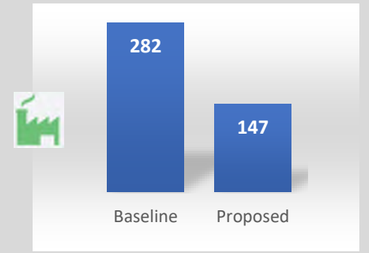
The existing Martin-Williamson Complex is in the process of being studied for a complete renovation and upgrade. This provides an excellent opportunity to consider possible new, energy efficient, carbon-zero, HVAC system options.
For this study, the proposed HVAC system would be based on a ground-source heat pump (GSHP) system, utilizing open-loop wells for supply and reinjection of ground water, which acts as the source of the heat-sink & source for the central heat pump equipment. Utilizing a ground-source heat pump system for the building heating needs, which utilizes electricity, instead of fossil-fuel based steam from the Rozell Central Plant, allows the facility to be heated up to 400% more efficiently compared the existing steam system, thereby providing for significant reductions in greenhouse gas (GHG) emissions.



ENERGY & CARBON ANALYSIS:



ENERGY CONSUMPTION (MMBTU/YR)



CARBON EMISSIONS (TONS/YR)

PERFORMANCE ANALYSIS:

The open-loop ground source heat pump system is able to reduce heating energy by about 60% compared to heating from the existing central steam plant. Cooling energy is similar to the central chiller plant, since the GSHP's higher efficiency is tempered somewhat by the extraction well pumping energy needs.

SAVINGS FROM BASELINE:

Heating EUI Savings: **25 btu/sf/yr**
Energy Cost Savings: **$11,000/yr**
Carbon Emissions Reductions: **135 tons/yr**
(27 gas cars off the road)

FIRST COST ANALYSIS:

The proposed GSHP system using open-loop wells, will have significantly higher first costs compared to a system that ties into the existing central plant steam and hot water systems.

CASE STUDY-2 | Four (4) Building – Micro-District GSHP System

GROUND-SOURCE HEAT PUMP (GSHP) SYSTEM HVAC INFRASTRUCTURE:

- Water-to-Water Heat Recovery Chillers (Heat Pumps) – 2 Units/Bldg
- Heat Exchangers
- Distribution Pumps (To GSHPs)
- Extraction Well Supply Pumps
- Underground Piping to and from Well Heads.

FIRST COSTS:

- Bldg HVAC Systems:
  515K SF x $35/sf = $18.0M

(Costs for GSHP system components only). Also requires existing HVAC systems to be retrofit for GSHP duty.

OPEN-LOOP TYPE EXTRACTION & REINJECTION WELL CHARACTERISTICS:

Target System Capacity:
1,600 tons

Ground Water Exchange Flow Rate:
4,800 gpm

Spacing Between Extraction and Reinjection Wells:
600 ft

Total Well Depth:	No. of Wells:
1,075 ft	**6 (3-pairs)**

Pump Depth:	Average Reinjection Backpressure:
650 ft	**20 PSI**

FIRST COSTS:

- Wells, Pumps & Piping: $10.5M

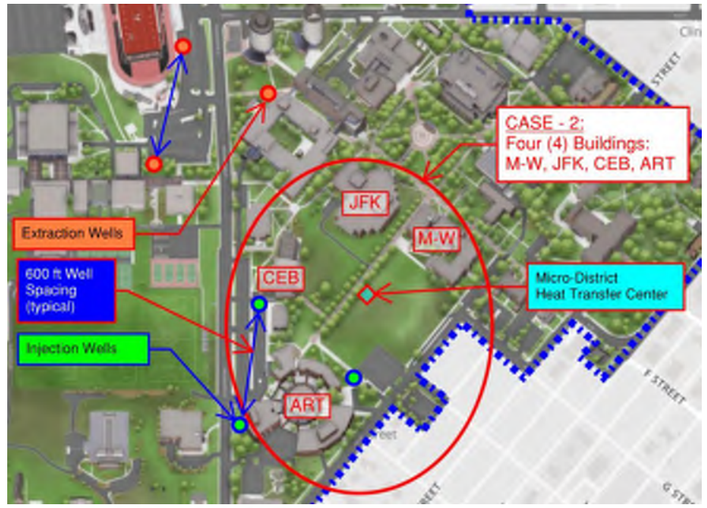
($1.5M per well – Typical)

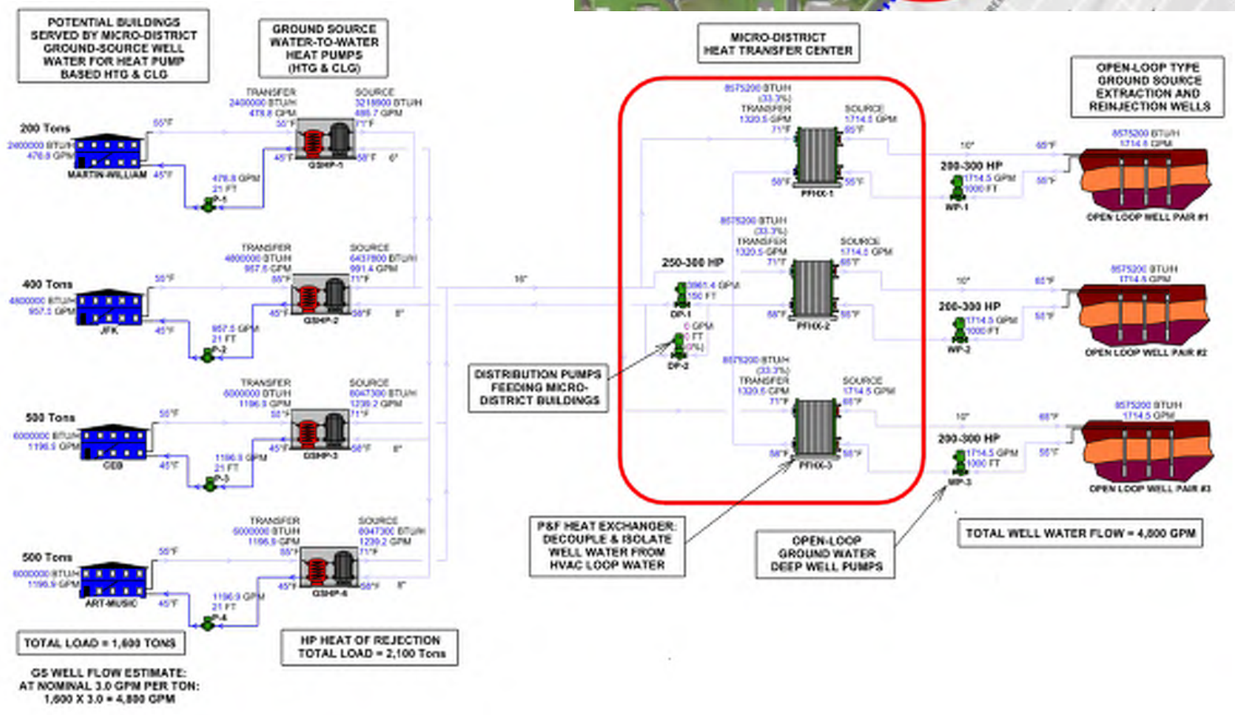
PROPOSED OPEN-LOOP WELL LOCATIONS:

Expanding on the well locations as proposed in Case Study-1, additional extraction wells would be added up-gradient, around the stadium parking areas, with matching reinjection wells located along Washington St, near theCEB and ART complexes.

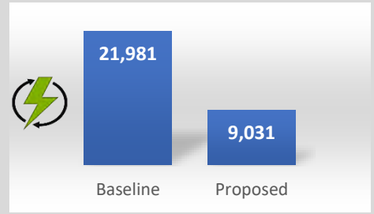
PROPOSED SYSTEM DESIGN:

In this scenario, the ground-source extraction wells would supply water to a central "Micro-District" Heat Transfer Center. Here the ground loops would be decoupled using heat exchangers, and secondary pumps would then distribute water to the various connected buildings in the network.

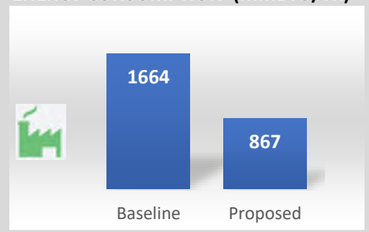




ENERGY & CARBON ANALYSIS:



ENERGY CONSUMPTION (MMBTU/YR)



CARBON EMISSIONS (TONS/YR)

PERFORMANCE ANALYSIS:

Similar to Case Study-1, The open-loop ground source heat pump system is able to reduce heating energy by about 60%, compared to heating from the existing central steam plant. There is some economy of scale in this scenario, with multiple wells that can be staged and optimized with load changes.

SAVINGS FROM BASELINE:

Heating EUI Savings: **30 btu/sf/yr**
Energy Cost Savings: **$65,000/yr**
Carbon
Emissions Reductions: **800 tons/yr**
(160 gas cars off the road)

FIRST COST ANALYSIS:

The proposed GSHP system using open-loop wells, will have significantly higher first costs compared to a system that ties into the existing central plant steam and hot water systems.

CASE STUDY-3 | Entire Campus Conversion to GSHP Systems

GROUND-SOURCE HEAT PUMP (GSHP) SYSTEM HVAC INFRASTRUCTURE:

- Micro-District Heat Transfer Buildings
- Water-to-Water Heat Recovery Chillers (Heat Pumps) – 2 Units/Bldg
- Heat Exchangers
- Distribution Pumps (To GSHPs)
- Extraction Well Supply Pumps
- Underground Piping to and from Well Heads.

FIRST COSTS:

- Bldg HVAC Systems:
  2,600,000 SF x $30/sf = $78.0M

(Costs for GSHP system components only). Also requires existing HVAC systems to be retrofit for GSHP duty.

OPEN-LOOP TYPE EXTRACTION & REINJECTION WELL CHARACTERISTICS:

Target System Capacity:
4,800 tons to 6,000 tons

Ground Water Exchange Flow Rate:
12,000 gpm to 15,000 gpm

Spacing Between Extraction and Reinjection Wells:
600 ft

Total Well Depth:	No. of Wells:
1,075 ft	**20 (10 pairs)**

Pump Depth:	Average Reinjection Backpressure:
650 ft	**20 PSI**

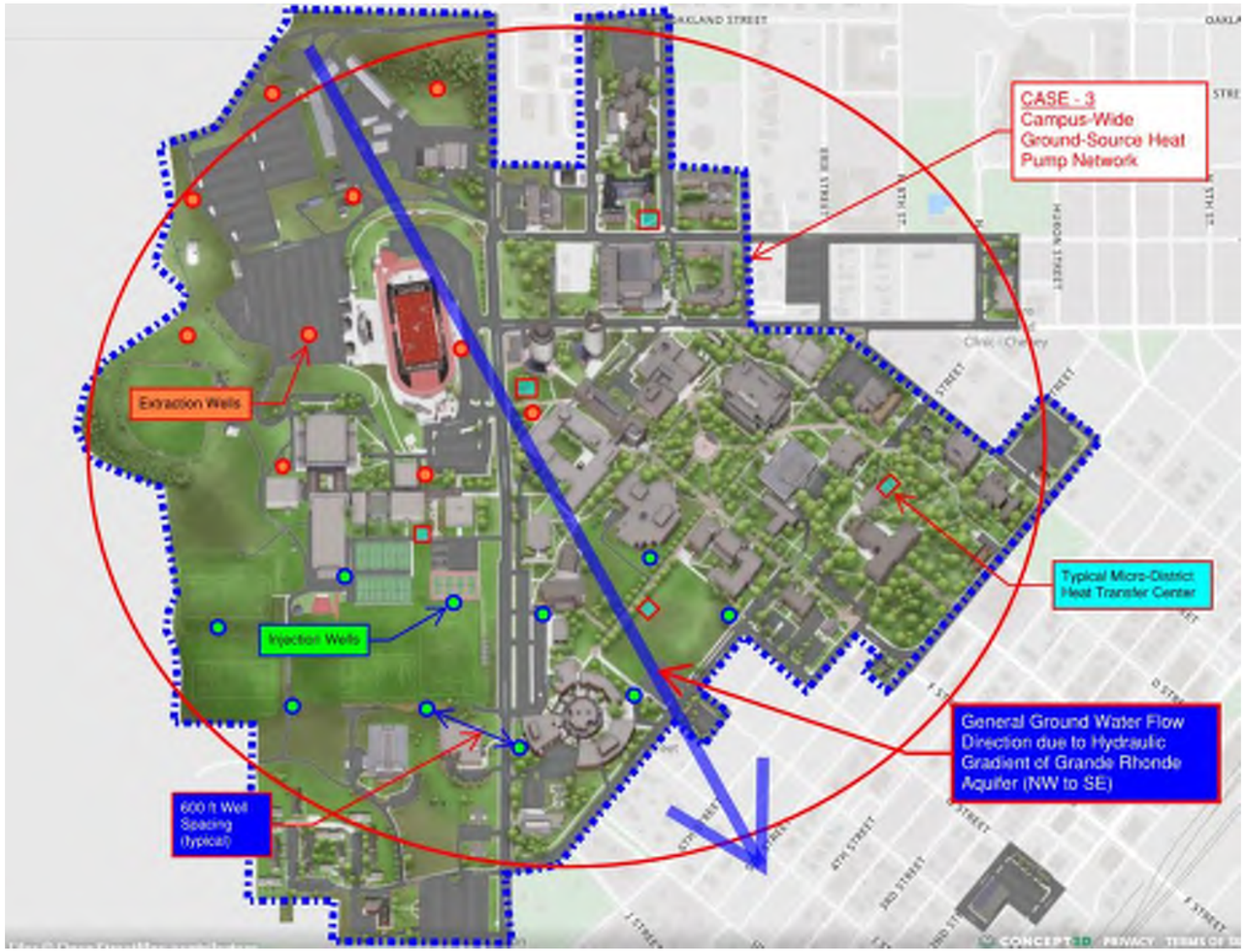
FIRST COSTS:

- Wells, Pumps & Piping: $32.0M
($1.5M per well – Typical)

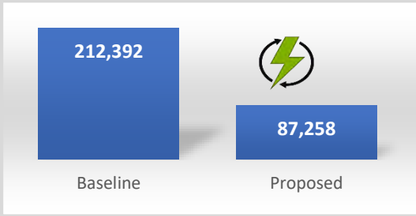
PROPOSED OPEN-LOOP WELL LOCATIONS:

Converting the entire campus heating system to ground source heat pumps will require a considerable expansion of the well fields proposed in Case Studies 1 & 2. Under this scenario, it is envisioned that the extraction wells would be located up-gradient, mostly around the stadium and parking lots. The injection wells would be situated SE from the extraction wells, primarily along the perimeter of the playfields and central campus lawn areas.

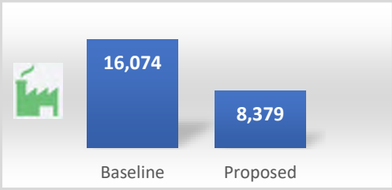
Under this scenario, all of the campus buildings steam heating systems would need to be retrofit, in order to utilize the lower heating water temperatures produced by the ground-source heat pump systems. This will require a multi-year, phased approach, in order to transition away from the central energy plant, to the proposed distributed energy system.



ENERGY & CARBON ANALYSIS:



ENERGY CONSUMPTION (MMBTU/YR)



CARBON EMISSIONS (TONS/YR)

PERFORMANCE ANALYSIS:

Performance estimates for this scenario are simply extrapolations of the other case studies, scaled to the entire campus area. Due to the variations in building types, uses, operation, age, etc., detailed energy modeling estimates at this stage are not practical.

SAVINGS FROM BASELINE:

Heating EUI Savings: **48 btu/sf/yr**
Energy Cost Savings: **$620,000/yr**
Carbon
Emissions Reductions: **7,700 Tons/yr**
(1,540 gas cars off the road)

FIRST COST ANALYSIS:

The costs of the proposed campus-wide GSHP system, to convert from central plant steam and chilled water, will be significant. Numbers presented here are simply rough-order-of-magnitude values, for conceptual planning purposes.

SECTION 2

APPENDICES

2.5 MARTIN WILLIAMSON HALL PREDESIGN

EWU

MARTIN-WILLIAMSON

Integrus Project No. 22364.01 June 28th, 2024

PREDESIGN BOOK

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

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Spokane, WA 99201
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www.integrusarch.com

TABLE OF CONTENTS

INTRODUCTION

AUTHORITY:

This predesign study was authorized by and contracted through Eastern Washington University.

FORMAT:

This document has prepared by utilizing the format recommended in the 2025-2027 Pre-Design Manual developed by the Office of Financial Management, State of Washington.

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Agency Information	
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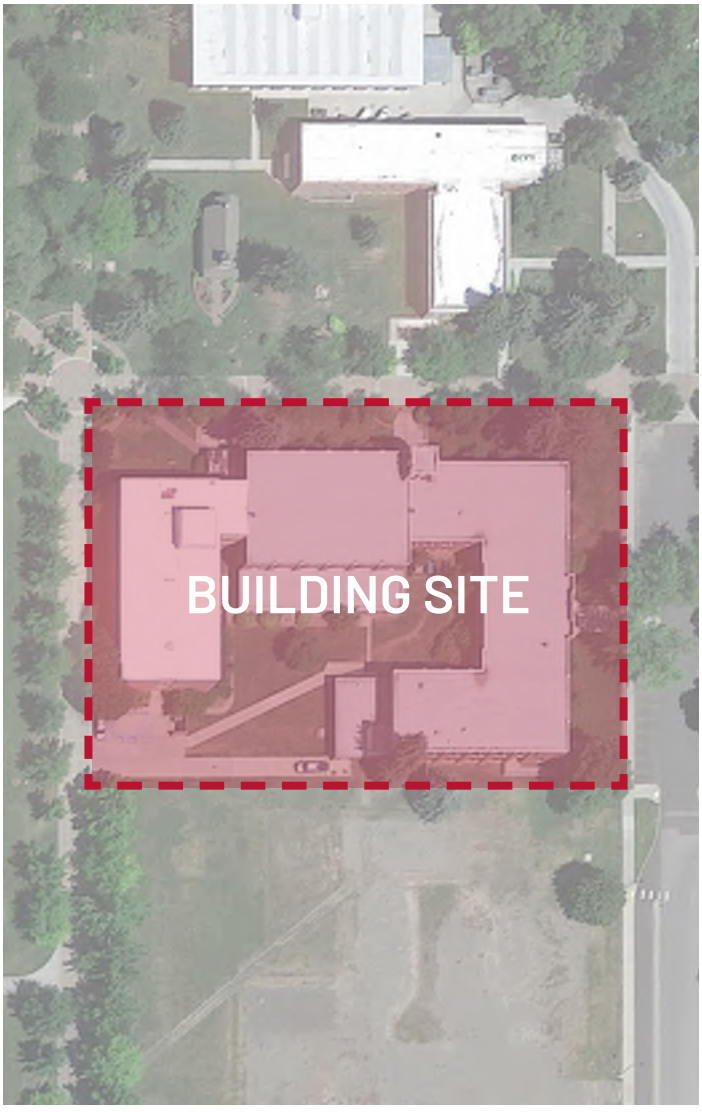
Agency Code	370
Project Number	40000113
Project Title	Martin Williamson Hall
Agency Contact	Kris Jeske, Director, Construction and Planning kjeske1@ewu.edu Eastern Washington University 101 Rozell Cheney, WA 99004 P: (509) 359-6323



Martin Williamson Hall - Project Site

SECTION 1

EXECUTIVE SUMMARY

1.0 EXECUTIVE SUMMARY

1.1 PROBLEM SUMMARY

Martin Williamson Hall stands as one of Eastern Washington University's largest academic buildings, encompassing approximately 90,000 gross square feet. Positioned prominently near the main campus quad, Martin Williamson creates an iconic historic backdrop for the pedestrian heart of campus life.

Martin Williamson Hall houses two of five programs within the College of Professional Programs: the School of Education and the School of Psychology. Also located within Martin Williamson Hall, and closely tied to the departments and academic success is Counseling and Wellness Services.

The current condition and configuration of Martin Williamson Hall presents significant obstacles and limitations to the departments housed within, inhibiting effective quality program instruction, administration, and student services. Addressing these challenges is paramount to fostering an environment conducive to student and departmental success at EWU.

Eastern Washington University is working to reduce its Energy Use Intensity (EUI) to meet Clean Building Performance Standard requirements and aims to switch from fossil fuel-based heating to alternative energy sources.

1.2 OPPORTUNITY AND PROGRAM REQUIREMENTS

Currently, Martin Williamson Hall houses the School of Education, School of Psychology, and Mental Health Counseling Services, but the building lacks sufficient space and amenities to support these programs effectively. There are issues with accessibility, safety, and outdated infrastructure, which impact the learning environment and research capabilities. Additionally, these shortcomings contribute to high energy usage and carbon emissions.

The proposed project is envisioned as a 124,000 gsf multi-story and multi-use facility to house the School of Education, School of Psychology, Counseling and Wellness Services, and Student Accommodations and Support Services.

Martin Hall Entry

Martin Williamson Hall Connection & Williamson Entry

Martin Williamson Hall Connection

EWU currently houses the critical student support services of Mental Health Counseling Services, Wellness Services, and Student Accommodations and Support Services spread across three different buildings on campus. Consolidating the three services of Mental Health Counseling, Wellness, and Student Accommodations into a single building at the campus core will improve access and offer streamlined and holistic wrap-around support to EWU students.

Mental Health Counseling services are presently housed in Martin Hall, where the counseling offices and treatment rooms are outdated and inadequate. These spaces lack sufficient size and amenities to accommodate the full range of services provided. Moreover, they suffer from accessibility shortcomings and fail to uphold the necessary standards for patient confidentiality.

Wellness Services currently reside within the University Recreation Center and lacks a dedicated space for its Peer Health Educators and Eagles for Recovery program. With Counseling and Wellness housed in separate buildings, it not only hinders collaboration and wrap-around student support, but challenges the Director to provide timely oversight and immediate assistance to both initiatives.

Student Accommodations and Support Services currently occupies two segmented areas in the basement level of Hargreaves Hall. This space poses challenges for individuals with mobility or vision impairments due to its remote location within the building requiring the use of ramps and elevators. Furthermore, the case manager offices located in a separate suite creates obstacles for directors to efficiently oversee activities and provide assistance when required.

The COVID-19 pandemic produced psychological hardship across the world and has created new social and academic challenges for today's youth. The World Health Organization says, "COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide in its first year;" "By the end of 2021 the situation had somewhat improved but today too many people remain unable to get the care and support they need for both pre-existing and newly developed mental health conditions."

This project will allow Eastern Washington University's Counseling and Wellness Services, Training Clinic, and Student Accommodations and Support Services to be conveniently collocated at the center of campus, where they will be able to provide high quality services to students, faculty, staff, and the broader community for free and in private spaces designed for confidentiality and comfort.

This project will result in a new functional facility that addresses modern instruction and research needs and provides a sensitive and supportive environment for all EWU students. The facility will have an expected life of 50-100 years, and will significantly increase energy efficiency, with a high-performance envelope, and all new low carbon energy efficient designs and equipment. It will be designed to a minimum LEED Silver certification by the U.S. Green Building Council and to meet the Washington State Clean Building Standards.

An energy life cycle cost analysis was conducted to explore potential energy systems for the building. This assessment revealed an energy use reduction from the existing building, which could lower the overall campus EUI by over 6%, bringing it within the Clean Building Performance Standard requirements. With these high-performing energy systems and a connection to the newly proposed all-electric geothermal heating system, this building will become one of the first all-electric buildings on campus, significantly reducing the campus' operational carbon emissions.

1.3 SUMMARY OF ALTERNATIVES

The Martin Williamson Hall Predesign considered three alternatives summarized below.

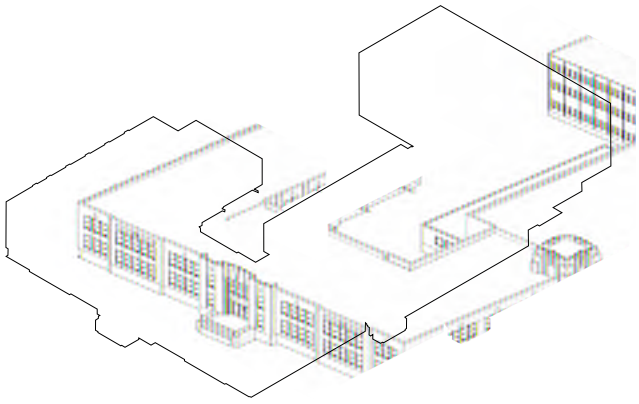
Alternative A: No Action
A no action alternative was considered.

Alternative B: Renovation & Replacement
Alternative B explored the full renovation of Martin Hall and the complete replacement of Williamson Hall.

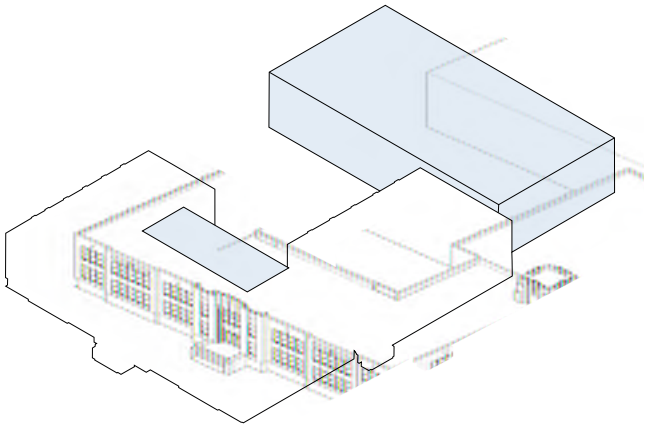
Alternative C: Historic Screen (Preferred Alternative)
Alternative C presents a comprehensive plan centered on the replacement of Martin Williamson Hall while preserving two of Martin Hall's historic facades—the northeast and southeast elevations.

1.4 SUMMARY OF PREFERRED ALTERNATIVE

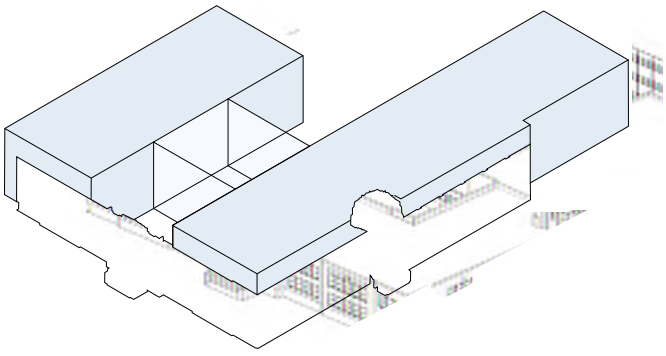
The identified institutional goals, program needs, and ability to address state mandated performance criteria can be best addressed through Alternative C: Historic Screen. This approach aligns most closely with EWU's institutional mission and overarching goals, while effectively addressing the project's Guiding Principles, and meeting the diverse needs of academic and student service programs to be housed in the facility.



Alternative A Axon - No Action



Alternative B Axon - Renovation & Replacement



Alternative C Axon - Historic Screen

1.5 SUMMARY BUDGET OF PREFERRED ALTERNATIVE

Summary Budget of Preferred Alternative						
	Phase 1 - Cost Estimate	Phase 2 - Cost Estimate	Total Cost	Phase 1 - Escalated Costs	Phase 2 - Escalated Costs	Total Cost - Escalated
Acquisition	$0	$0	$0	$0	$0	$0
Consultants	$8,056,326	$5,466,907	$13,523,233	$8,789,190	$6,117,967	$14,907,157
Construction	$64,423,332	$44,402,726	$108,826,058	$73,112,861	$53,879,081	$126,991,942
Equipment	$3,308,181	$2,448,205	$5,756,386	$3,762,394	$2,973,101	$6,735,495
Artwork	$441,683	$325,913	$767,596	$441,685	$325,913	$767,598
Project Admin	$2,349,834	$1,821,884	$4,171,718	$2,672,466	$2,212,496	$4,884,962
Other Costs	$0	$0	$0	$0	$0	$0
Total Project	**$78,579,356**	**$54,465,635**	**$133,044,991**	**$88,778,596**	**$65,508,558**	**$154,287,154**

	Cost Estimate	Cost/ SF	Escalated Cost Estimate	Cost/ SF
MACC Phase 1	$53,536,820	$749	$60,744,363	$850
MACC Phase 2	$37,067,087	$701	$44,974,243	$850
MACC	**$90,603,907**	**$728**	**$105,718,606**	**$850**

SECTION 2

PROBLEM STATEMENT

2.0 PROBLEM STATEMENT

2.1 IDENTIFY THE PROBLEM & OPPORTUNITIES

Problem

EWU seeks design funding to renovate and re-imagine Martin Williamson Hall. Constructed in 1935 and later renovated in 1977, Martin Hall's evolution reflects the changing landscape of academic pedagogy. While the renovation in '77 introduced specialized laboratory and research clinical spaces, aligned with teaching methodologies of the time, these configurations now pose barriers to modern instructional practices. In contrast, Williamson Hall, erected in 1967, awaits comprehensive renovation and crucial infrastructure upgrades, with its systems exceeding their anticipated lifespans.

The current condition and configuration of Martin Williamson Hall presents significant obstacles and limitations to the departments housed within, inhibiting effective quality program instruction, administration, and student services. Addressing these challenges is paramount to fostering an environment conducive to student and departmental success at EWU.

Opportunities

This project offers opportunities to tackle current programmatic, safety, equity, sustainability, and operational challenges facing Martin Williamson Hall. Through strategic initiatives, EWU aims to profoundly enhance the experiences of students, faculty, and staff within the School of Education, School of Psychology, Counseling and Wellness Services, Student Accommodations and Support Services, and the wider EWU community. The renovation of Martin Williamson Hall encompasses several key opportunities:

- **Quality Learning Outcomes:**

Transforming underutilized and inadequate instructional spaces into new, accessible, and supportive learning environments tailored to meet the diverse needs of the student body. This alternative proposes a reduction in classrooms from 27 to 15, which improves EWU's total campus classroom utilization.

- **High-Performance and Decarbonization:**

Implementing state-of-the-art, energy-efficient building systems to minimize energy consumption and reduce the need for ongoing maintenance. These upgrades not only benefit the environment but also ensure the long-term functionality of the facility.

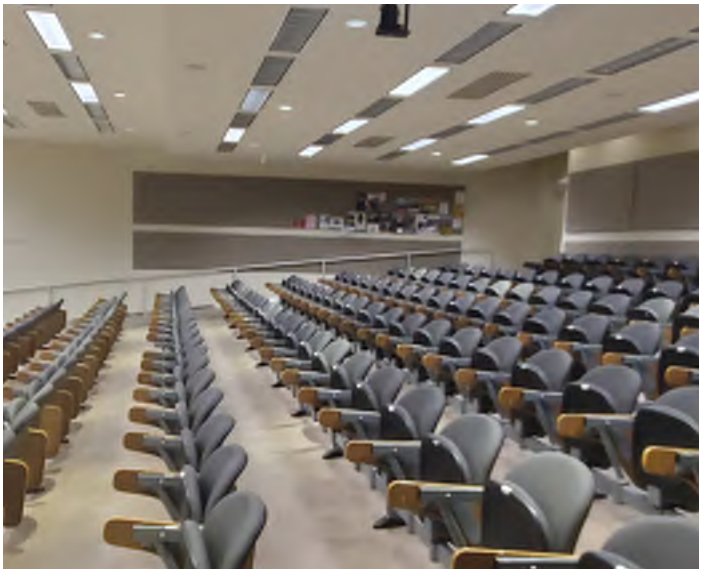
Eastern Washington University is actively seeking strategies to reduce its campus Energy Use Intensity (EUI) to meet the Clean Building Performance Standard requirements, as the current EUI exceeds these standards. Additionally, the university aims to utilize alternative heating sources that do not rely on fossil fuels, compared to their existing fossil fuel-driven campus steam plant.

- **Inclusive and Equitable Environments:**

By housing C&WS and SASS within the building, implementing universal design principles will enhance the capacity of these programs to support all EWU students effectively and equitably. The inclusion of Inclusive Restrooms, designed to accommodate students of all identities, abilities, and backgrounds, will set a precedent for future models across the EWU campus.

- **Safety and Access:**

Enhancing accessibility and safety measures by ensuring all building entries are accessible, eliminating long dead-end corridors to improve emergency response, addressing accessibility deficiencies, and enhancing wayfinding and navigational features.



Auditorium

2.2 DRIVERS FOR THE PROJECT'S OPERATIONAL PROGRAMS

The existing Martin Williamson Hall is currently in non-compliance or below standard requirements of the following local, state, and federal codes:

Accessibility Requirements for People with Disabilities:

- Washington State Law Against Discrimination (RCW49.60.222)
- Washington State Building Code (WAC 52-50)
- Americans with Disabilities Act of 1990 (2 U.S.C. Part B)
- Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794)

Green Building Requirements:

- High Performance Building – LEED Silver Standard (RCW 39.35D)
- State Energy Standards for Clean Buildings, RCW 19.27A.210
- Per Executive Order 20-01 State Efficiency and Environmental Performance, New Facility Construction, dated January 23, 2020.
- Electric Car Charging Stations per RCW 19.27.540
- Greenhouse Gas Reduction Strategies per RCW 70A.45.070

Infrastructure Requirements:

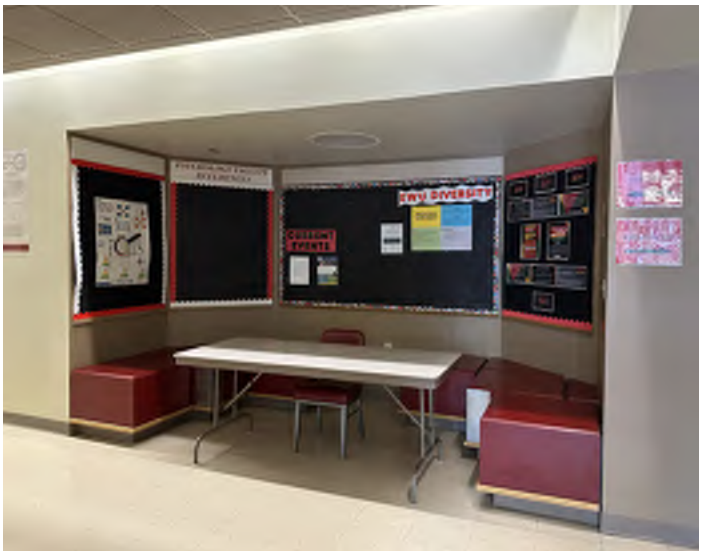
- International Building Code (IBC)
- International Mechanical Code
- International Fire Code (IFC)
- Local Codes & Ordinances
- National Electric Code (NFPA 70)

Fire Protection Requirements:

- National Fire Protection Association (NFPA) Section 13
- International Fire Code (IFC)
- Regulations of the State Fire Marshall

Pedagogy, research, and technology requirements significantly differ from those of fifty years ago when the buildings were constructed and renovated. Current techniques often include more project-based work which demands group participation in a large room setup with multiple teaching and learning aids. These typically square spaces don't fit well in the old building with short spans and small column bays. The few larger classrooms in the existing building have limited technology infrastructure and difficult site lines for students sitting at the room's periphery.

Existing Mental Health Counseling Services Entrance



Existing Student Space

2.3 CONNECTION TO AGENCY MISSION, GOALS AND OBJECTIVES

The Guiding Principles and preferred alternative for this project align with Eastern Washington University's institutional goals at several levels and across several of their different campus plans and initiatives.

Guiding Principles

The proposed renovation of Martin Williamson Hall supports Eastern Washington University's commitment to expanding opportunities for personal transformation through excellence in learning through three core themes of access, learning, and completion. The Martin Williamson Hall renovation embodies each of these requirements by centering key wellness functions and departments that are feeders to our regional wellness and education systems into a single multidisciplinary and highly functional building.

An initial visioning workshop was held with the Pre-design Committee to develop a list of goals and aspirations that would guide the project. The identified goals were all centered around three themes: CONNECTIVE, SUPPORTIVE, and FUTURE FORWARD. The below Guiding Principles will be referenced throughout the design process and aid in project decision making.

CONNECTIVE

- Articulate spaces that are **WELCOMING** to all and foster **CONNECTION**.
- Encourage a **COLLABORATIVE ENVIRONMENT** for student, faculty, and departmental interactions.

SUPPORTIVE

- Create environments that are **SENSITIVE** and meet needs beyond that which is basic and required.
- Provide students and faculty with a modern space for **RESEARCH** and **APPLIED WORK** so they hone skills to **SERVE** their communities.

FUTURE FORWARD

- Build for **LONGEVITY** of infrastructure and program **ADAPTABILITY**, always considering the building's **NEXT LIFE**.
- Reduce environmental impact through **DECARBONIZATION** and improved **EFFICIENCY**.

Alignment to EWU Institutional Strategic Plan

The mission of Eastern Washington University is to provide an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence. The renovation of Martin Williamson Hall will support EWU's 2024-2029 Institutional Strategic Plan (in the process of being finalized and adopted by the board of trustees) through:

ACCESSIBILITY:
Martin Williamson Hall will convert an outdated building, no longer compliant with current codes for accessibility and safety, by improving access and inclusivity throughout to reflect the vibrant, welcoming, and supportive environment they strive to create.

ACADEMIC EXCELLENCE:
Martin Williamson Hall will transform the learning experience of EWU students creating a learning environment that is a hub of hands-on learning, collaboration, and support.

BELONGING:
Martin Williamson Hall will elevate and improve access for all EWU students to Counseling and Wellness Services and Student Accommodations and Support Services by collocating these critical support programs in a central and convenient location.

REGIONAL IMPACT:
Martin Williamson Hall will promote collaboration across the Education and Psychology departments and be a conduit for interaction between faculty, students, and administrators leading to new and unrealized opportunities to support the region.

STUDENT SUCCESS:
Martin Williamson Hall will be transformed into a student-centered hub for learning and support services. Modern functional learning environments will inspire students and ensure that success is not only measured or achieved through academics but a wholistic student experience.

SUSTAINABILITY:
Martin Williamson Hall will have high-performing energy systems and a connection to the newly proposed all-electric geothermal heating system and will become one of the first all-electric buildings on campus.

Primary Campus Pathway - Martin Hall

Arevalo Student Mall Near Martin Williamson

Secondary Campus Pathway - Williamson Hall

Alignment with EWU Campus Master Plan

Eastern Washington University plans to revisit the Campus Master Plan starting summer of 2024 and the renovation of Martin Williamson Hall will remain a critical component of their future planning.

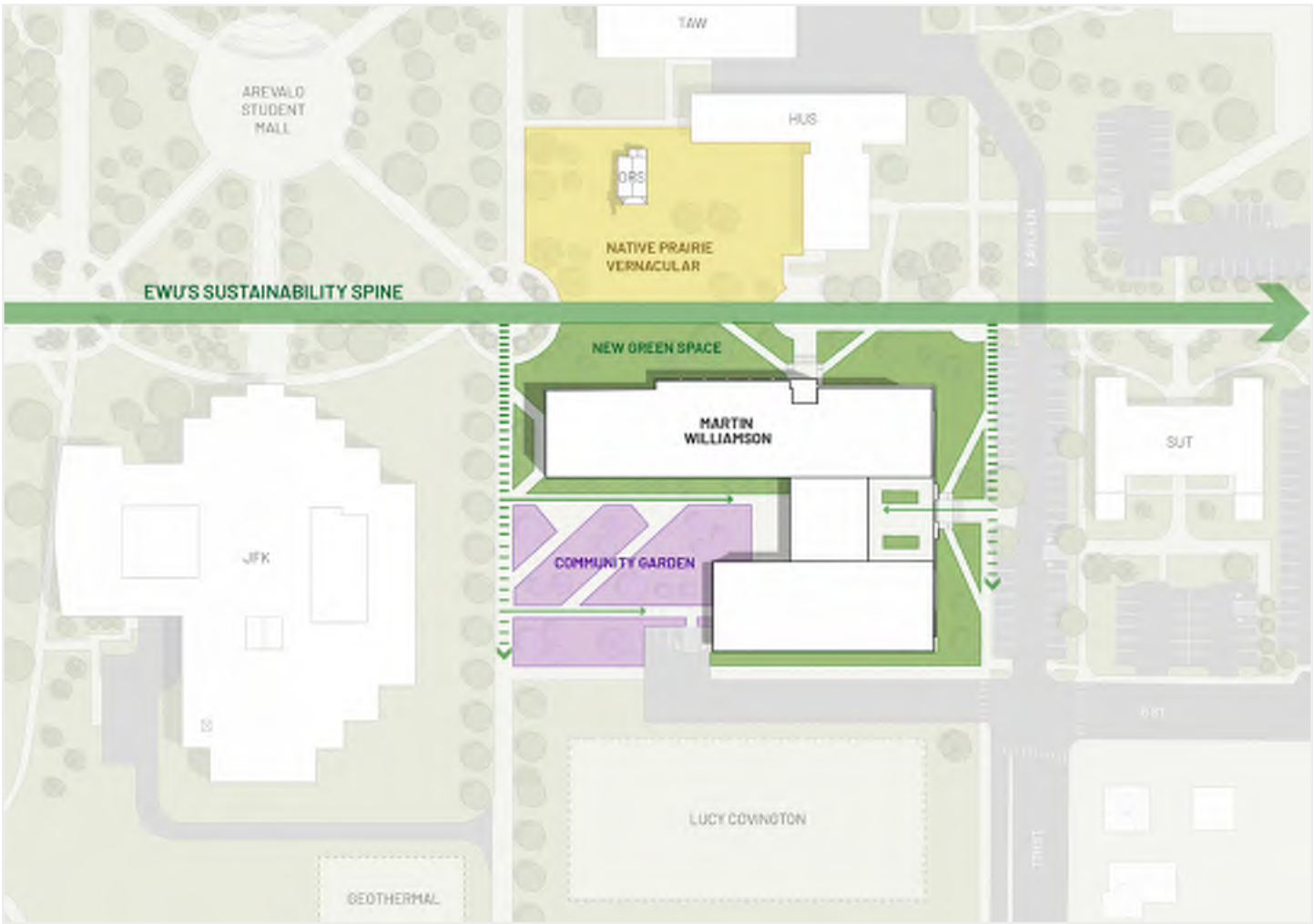
Alignment with EWU Climate Action Plan

The major renovation of Martin Williamson Hall is one of the top building priorities identified in EWU's 2022-2025 Climate Action Plan to support targeted reductions in campus energy use and greenhouse gas emissions.

By connecting this building to the newly proposed, ultra-high efficient geothermal heating and cooling system, it will become one of the first on campus to enable energy trading with existing buildings. This setup will allow the capture and utilization of previously wasted energy.

Alignment with EWU Climate Resiliency Landscape Master Plan

EWU's Climate Resiliency Landscape Master Plan establishes a 'Sustainability Spine' that seamlessly integrates sustainable landscaping into the heart of the campus. This initiative aims to showcase EWU's commitment to sustainability and climate resilience, providing students with daily exposure to these essential concepts. The 'Sustainability Spine' will span the entirety of Martin Williamson Hall's northeast facade, with extensions reaching along its northwest and southeast facades. The preferred Alternative C: Historic Screen intends to incorporate elements of the 'Sustainability Spine' into its landscape design.



Alignment with EWU Climate Resiliency Landscape Master Plan

2.4 SUMMARY OF NEEDS TO SOLVE THE PROBLEM

There are three key components necessary to solve this problem.

1. To best support EWU students with mental health, wellness, and accommodation services, the critical student affairs services such as Counseling and Wellness Services and Student Accommodations and Support Services should be consolidated and collocated at the campus core.

2. To provide quality learning outcomes and grow the region's pool of educators and mental health professionals the School of Education and School of Psychology need modern pedagogically appropriate instructional labs, research space, and classrooms to support learning and innovation.

3. To support EWU's decarbonization plan, reduce operational costs, and meet the campus EUI requirements of the Clean Building Performance Standard, this project necessitates the connection to a new all-electric heating system. This newly proposed all-electric ground source heating and cooling system, known as the Geo Eco Plant, will serve as a standalone heating and cooling central utility plant. The Geo Eco Plant will provide energy to multiple buildings on campus, including this project, enabling energy trading between connected buildings and utilizing previously wasted energy. The Geo Eco Plant will also serve as an instructional tool for the campus and local community, showcasing forward-thinking methods for providing heating and cooling to the campus using renewable energy sources.

2.5 PROJECT HISTORY

Martin Hall was constructed in 1935 to house the campus elementary training school. Williamson Hall was constructed in 1967 to house the growing School of Education. Martin Hall underwent an intensive interior renovation in 1980 to create specialized lab spaces for the School of Psychology. Williamson Hall has never been fully renovated.

2023-2025 Biennium - Predesign Funding Request
2007-2009 Biennium - Predesign Funding Request

Martin Williamson Hall Exterior Connection

Martin Williamson Hall Interior Connection

Martin Hall 1960

SECTION 3

PROGRAM ANALYSIS

3.0 ANALYSIS OF ALTERNATIVES

3.1 ALTERNATIVES CONSIDERED:

The following offers additional descriptions of the three alternatives considered for this project

3.1.1 ALTERNATIVE A: NO ACTION

A No Action alternative was considered but would involve a number of limitations and negative outcomes for EWU students, faculty, and the broader regional community.

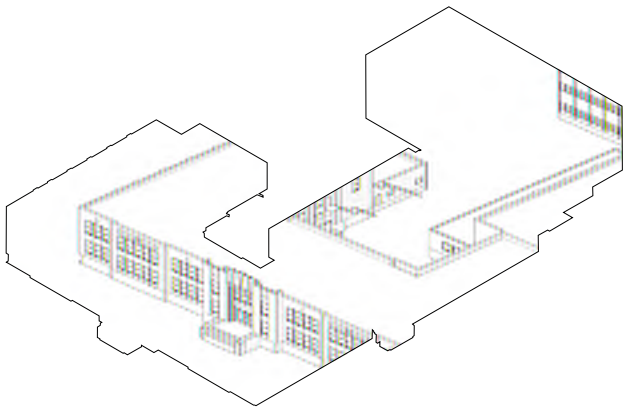
Advantages:

- There are no advantages to a No Action alternative.

Disadvantages:

- Inability to offer quality instruction and learning outcomes for Departments of Education and Psychology.
- Limits ability to grow the Education and Psychology programs and in turn the regional pool of educators and trained mental health professionals.
- Further degradation of a historic structure at the heart of EWU's campus.
- High maintenance and operational costs due to outdated and low performing infrastructure.
- The existing inefficient layout with a 54% efficiency factor remains and contributes to wayfinding and safety issues with many internal halls and corridors.

Existing Martin-Williamson



KEY

- Demolished Space
- New Space
- Existing Space

3.1.2 ALTERNATIVE B: RENOVATION & REPLACEMENT

The Renovation and Replacement alternative suggests a substantial renovation of Martin Hall, including 58,700 sf, along with the replacement of Williamson Hall with a 74,300 sf addition, resulting in a total area of 133,300 sf. The current limitations of the building's size and structural systems make it impossible to accommodate adequately sized and accessible classrooms, necessitating a significant expansion. The existing building's layout and condition are obsolete and require full replacement. Additionally, existing conditions do not support modern teaching methods, inclusivity, or student well-being. Given these considerations, a comprehensive renovation of the existing building and the addition is necessary.

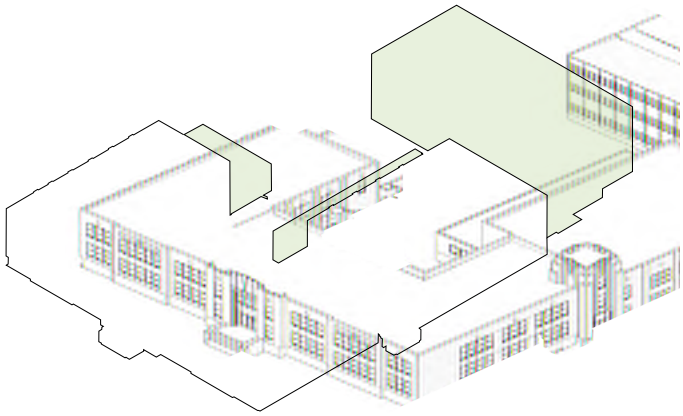
Advantages:

- Retains the historic character of Martin Hall.
- Retains a portion of the embodied carbon of Martin Hall's concrete structure.
- Can redefine the sense of welcome and building character that faces the campus mall.

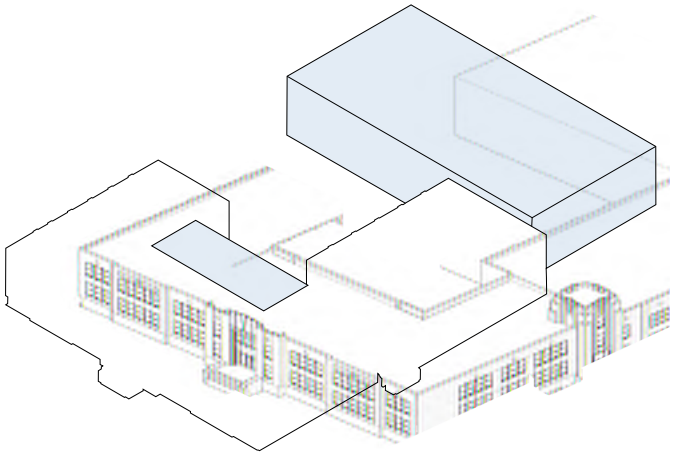
Disadvantages:

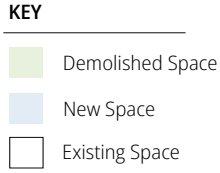
- Requires the demolition and replacement of Williamson Hall.
- Results in minimal long-term adaptability in renovated Martin Hall due to size and spacing of structural system.
- Requires about 9,000 gross square feet more to accommodate the baseline assignable program spaces due to structural grid inefficiencies.
- Larger classroom spaces would be in the new addition retaining limitations to the configuration of spaces in Martin Hall.
- Student support services, such as Counseling and Wellness Services and Student Accommodations and Support Services, remaining in Martin Hall will be either segmented or spread inefficiently along narrow portions of the building due to structural limitations.
- Maintains a mostly enclosed building courtyard with limited visibility and access by the greater EWU campus.
- Segmented and choppy program organization.
- Results in reduced operational efficiency at the renovated portion of the building due to limited envelope improvements, low floor-to-floor height, and inefficient program layout.

Demolished Area Shown in Green



New Space Shown in Blue





3.1.3 ALTERNATIVE C: HISTORIC SCREEN (PREFERRED ALTERNATIVE)

The Historic Screen alternative suggests preserving two of Martin Hall's historic facades and replacing much of the structure with an adaptable and efficient 124,000 sf building beyond.

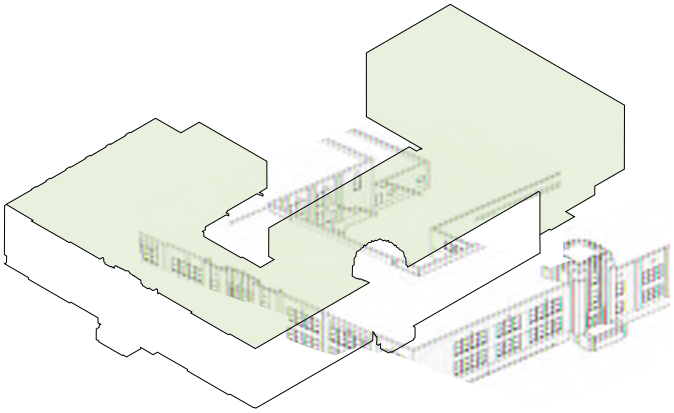
Advantages:

- Retains the historic character of Martin Hall's signature facades.
- Redefine the sense of welcoming and character that faces the campus mall.
- Implements a new structural system that supports long-term adaptability of the building.
- Results in a more cohesive program organization to improve access, wayfinding, and circulation.
- Student support services, such as Counseling and Wellness Services and Student Accommodations and Support Services, can be collocated in an area of the building that supports student access and functionality within the suite.
- Defines outdoor spaces that improve access and use, engage the surrounding campus, and reduce safety and security concerns.
- Results in better operational performance due to a primarily new envelope and more efficient plan and program organization.

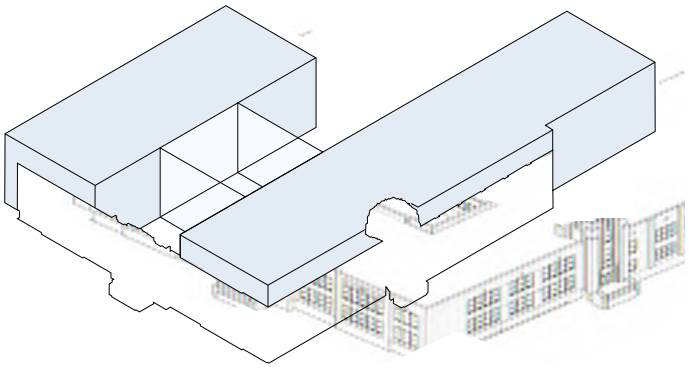
Disadvantages:

- Requires the demolition of the majority of Martin Williamson Hall.
- Lost embodied carbon in the demolition of the existing structural systems and building envelope.
- Requires temporary support to preserve the historic facades during construction and demolition.

Demolished Area Shown in Green



New Space Shown in Blue



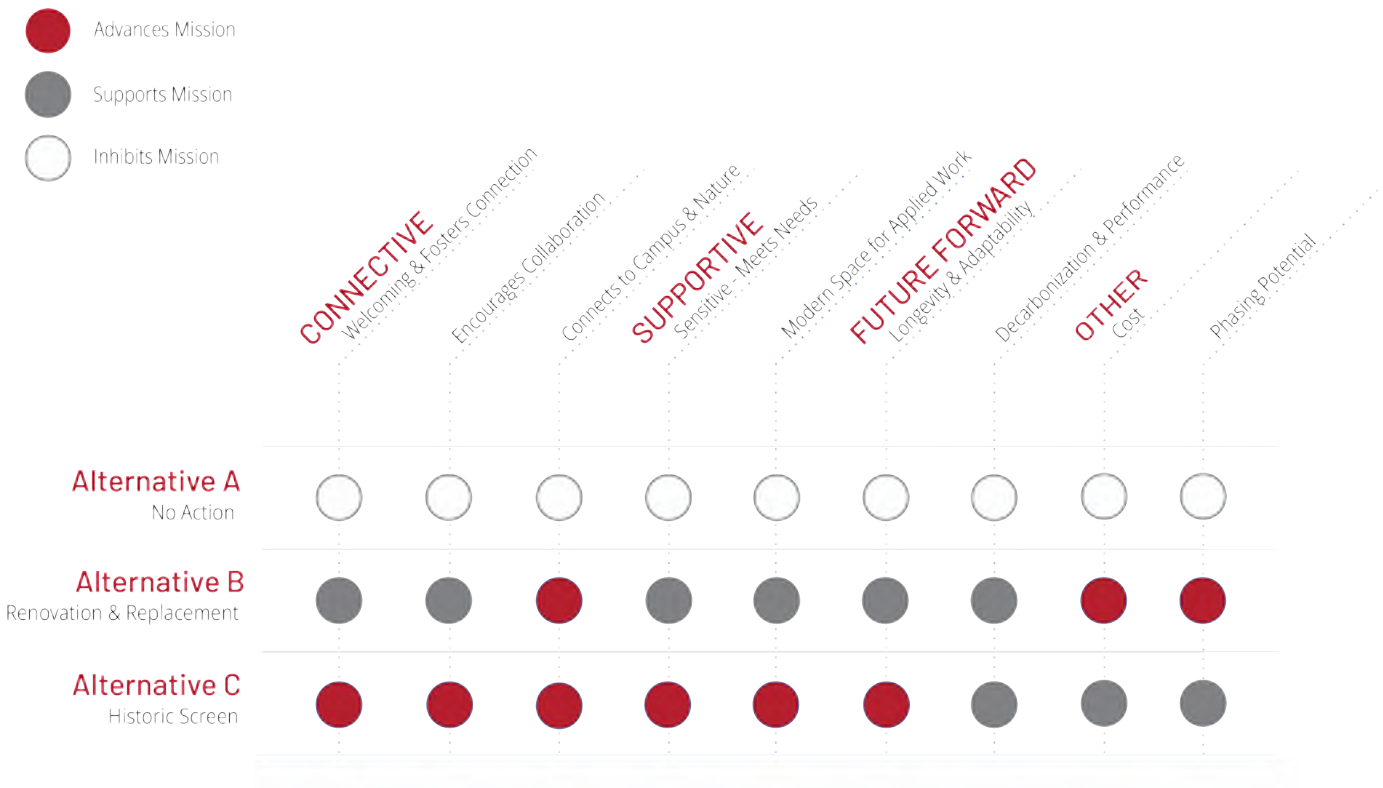
KEY

- Demolished Space
- New Space
- Existing Space

3.1.4 PREFERRED ALTERNATIVE & WHY

Alternative C: Historic Screen has been designated as the preferred option by the Pre-design Committee. This approach aligns most closely with EWU's institutional strategic goals, while effectively addressing the project Guiding Principles and meeting the diverse needs of the academic and student service programs.

The matrix provided below served as a valuable tool for the Pre-design Committee, facilitating interactive discussions and comparative analysis of the alternatives against the established Guiding Principles and other pertinent factors. Notably, Alternative C: Historic Screen emerged as the standout choice across most categories, affirming its status as the preferred alternative for the project.



3.2 COST ESTIMATE FOR EACH ALTERNATIVE

3.2.1 ESTIMATE OVERVIEW

Cost Estimates were performed for each of the two new construction options. All of the options used the same general assumptions including the delivery type, construction materials, and building systems. The estimates also used the same program areas and assignable square footages. The differences in cost reflect the variations in overall building efficiency and the different amounts of building envelope required by each layout option.

			Preferred Option
	Ownership Option 1	Ownership Option 2	Ownership Option 3
	No action	Reno & Replace	Historic Screen
ASF	49,275	87,062	87,062
GSF	91,500	133,000	124,375
Efficiency	54%	65%	70%
Construction MACC	0	83,938,751	90,603,907
Unescalated Project Cost	**0**	**122,605,913**	**133,044,991**

3.2.2 LCCM

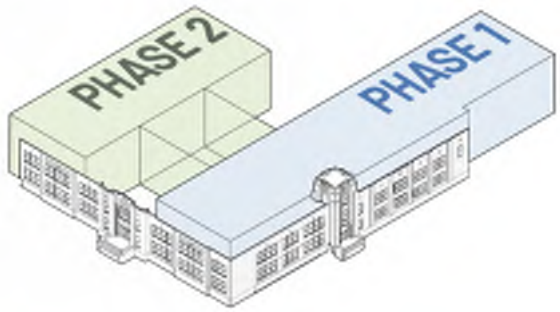
Each of the construction alternatives were analyzed using the Office of Financial Management (OFM) Life Cycle Cost Model (LCCM). The No Action alternative was not studied as it will not meet the university's needs as outlined above. As part of the analysis, energy modeling was performed to understand the energy efficiency of each layout along with the programmatic efficiency.

			Prefered Option
	Ownership Option 1	Ownership Option 2	Ownership Option 3
	No action	Reno & Replace	Historic Screen
Construction MACC	$0	$83,938,751	$90,603,907
Unescalated Total Project Cost	$0	$122,605,913	$133,044,991
Annual Energy Cost	$79,605	$89,110	$58,456
30 Year Net Present Value	$105,789,331	$201,722,945	$210,065,797
50 Year Net Present Value	$168,770,287	$291,065,004	$294,931,694
LCCM Ranking	**1**	**2**	**3**

3.3 SCHEDULE ESTIMATE

Alternates B and C would have the same anticipated project schedule as outlined below. A full milestone schedule is included in Section 4.

Project Phase	Date of Completion
Predesign	June-24
Schematic Design	April-26
Design Development	November-26
Construction Documents	June-27
Phase 1 - Bid/ Award/ Contracting	July-27
Phase 1 - Construction Start	August-27
Phase 1 - Construction Mid Point	June-28
Phase 1 - Substantial Completion	May-29
Phase 1 - Final Completion	June-29
Phase 2 - Bid/ Award/ Contracting	July-29
Phase 2 - Construction Start	August-29
Phase 2 - Construction Mid Point	June-30
Phase 2 - Substantial Completion	May-31
Phase 2 - Final Completion	June-31



Phasing Diagram

SECTION 4

DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

4.1 DESCRIPTION OF PREFERRED ALTERNATIVE

The following offers a detailed analysis of the preferred alternative regarding nature of space, occupancy numbers, basic configuration, and space needs.

4.1.1 NATURE OF SPACE

Martin Williamson Hall will support four distinct entities for EWU, including two academic departments and two student support services programs. The entities to be housed in the building are the School of Education, School of Psychology, Counseling and Wellness Services, and Student Accommodations and Support Services. To support these four separate entities, the building will require a diverse array of counseling, assessment, instructional, research, administrative, office, storage, and student space.

School of Education

The School of Education prepares student-centered educators to be professionals, leaders, scholars, and practitioners to support the rural communities of the region.

- Center for Rural Education Effectiveness - NEW: EWU is in the planning stage of becoming a rural education hub which includes devoted space for education and technology to reach remote districts. (Aligns with RCW 28B.10.033.1.b.i)
- Continuing Education Programs: To maintain certification, educators are required to complete continuing education credits throughout their career. EWU offers Professional and Continuing Education opportunities for either professional development or personal enrichment through clock hours, professional certifications, and continuing education units.
- Field Experience: Coordinates school-based field experiences and full-time student teaching internship placements for all teacher candidates in the EWU School of Education.

To attract teaching candidates in these high-need areas, EWU must fulfill the Professional Educators Standards Board Domain 7, which states that "Providers ensure that programs have adequate resources, facilities, and governance structures to enable effective administration and fiscal sustainability." Specifically, 7.3 addresses three components of adequate facilities which include having necessary classrooms, lab and office spaces, and current technology.

School of Psychology

The School of Psychology offers programs that are critical and necessary for the region, serving to address shortages in mental health and school service provision, and providing important applied research. EWU's graduate and undergraduate programs directly support and provide a pipeline to support these three regional areas of need. In addition to academic offerings, existing and emerging curricular initiatives include the following:

- Autism Drop-In Center: Resource for students identified with autism spectrum disorder.
- Training Clinic - NEW: Providing effective and affordable mental health services to the community and a site to train doctoral students in clinical psychology programs.
- Assessment Program: To support the evaluation, identification, and documentation needs of students with suspected learning disabilities, neurocognitive disorders, and ADHD.
- Sports Psychology Services

Currently Martin Williamson Hall is a barrier to effective education and learning for the School of Education and School of Psychology. Reconfigured spaces equipped with modern infrastructure systems and technology will make it possible for the programs to not only attract more students but offer improved learning outcomes and ultimately better educational outcomes to support regional needs in educators and mental health professionals.

Counseling & Wellness Services

Counseling & Wellness Services provides EWU students with an array of initiatives that support their mental, emotional, and physical wellbeing. Below is a condensed list of some of the existing and emerging offerings:

- Eagles for Recovery: A collegiate program for EWU students who are in recovery, thinking about recovery, and those who want to participate as recovery allies. The program provides support and help navigating recovery while being a student at EWU.
- "Let's Talk" Events - NEW: Counselors meet students where they are to offer no barrier consultations. Two that are a high priority for the counseling center include the Veteran's Resource Center and CAMP (College Assistance Migrant Program) which serve students that underutilize counseling services.
- H.E.A.R.T Workshops (Healing, Encouraging, and Rising Together) - NEW: A workshop series tailored for students of color who are looking for a supportive, inclusive, and safe space to discuss daily stressors and lived experiences.
- Food Pantry: This year the Food Pantry has seen an 8% increase, serving 615 students each month.
- TREE (Trauma Recovery Education at Eastern): Provides planned university response for unexpected tragic events that gives structure, information, and a space to acknowledge what happened. Offering students, faculty, and staff a resource to turn to when they are feeling overwhelmed after an event.
- Basic Needs Office Hours & Resource Center
- Mental Health First Aid Courses
- Sexual Health Education and Disease Prevention & Resources

Over the course of the 2022-2023 regular academic year, the Counseling office had 2,134 attended appointments, which averages 711 appointments each quarter that does not include no-shows or canceled appointments. Thus far in 2024, counselors have helped 115 students assessed as being at academic risk, have held 113 outreach events, and have held appointments with 77 clients assessed as having some level of suicidal risk.

Example of C&WS Campus Outreach Events

According to the American Foundation of Suicide Prevention suicide is the second leading cause of death for ages 10-24 in Washington state. According to federal guidelines 83% of communities in Washington did not have enough mental health providers to serve residents in 2023. These are staggering statistics that demonstrate how crucial it is to improve access to mental health services for students enrolled in postsecondary institutions.

Student Accommodations & Support Services

Student Accommodations & Support Services is a combination of the Student Care Team and Disability Support Services that serves students who may be struggling with personal challenges and/or obstacles.

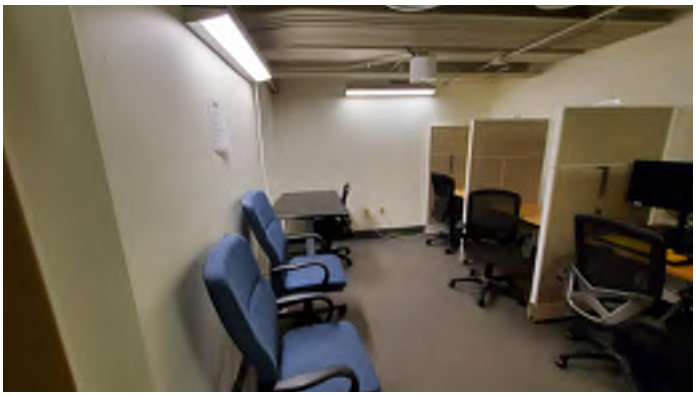
- Student Emergency Fund (SEF): Provides limited, one-time, financial assistance to students unable to meet immediate, essential expenses because of temporary emergencies.
- Passport to Careers Program: Helps former foster youth and unaccompanied homeless youth succeed in college by connecting them to resources, peer mentoring, study space, peer counseling, assistance with FAFSA, communication with faculty, transitioning to the college environment, and support while living on campus.
- Assistive and Adaptive Technology
- Proctored Testing Accommodations
- Medical Accommodations
- Religious Accommodations

Over the last 5 years, SASS has averaged a 147% increase in cases per year. In the 2022-2023 academic year, Support Services managed 1205 cases requiring wrap-around care and proctored 250 exams. Accommodations staff averages serving 750 students per term. In the last year, the Passport to Careers Program has increased enrollment by 150%.

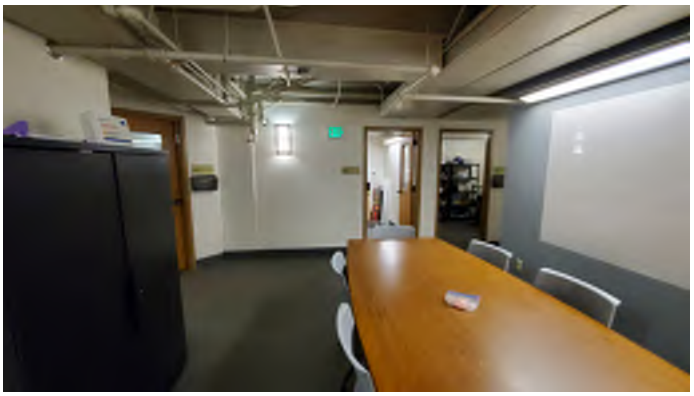
In the 2022-2023 academic year, Washington State legislature made significant investment in student success initiatives at EWU to help ensure that students achieve degree completion. Over the last several years EWU has implemented a total intake model for academic advising and developed a coordinated care network that is designed to:

1. Maximize collaboration of various student support services.
2. Create wraparound care that helps students navigate and overcome social, financial, and/or health obstacles that delay or prevent the successful completion of their degree.
3. Provide holistic care that helps meet the challenge of increasing mental health concerns on college campuses.

Existing SASS Waiting Room



Existing SASS Testing Room



Existing SASS Meeting Space

Currently student support services are spread across multiple buildings on campus and in locations with low visibility and lacking direct access. Collocating Counseling and Wellness Services and Student Accommodations and Support Services will improve collaboration of the various student support services and create a central and convenient location for students to get wrap-around support.

4.1.2 OCCUPANCY NUMBERS

Martin Williamson Hall will be the primary building for two of five programs in the College of Professional Programs: the School of Education and the School of Psychology. The building will supports all students, faculty, and staff in the School of Education and School of Psychology through use of its instructional labs, classrooms, student spaces, offices, administratives spaces, and more.

Martin Williamson Hall will also house two of EWU's largest student services programs. Counseling and Wellness Services currently averages 711 appointments each quarter, a number that continues to increase each year. Student Accomodations and Support Services managed 1205 cases last year, proctored 250 exams, and assists an average of 750 students with accomodations each term - all numbers anticipacted to continue increasing.

4.1.3 PROGRAM SPACE NEEDS

The building gross square footage is 124,375 gross square feet with a net assignable area of 87,062 square feet. The following is a breakdown of the assignable building areas:
The program space list on the following pages contains a comprehensive breakdown of each space and its associated square footage. The quantities, areas, and supporting information therein were developed through a collaborative process including representatives from the departments and programs to be housed in the building and campus leadership in sustainability, planning, academics, and finance.

Department	Proposed SF
1.0 Psychology	13,305
2.0 Education	12,300
3.0 Counseling & Wellness Services	8,515
4.0 Student Accomodations & Support Services	4,860
5.0 Shared	33,825
6.0 Building Operations	14,257
Assignable Building Area (ASF)	**87,062**
Efficiency Factor 70%	**37,312**
Gross Building Area (GSF)	**124,375**
Existing Martin Williamson Gross Area	**91,500**

EWU Martin Williamson Predesign
DATE: May 14, 2024

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
SCHOOL OF PSYCHOLOGY (PSYCH)					
	RESEARCH & INSTRUCTIONAL LAB				
1.1	Research Suite - 6 pod	varies	1	800	800
1.2	Research Suite - 4 pod	varies	1	530	530
1.3	Research Lab	2	8	120	960
1.5	Play Therapy / Group Therapy / Autism Center	20	1	600	600
1.7	Research Assistant Area	6	1	200	200
	Subtotal				**3,090**
	TRAINING CLINIC				
1.9	Reception	1	1	180	180
1.10	Waiting Area	10	1	300	300
1.4	Observation Suite	varies	5	420	2,100
1.12	Group Room	20	1	620	620
1.13	Work Area	4	1	240	240
1.14	Toilet Room	1	1	85	85
1.15	Storage	-	1	200	200
	Subtotal				**3,725**
	OFFICE & ADMINISTRATION				
1.16	Main Office Entry	1	1	250	250
7.2	Offices - Chair/Director	1	5	200	1,000
7.1	Offices	1	35	120	4,200
7.3	Quarterly Faculty/Adjunct	2	1	120	120
1.21	Office - Psi Chi	2	1	120	120
5.14 / 5.15	Break / Work Room	-	1	400	400
1.22	Storage - Testing	-	1	400	400
	Subtotal				**6,490**
	Subtotal				**13,305**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
SCHOOL OF EDUCATION (ED)					
	INSTRUCTIONAL LAB				
2.1	Science Education Lab	24	2	1,200	2,400
2.2	Literacy Library Lab	25	1	1,200	1,200
2.6	Sci Ed Prep & Storage	-	1	250	250
	Subtotal				**3,850**
	FIELD EXPERIENCE PROGRAM				
7.1	Offices	1	4	120	480
2.8	Open Workstations	8	1	360	360
	Subtotal				**840**
	OFFICE & ADMINISTRATION				
2.14	Main Office Entry	1	1	200	200
7.2	Offices - Chair/Director	1	1	200	200
7.1	Offices	1	41	120	4,920
7.3	Quarterly Faculty/Adjunct	2	1	120	120
2.12	Clothing Closet	-	1	500	500
5.13	Meeting Room	8	1	250	250
5.14	Break Room	16	1	560	560
5.15	Work Room	3	1	460	460
2.13	Storage	-	1	400	400
	Subtotal				**7,610**
	Subtotal				**12,300**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
COUNSELING & WELLNESS SERVICES (C&WS)					
	COUNSELING				
3.1	Counseling Reception	2	1	600	580
3.2	Counseling Waiting Area	8	1	320	320
3.3	Group Room	12	2	550	1,100
7.4	Offices - Counselor	2	9	200	1,800
3.5	Trainee Room	3	3	145	435
3.6	Work Area - Trainee	3	1	240	240
3.7	Bio Feedback Room	2	1	200	200
3.8	Quiet Room	1	1	100	100
3.9	Zoom Room	1	1	100	100
3.10	Library	-	1	100	100
3.11	Storage - Controlled	-	1	150	150
	Subtotal				**5,125**
	WELLNESS				
7.2	Offices - Director	-	1	200	200
7.1	Offices	-	4	120	480
3.14	Storage		1	560	560
	Subtotal				**1,240**
	EAGLES FOR RECOVERY PROGRAM				
3.15	Student Lounge	16	1	650	650
3.16	Office - Coach	1	1	200	200
3.17	Peer Health Educators	6	1	500	500
	Subtotal				**1,350**
	SHARED SUPPORT				
3.18	Toilet Room	1	1	80	80
3.19	Work Room	3	1	360	360
3.2	Break Room	12	1	360	360
	Subtotal				**800**
	Subtotal				**8,515**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
STUDENT ACCOMODATIONS & SUPPORT SERVICES (SASS)					
4.1	Reception & Waiting Area	4	1	400	400
4.2	Student Group Space / Living Room	20	1	800	800
7.4	Offices - Counselor	1	8	200	1,600
7.1	Offices	1	8	120	960
4.5	Testing Room	8	1	400	400
4.6	Testing Room - Individual	1	2	100	200
4.7	Storage	-	1	300	300
4.8	Student Break Area	-	1	200	200
	Subtotal				**4,860**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
SHARED SPACES					
5.1	Commons / Atrium	varies	1	1,600	1,600
5.18	Collaboration Hub - 1st Floor	varies	1	2,000	2,000
5.19	Collaboration Hub - 2nd Floor	varies	1	2,000	2,000
5.2	Collaboration Hub - 3rd Floor	varies	1	2,000	2,000
5.3	Breakout Space	8	3	200	600
5.5	Lecture Hall	240	1	5,000	5,000
5.6	Lecture Hall	80	2	1,600	3,200
5.16	Classroom	60	4	2,040	8,160
5.2	Multi-Use Classroom	40	1	1,350	1,350
5.7	Classroom	25	4	1,100	4,400
5.10	Seminar Room	24	2	720	1,440
5.17	Seminar Room	16	1	500	500
5.11	Meeting Room	40	1	1,575	1,575
	Subtotal				**33,825**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
BUILDING OPERATIONS					
6.1	Inclusive Restroom	-	5	800	4,000
6.2	Single User Restroom	1	4	150	600
6.3	Shower Room	1	1	150	150
6.4	New Mother's Room	1	1	100	100
6.5	Mail Room	-	1	150	150
6.6	Custodial - Large	-	2	250	500
6.6	Custodial - Small	-	2	120	240
6.7	Mechanical Room	-	1	6,917	6,917
6.8	Electrical Room	-	5	200	1,000
6.9	Telecom Room	-	5	120	600
	Subtotal				**14,257**

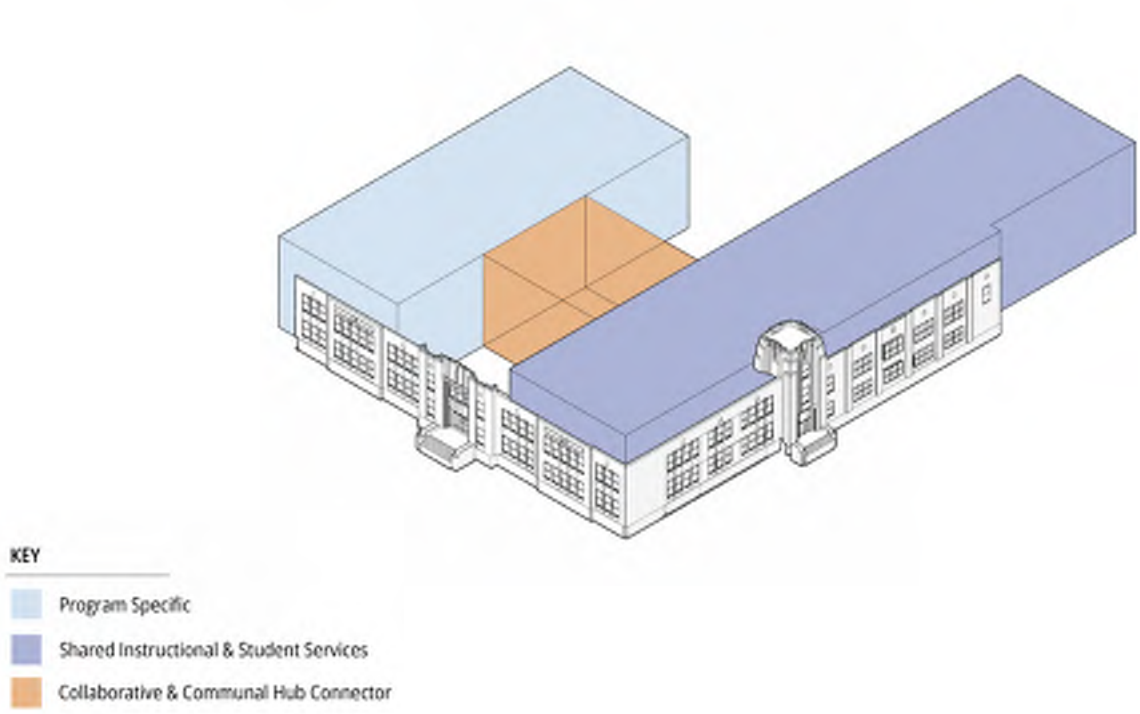
4.1.4 BUILDING CONFIGURATION

Martin Williamson Hall is conceived as a thoughtful and intensive renovation project, carefully integrating new elements while preserving the historic character of the northeast and southeast facades from its 1935 origins. Behind this historic screen, the project will introduce three new components: two bars and a central hub. These additions, designed as three-story structures using a combination of steel and mass timber, are strategically planned to meet the project's functional requirements and aspirational goals while celebrating a piece of EWU's campus architectural heritage.

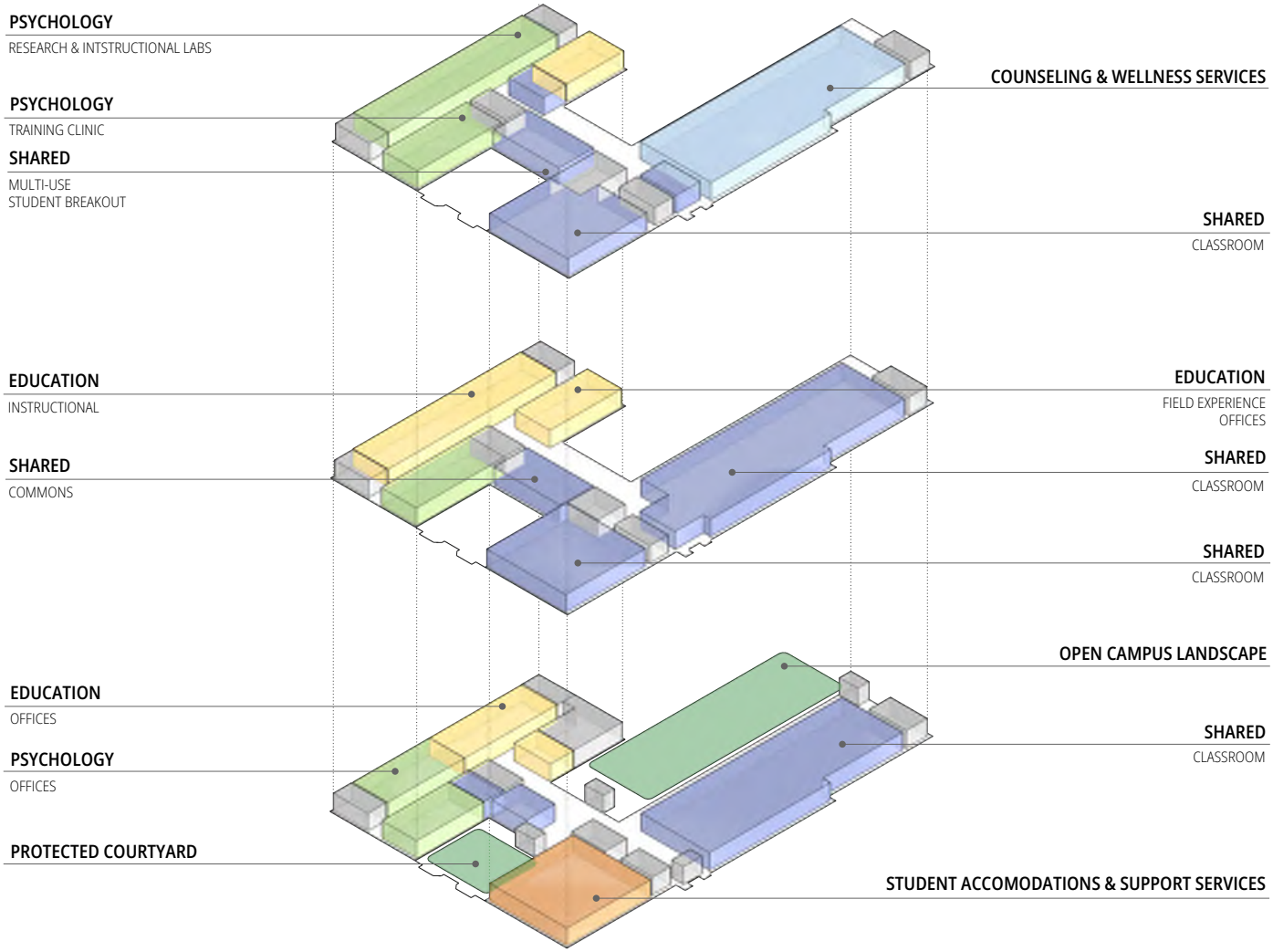
The first bar, closest to the campus core, will contain student support services and shared instructional spaces. This layout will improve circulation within the building and reduce disruptions near department-specific instructional labs and offices. Student Accommodations and Support Services are conveniently located on the first level for easy access, encouraging student engagement, and to reduce stigma around accessing these resources by making them convenient and welcoming. Shared instructional spaces are spread across the first and second levels. Counseling and Wellness Services are placed on the third level to maintain a prominent central campus location while providing students with privacy when seeking support for sensitive matters.

The second bar to the south will contain department-specific instructional labs, offices, administrative areas, and the new training clinic. With lower foot traffic, it aims to minimize disruptions to hands-on learning in the labs and promote interaction between the Department of Education and Department of Psychology through collocation of office neighborhoods.

The two bars converge at a central hub of shared meeting and student-centered spaces, providing a venue for collaboration among departments, faculty, and students. This central area will include Student Breakout spaces, a versatile Commons for open student use and departmental events, and flexible meeting spaces. In addition to facilitating connections between people, this hub provides easy access to two outdoor areas that act as an extension of the communal space within: a protected courtyard and an open campus landscape.



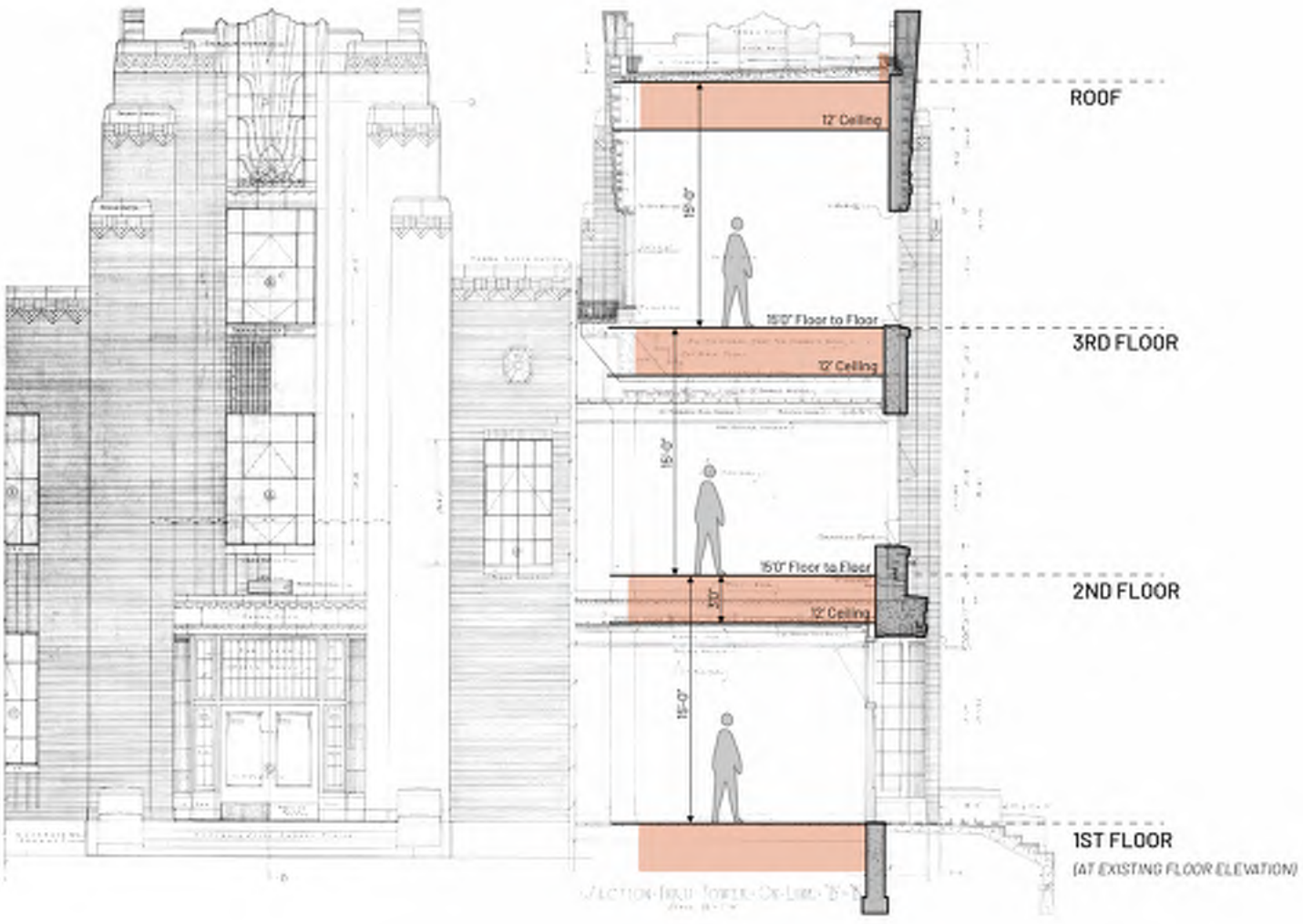
Program Overview



Program Axonometric

The original 1935 Martin Hall was built as a two-story structure with a low 13'-6" floor-to-floor height. The project will introduce new three-story components with a higher 15'-0" floor to floor height to accommodate modern building infrastructure.

These new three-story volumes will intersect the historic screen on the northeast and southeast facades.
These intersections will be carefully crafted to ensure the historic character is preserved while maintaining the functionality within the building.



Section through Tower

4.2 SITE ANALYSIS

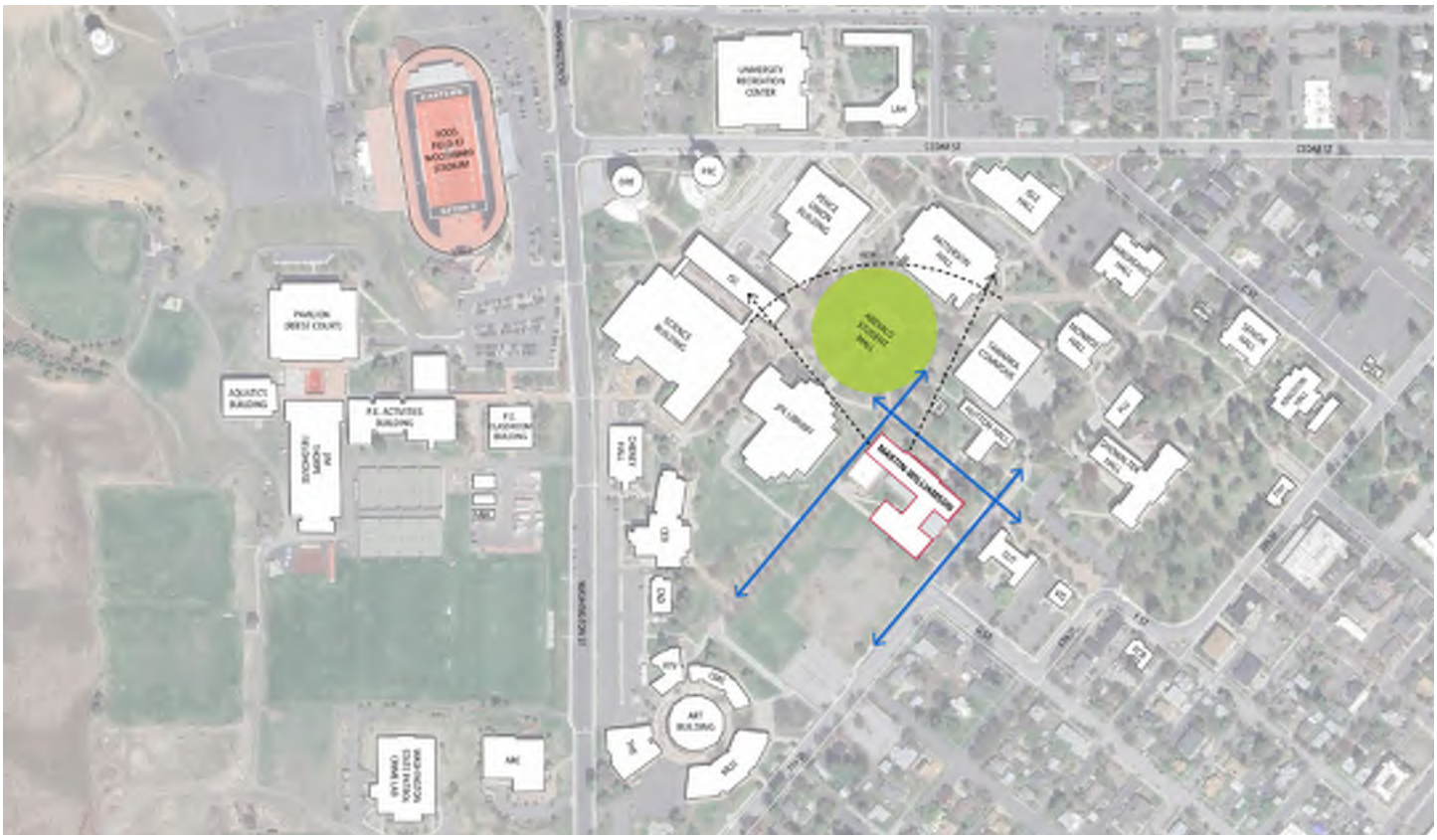
The following offers a detailed analysis of the project site.

4.2.1 LOCATION

The proposed site, and only location considered for the project, was the existing location of Martin Williamson Hall. Its present location is not only steeped in historical significance, which EWU is committed to preserving, but is also strategically situated near the center of campus. This central position enhances accessibility to the various student services programs housed within for the broader EWU community. Additionally, its proximity to the historic One Room School House fosters a meaningful connection between the Department of Education and EWU's beginnings in 1890 as the first institution in Washington for teacher instruction.

Arevalo Student Mall

One Room School House



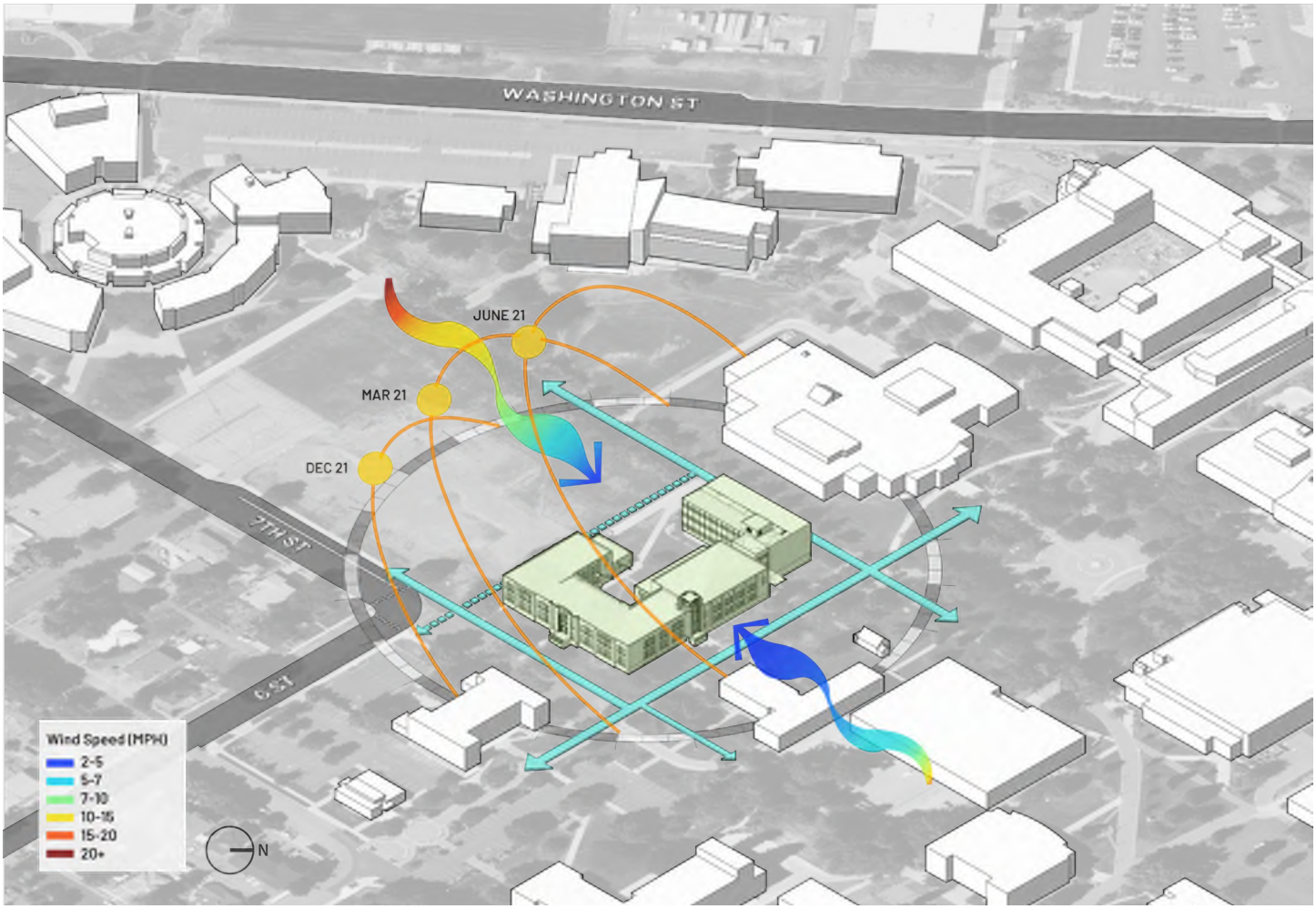
Campus Context Site Map

4.2.2 SITE STUDIES

The university is in the process of procuring the following site studies, which are scheduled to be completed during the Schematic Design phase:

- Environmental Survey Assessment
- Site Topographical & Utility Survey
- Geo Technical Survey
- Traffic Impact Survey

Cheney, Washington, experiences a diverse range of weather throughout the year and features an average of 220-250 days of sun with strong prevailing winds coming from the west and southwest primarily. The existing site has excellent solar access to the south for the proposed photovoltaic system. The building and landscape features will be designed to help shelter entries and outdoor space from inclement weather and wind.



Solar & Wind Study of Existing Martin Williamson

4.2.3 BUILDING AND SITE RELATIONSHIP

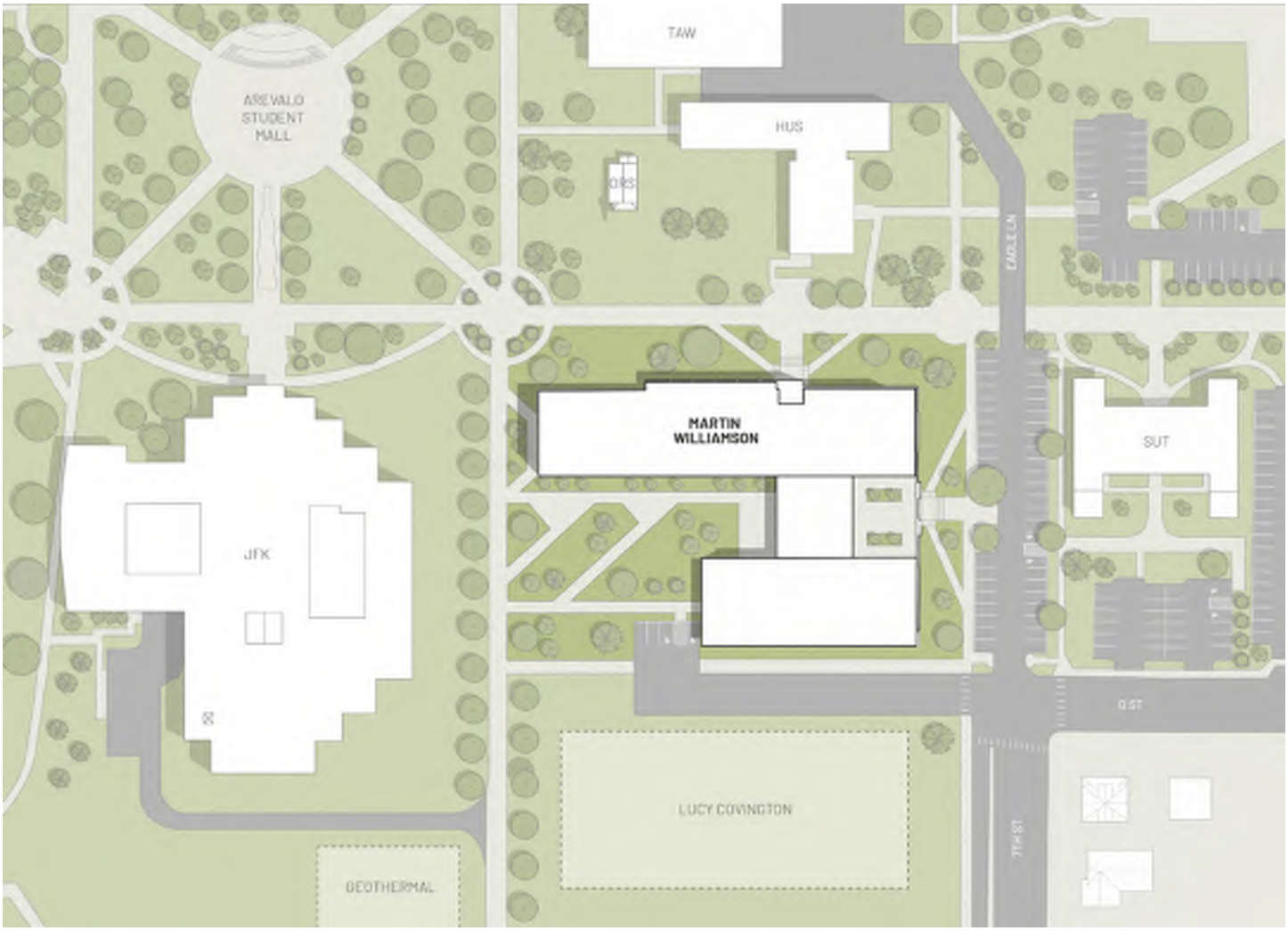
The proposed renovation of Martin Williamson Hall improves key site relationships while retaining significant historical features of Martin Hall.

Preserved Existing Relationships:

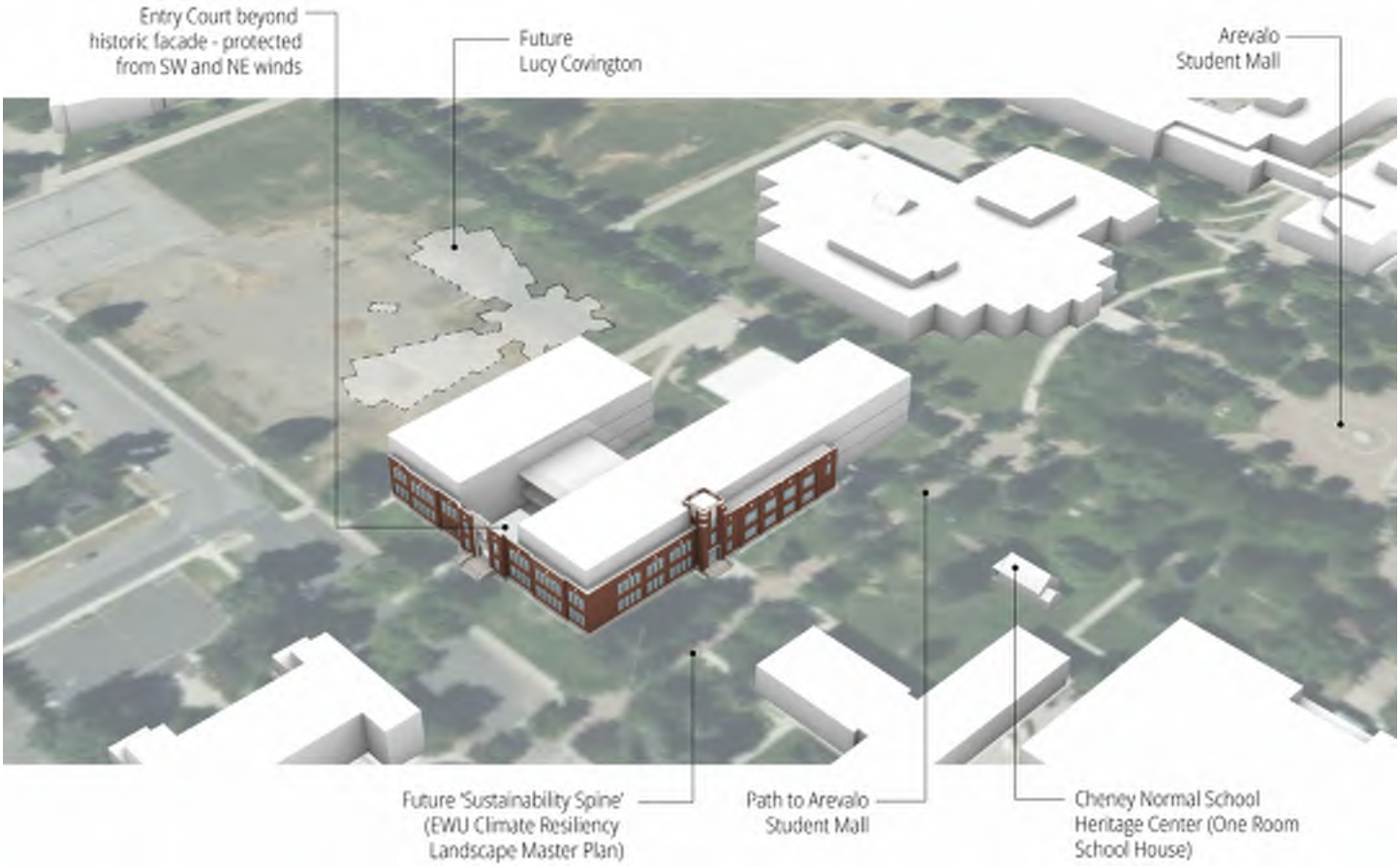
- The renovation retains the historic presence and connection to the central campus mall.
- This location retains the proximity and visual connection between the Department of Education and the historic One Room School House.
- The renovation retains two prominent ornate historic Martin Hall entries at the northeast and southeast facades.

New Site Relationships:

- The renovation improves the sense of entry and welcome at the prominent northwest building corner addressing the central campus mall.
- Safety and security in landscape and outdoor spaces is improved through a more open and visible connection to outdoor spaces.
- The preferred alternative offers a new outdoor experience through a courtyard at the southeast historic entry that is protected from the prevailing winds and harsh solar exposure during warm weather months.
- The renovation improves visibility to and from campus core toward the south which welcomes and draws activity to the campus core.



Proposed Site Plan



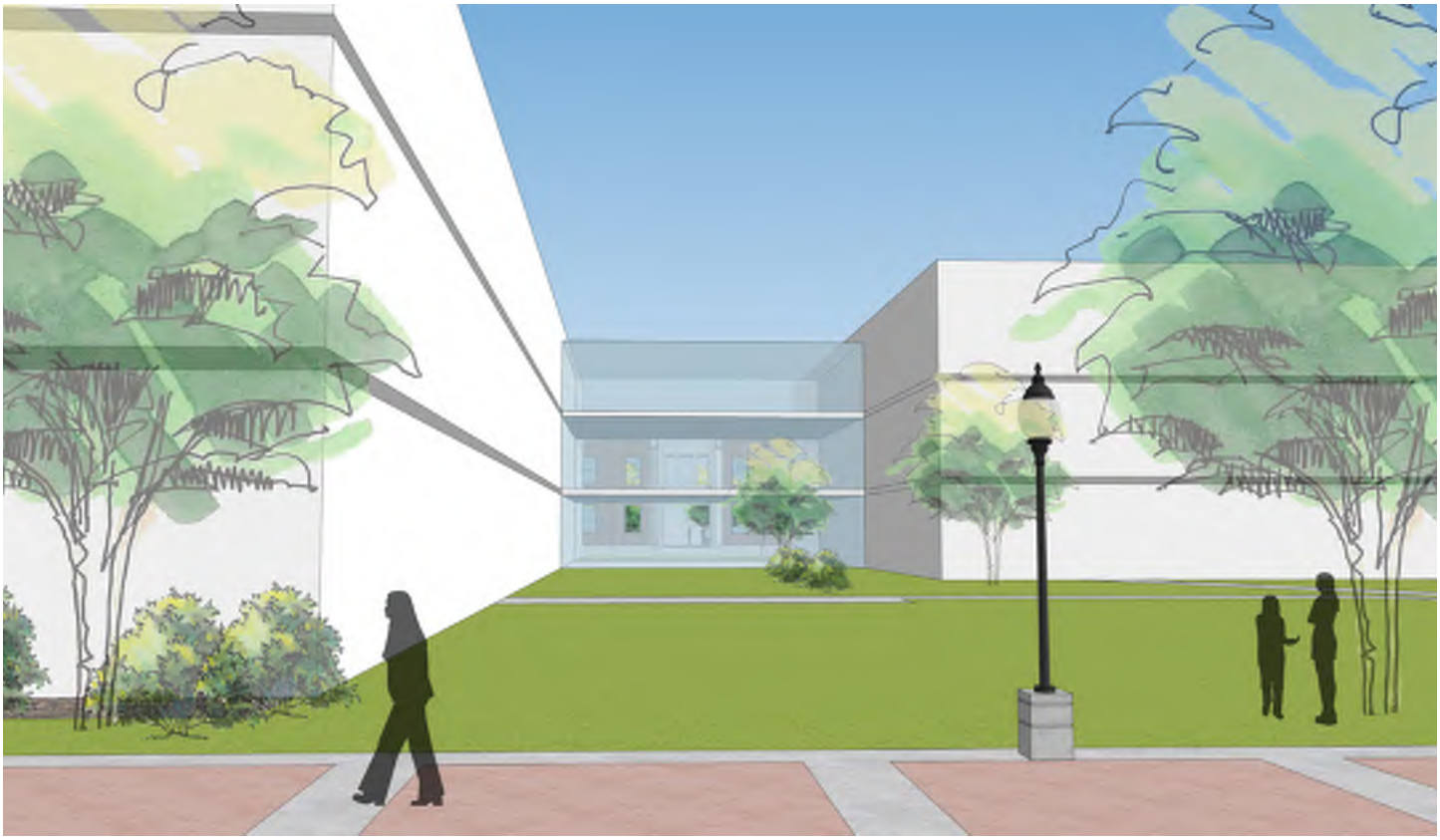
Massing Diagram

Northeast Corner - Approach from Visitor Center

Northwest Corner - Approach from Student Mall

Southwest Corner - Approach from Computing & Engineering Building

Southeast Corner - Approach from Parking



Campus Courtyard - View Through Glass Gasket

Entry Courtyard - View Through Historic Facade

4.2.4 WATER RIGHTS AND AVAILABILITY

The buildings are within the EWU campus and are served by the University's private water system. Eastern Washington University (EWU) provides drinking water from two drilled wells, both of which draw from a groundwater aquifer. Well 1R is located in the Plant Utilities building and can pump up to 450 gallons per minute at a depth of 834 feet. Well 2R produces 900 gallons per minute at a depth of 1145 feet. Chlorination of the campus water supply began in 2010. Since 2016, water from both wells has been routed through a new chlorine building for treatment before being distributed throughout campus via the tower. To ensure the safety of your tap water, backflow assemblies are installed through the campus to protect our water system. Two Cross Connection Control Specialists and three Backflow Assembly Testers, employed by the university, conduct tests on all assemblies annually and perform any necessary repairs or replacements. A report is submitted to the Department of Health each year.

EWU's water meets or exceeds all standards set for quality and safety and is committed to providing safe, high-quality water. EWU's annual drinking water report can be found at https://inside.ewu.edu/facilities/water/.

Extension of campus water mains is not expected, new connections or reconnection to existing campus infrastructure will provide fire and domestic water to the new building.

With the use of modern, low flow plumbing fixtures in the new buildings, a reduction in water use may be expected.

Sanitary sewer connections from the building will be to campus sewer mains, replacing the existing connections.

4.2.5 STORM WATER REQUIREMENTS

The University is within the City of Cheney, which uses the Spokane Regional Stormwater Manual, currently the April 2008 edition, to guide stormwater design. Given the age of these buildings predating any formal storm water design standards, the reconstruction within the approximate footprint, and to the same amount (or less) of impervious area, no extraordinary measures are expected to be needed for mitigation. A detention or infiltration system should not be required, see below for a discussion of water collection and reuse.

If new and replaced pollution generating surfaces (typically motor vehicle drives and parking) exceeding 5,000-sf are created as part of this project, a water quality system will be needed to treat the water before it's discharged to the campus storm water system.
The campus has an initiative to collect water from roof areas in winter and store it in cisterns to be use in summer months for irrigation. If desired, a cistern could be constructed under part of the proposed pedestrian plaza at the building. This is not a required program but has been implemented in other recent campus projects.

To obtain LEED storm water points, the project would need to infiltrate or reuse (irrigation) most of the surface water collected from precipitation.

4.2.6 SITE OWNERSHIP, EASEMENTS AND ACQUISITION

The project site is on the Eastern Washington University campus utilizing the existing site. There would be no change of ownership, acquisition, or easements needed.

4.2.7 SETBACK REQUIREMENTS

The project site is totally within the existing campus, it has no frontage on public streets. With the preservation of the historic façade, no effect on setbacks is expected. To the west and south, where new building façades will be constructed, adjacency to campus walks and drives should be reviewed for visibility of pedestrians and drivers.

4.2.8 NEIGHBORHOOD ISSUES (CONSTRUCTION RELATED)

The site is within the Campus and should not directly affect off campus neighbors. If the old Reid school site is used for a construction yard, the opposite side of 7th St. is a residential neighborhood. The potential for temporary disruption, noise, dust, extra vehicular trips, and deliveries is possible. Location of the construction activity to the west and north ends of this lot will help separate the residents from the temporary disturbance.

4.2.9 NEIGHBORHOOD ISSUES (LONG TERM)

When the project is complete, the use will not change, the building will remain an education and administration facility for the university. Vehicular and pedestrian traffic patterns, rates and frequency should remain similar to current conditions.

4.2.10 UTILITY CONNECTIONS

Buried campus owned primary power lines traverse the western boundary and central core of the site. The central core existing lines appear to be in conflict with the planned location of the building. Buried primary service lines will be relocated and extended from the existing campus infrastructure for new services to the building. An existing pad mounted line switch is located in the middle of the site and will require coordination with site landscape to protect in place.

Buried campus communications lines traverse the western boundary and central core of the site. The central core existing active lines appear to be in conflict with the planned location of the building. Buried comm service lines will be relocated and extended from the existing campus infrastructure for services to the building.

All existing utilities to the campus mains are expected to be re-connected, Water, sewer, storm are in individual buried pipe mains under the streets and walks around the site. Reconnection to existing points of service is expected.
A Campus utility tunnel is located west of Williamson, under the drive between this site and the JFK library. These campus utility tunnels usually contain power, communications, steam, and chilled water. All likely have connection from this tunnel to at least the Williamson Building, and likely to both buildings. Reconnection of the new building to these services would be expected from the campus mains in the existing tunnel.

The campus has a central chilled water plant and central steam plant that distributes chilled water, steam, and steam condensate to the buildings on campus through an underground tunnel system.

The campus tunnel system traverses east-to-west immediately northwest of the proposed Lucy Covington project site and should be protected in place. Chilled water will be provided to the building via an extension to the existing tunnel system to the new building. New dedicated 6"Ø chilled water supply and return piping will be routed through the tunnel to the new building.

The building heating and domestic hot water will be provided by a connection to a new campus low temperature heating water (LTHW) system, which will operate at 120°F. The LTHW will be generated by a new open-source ground coupled heat pump heating plant. The plant is being planned as a separate project. Dedicated 6"Ø low temperature hot water piping will be routed to this building via an extension of the tunnel system or utilizing direct buried, insulated, jacketed, and fusion-welded high temperature HDPE SDR-11 pipe.

Site Paving:
Site paving will consist of asphalt and concrete per university standards. Paving will be for new/replaced walks and drives around the new building and to patch utility trenches., in-kind matching existing surfaces.

Asphalt for restored parking areas and new loading/utility yard, assume 6-in of ½-in HMA over 6-in Crushed base.

Concrete walks and plazas around the buildings, 6-in w/ reinforcing. Where needed for fire lane, 8-in thick pavement.

At University direction, some areas of new/replaced paving will have snow melt tubing and connection to campus or building boilers for heat.

Fire Truck Access:
Fire truck access can be provided off the parking lot on the east side, at Eagle Lane and from 7th Street. Per a campus fire improvement study from 2007, the walks to the north and west are scheduled to be widened to 20-ft accommodating fire trucks. There are 4 existing fire hydrants within a 300-foot radius of the proposed building. These hydrants are near the corners of the complex.

Water Supply:
Water mains: Existing Campus water mains are to the west, north and east faces of the buildings, No relocation or extension of existing mains is expected due to this construction.

A single combined fire and domestic water service will be provided to the building from the University system water line. Analysis from the plumbing and fire design will be required to determine the size of the services for the new building.

Water Meter: An in-building water meter will be provided to measure the domestic water use in the new building for the purpose of; reporting trends in building systems consumption required by WA State law, reporting of meeting LEED criteria.

Sanitary Sewer:
All floors of the addition m should be able to discharge waste by gravity to the campus sanitary sewer system located off the south edge of the site. At least one new 6-in connection to this system is anticipated, reuse of existing side sewers may be possible, depending on condition and location relative to the new facility.

Stormwater Treatment and Disposal:
The University's stormwater system drains to the City of Cheney's public storm system. Development of this addition will conform to the City's current surface water development manual which specifies stormwater design standards. The city has adopted the Spokane Regional Stormwater Manual, April 2008, which also governs stormwater design for Spokane County, the City of Spokane, and the City of Spokane Valley.

Storm water collected off new roof areas will not need to be treated for water quality but can be directed to the local campus system. If new and replaced vehicular use pavements exceed 5,000-sf within this project, the water quality treatment facilities will need to be provided for water collected off these surfaces. For small areas this is usually best done before detention. Cartridge filter systems or grass swales may be possible based on available space and locations.

Stormwater flow control system:
Martin Hall dates from 1937, and Williamson from 1966, both buildings predate the writing and adoption of any drainage codes. The water from these roofs flows into the local campus system and into the city storm mains with no flow control. This condition is grandfathered and given that the new building and associated paving will be approximately the same footprint, flow control (detention) is not required.

If LEED or other sustainable practices are desired, several options may be available to obtain stormwater points for the redeveloped site. For LEED points, most of the water needs to be either infiltrated, or re-used within the LEED boundary.

Infiltration
The soils on the EWU campus are typically fine-grained and usually not suitable for infiltration as the sole source of stormwater disposal. Drywells have been used on campus at many of the buildings, overflow from them could be routed to the local storm drains. Verification of local soil infiltration by percolation testing is recommended.

Cistern to collect precipitation for reuse:
Collection and holding water in winter for use later in the year is another possible storm water strategy, one nearby objective is to collect water under the quad from nearby buildings. Setting their new building up for such a system may be possible. Alternatively, a cistern could be constructed below the new plaza, with the possibility of reusing storm water for irrigation or other gray water uses.

Foundation Subdrainage: A footing and slab drainage system will likely be incorporated, and discharge directly into the campus stormwater system. Below slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drainpipes in the free-draining layer will gravity drain to the existing campus storm system.

The existing campus storm system is under the pedestrian plaza north of Martin Hall, and flows east and south to city systems.

Connection to Campus Utility Tunnel:
West of the site, under the brick pedestrian walk, a branch of the campus utility tunnel provides access to many campus utilities, including power, communications, steam, and chilled water. Below grade, the new building will not directly affect the tunnel. Connection/reconnection to these utilities, through the existing points of connection in the tunnel are expected.

Future Geothermal Heating
The campus is developing plans for district heating from deep well geothermal systems. Under a separate project, a network of wells and heat exchangers would be installed nearby and a new low temperature looped pipe network to heat buildings, with low or no carbon footprint.

Depending on the timing of the different projects, partial or full installation of such a system may be warranted in the new Martin-Williamson facility. See mechanical discussion for more detail on such a system.

Gas Distribution:
Natural gas service to the campus is provided to the existing buildings by Avista Utilities, most new and renovated buildings on campus are not being reconnected to natural gas.

4.2.11 POTENTIAL ENVIRONMENTAL IMPACTS

Given that this proposed project is on a developed site, which has been an active part of the EWU campus for nearly 100-years, no environmental impacts are expected.

No mapped wetlands or other water bodies are near this portion of campus.

There are no shorelines near this area.

A SEPA application will be required for this project.

While under construction, the project will need coverage under the State DOE Construction Stormwater General Permit.

4.2.12 PARKING AND ACCESS

There is no significant parking directly associated with either of these buildings, most student parking is clustered around the perimeters of campus, within walking distance of the campus core. About 20 stalls are along the west edge of Eagle Lane, to the east side of Martin Hall. These stalls are not specifically designated for Martin Hall users. Current proposed design does not appear to affect these stalls.

At the south end of Williamson, is a small service/delivery area, with two ADA stalls and a campus service stall. A small dumpster corral is part of this installation.

Allowance for a service area, for deliveries and trash staging should be included in the site design of the new complex.

A location to accommodate the needs of the building, and possibly designed with the potential to be expanded to the old Reid School site when it's redeveloped. A shared service/delivery area would be more economical and use less campus area than separate service/loading/waste facilities for each building.

4.2.13 IMPACT ON SURROUNDINGS DURING CONSTRUCTION

Site Preparation and Excavation:
Demolition will include removal of both buildings and foundations, leaving the façade of Martin Hall on the north and east faces. Existing utilities will be capped at the edge of work and left for reconnection. All demolished materials will be removed from site, reused, recycled or discarded, in appropriate, legal locations. Site preparation for the project will include removal of the existing paving and miscellaneous site features in the work area.

The topsoil and vegetative material will be removed, screened and saved for re-use in revised landscaped areas. The subgrade will be prepared prior to placing structural fill or building foundations, per future geotechnical recommendations. Structural fill will be approved imported material. Native silty or clayey material is not acceptable for use as structural fill and will be hauled off site. Some large trees very near the buildings and future construction will need to be removed to construct the new facility, and for future maintenance access to the façade.

Temporary Sediment and Erosion Control:
During construction, all temporary erosion and sedimentation control systems will be designed and constructed in accordance with the Eastern Washington Regional Stormwater Manual Best Management Practices (BMP's), to protect of site properties as well as minimize the quantity of sediment-laden water from entering the City of Cheney's public storm system. The site will be graded to drain to sediment control ponds or temporary tanks at the site.

Temporary catch basin protection should be installed and maintained on existing and new catch basins to filter sediment-laden water entering the existing storm conveyance system during construction. The size of this project will trigger coverage under the DOE's Construction General Stormwater Permit, with it's record keeping and reporting requirements for quality of water discharged from the construction site.

Temporary Construction Features:
During construction, site access is expected to be from the empty lot south of the Martin-Williamson site, across the former Reid School parcel. This access and other contractor laydown and trailer space will need to be coordinated with ongoing campus activities and circulation needs. Quarry spall work pads on disturbed soils, and silt fencing placed around the downhill portion of the site will further control soils and limit erosion. Soil stockpiles will need to be erosion protected, with plastic sheeting or other approved measures to prevent sediment migration from the site.

Construction Debris:
The contractor will implement BMP's to prevent demolition and construction debris, waste, material, fuel, oil, lubricants, and other fluids from leaving the work areas, or entering the public right of way and the existing storm conveyance system. All waste materials shall be disposed of in appropriate, legal locations. Recycling or reuse of demolished or excess material when appropriate is encouraged.

Temporary Construction Impacts:
Assuming the old Reid School site is used for contractor operations (office trailers, deliveries, staging, laydown, stockpiles, etc.) site access may try to come from the highway, through the town of Cheney, on G or H streets, to campus. This is mostly a residential neighborhood, added large vehicle traffic will be a temporary disturbance to the community. An more desirable alternate path up Washington St. to J/7th Ave. avoids most of the residential area, and runs through the interface between the city and campus areas. Other effects to the surrounding community may be dust which can be mitigated with watering trucks, and temporary ground cover (either straw or mulch) on bare, unworked, soil areas. Fences with fabric panels can help control dust also.
Noise from construction equipment and operations will likely be an issue for both the on and off-campus communities. From demolition through finished building, louder than normal, and sharp, abrupt, noises can be expected. The primary means of noise control will be limiting work hours to normal workdays and hours, as defined by the city.

4.3 CONSISTENCY WITH APPLICABLE LONG-TERM PLANS

Eastern Washington University has plans to revisit their Campus Master Plan starting summer of 2024 and the renovation of Martin Williamson Hall will remain a critical component of their future planning. The Eastern Washington University Comprehensive Master Plan identifies five planning principles that align with the proposed renovation of Martin Williamson. The planning principles and how they are implemented (In Italics) in the design of Martin Williamson are as follows:

PLANNING PRINCIPLES

- Carefully evaluate each project with regard to renovation versus replacement opportunities

Careful consideration was given to the decision of renovation versus replacement of Martin Williamson. Ultimately, to support the mission and areas needed by the programs housed within, preserving the existing building was not feasible. Previous predesign requests to replace the project have not received funding.

- Locate and size all new or replacement buildings to optimize site utilization

The proximity of Martin Williamson in the heart of campus is ideal as 2 or 7 student support services areas (SASS and Counseling and Wellness) are housed within. Additionally it is directly proximate and provides visual connection to the Cheney Normal School Heritage Center (one rooms school house) that represents EWU's beginnings in 1890 as the first institution in Washington for teacher instruction.

- Improve the overall character of the campus with the implementation of each project

Martin Williamson has had multiple renovations over its lifetime and very little historical significance exists except for the facade of Martin Hall. With the complete demo and reuse of the facade, this allows the project to incorporate EWU's current design guidelines and improve the overall character of campus.

- Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries

The campus is only a few blocks from downtown Cheney. The building is designed to provide easy access from both the parking and neighborhoods as well as the campus spine. Green space around the project was maximized to the fullest extent possible.

- Reinforce and improve the overall cohesion of campus, specifically linkages across Washington Street, whenever possible

The existing Martin Williamson building has deep roots in the existing campus fabric. Preservation of the existing facade of Martin Hall was prioritized as part of the design effort to ensure its legacy while still creating an outstanding learning environment that supports students success and reflects the hopes and aspirations of the Programs within and the larger EWU community.

Southeast aerial view of campus Circa 1960

4.4 REGULATORY FACTORS

4.4.1 PERFORMANCE PUBLIC BUILDINGS

High Performance Buildings (Chapter 39.35D RCW)

Eastern Washington University has a proven track dating back to 2008 of designing and constructing high-performance buildings using the LEED rating system. This project will select design consultants who embody EWU's sustainability objectives. This project will be designed, constructed, and certified to the LEED Silver Standard, as a minimum, in accordance with RCW 39.35D. A LEED Checklist, outlining a preliminary approach, has been included in the Appendix. EWU has had a history of achieving LEED silver or higher and will strive to achieve LEED gold on this project.

4.4.2 ZERO ENERGY BUILDINGS

State Efficiency and Environmental Performance (Executive Order 20-01)

The Governor's Executive Order 20-01 mandates high performance buildings for reduction of greenhouse gases, reduction of pollutants from fossil fuels, and the use of clean energy when technically and economically feasible. Eastern Washington University acknowledges that the costs of constructing zero energy or zero energy capable buildings are nearing parity with conventional buildings. Consequently, the university will further progress its building construction endeavors toward this directive, employing life-cycle cost analysis tools to inform decision-making throughout the design process. The life-cycle cost analysis performed as part of this predesign included the evaluation of a net zero building. In studying the use of photovoltaic (PV) solar panels for on-site renewable energy generation, the required area of PV panels exceeded the available roof area and would require additional dedicated site area.

EWU is currently working on a campus Decarbonization Plan, scheduled for completion in 2025. This plan will outline the steps needed to align the campus with House Bill 1390, to decarbonize the existing central heating plant.

4.4.3 GREENHOUSE GAS REDUCTION

4.4.3-1 STATE LIMITS

Greenhouse Gas Emissions Policy (RCW 70A.45.070)

The referenced Revised Code of Washington regarding the greenhouse gas emissions reductions requires all state agencies to reduce greenhouse gas emissions as follows:

i. By 2020 to 1990 levels.
ii. By 2030 to forty-five percent below 1990 levels.
iii. By 2040 to seventy percent below 1990 levels.
iv. By 2050 to ninety-five percent below 1990 levels.

Part of the University's strategy to cut greenhouse gas emissions involves decreasing reliance on fossil fuels for building energy. The incorporation of energy-efficient HVAC, plumbing, and electrical systems in this proposed facility is crucial for advancing the campus's goal of reducing overall fossil fuel usage. Given that major capital projects are typically significant energy consumers, prioritizing energy efficiency in the new facility is particularly important.

This project is unique for EWU as it intends to utilize a new all electric heating and cooling system produced by a ground source heat pump for heating, domestic hot water, and chilled water. This ground source heat pump system will be housed in a newly proposed central geothermal energy plant. By connecting to an all-electric heating system, this project will significantly reduce carbon emissions associated with the building when compared to the existing facility that is currently connected to the campus steam plant, which utilizes natural gas fired steam boilers.

EWU is currently working on a campus Decarbonization Plan, scheduled for completion in 2025. This plan will outline the steps needed to align the campus with House Bill 1390, to decarbonize the existing central heating plant.

4.4.4 ARCHAEOLOGICAL AND CULTURAL RESOURCES

In adherence with Executive Order 21-02 and Section 106 of the National Historic Preservation Act of 1966, EWU has initiated consultation with the Washington State Department of Archaeology and Historic Preservation (DAHP), and the Coeur d'Alene, Colville and Spokane Tribes Preservation Programs. The university is committed to working with DAHP throughout the design phase to address historical and cultural resource impacts this proposed project may identify. All proposed construction will be on previously disturbed ground, therefore we do not anticipate any archaeological resources will be uncovered as part of this work. Project specifications will include requirements for an Inadvertent Discovery Plan (IDP) should any artifacts or remains be discovered during excavation.

This project has been remodeled numerous times over the years and much of the historic character has been removed.

4.4.5 CLEAN BUILDING ACT

State Energy Standards for Clean Buildings (RCW 19.27A.210)

The Department of Commerce, through RCW 19.27A.210, has developed standards for reducing greenhouse gas emissions from the building sector as published in the Washington State Clean Buildings Performance Standard (2021). The Clean Building Performance Standard has established energy use intensity targets. This building is anticipated to exceed the 50,000 square feet threshold for Tier 1 Buildings, mandating compliance on the building level. EWU monitors their Energy Use Intensity (EUI) as a campus and has been evaluating their overall EUI in relation to the Washington State Clean Building Performance Standard, with a target campus EUI of 112.2. The preferred building option and energy package of this predesign is anticipated to reduce the campus' comprehensive EUI from the current value of 118.4 to 111 kBtu/(SF-year), more than a 6% reduction in the campus

EUI. This EUI reduction attributed to the preferred option and energy package is anticipated to bring the campus EUI within the requirements of the Clean Building Performance Standard target EUI of 112.2 kBtu/(SF-year).

As of March 15, 2024, the 2021 Edition of the Washington State Energy Code has been implemented. The project will follow the State Energy Code in place at the time the building is permitted. With progressively more aggressive energy requirements, alongside the phase-out of fossil fuels, facilities will progress towards reducing energy consumption and associated greenhouse gas emissions, as outlined in the Greenhouse Gas Emissions Policy.

4.4.6 VEHICLE CHARGING CAPABILITIES

Vehicle Charging Capability (RCW 19.28)

Where new parking is provided at the building, electric vehicle charging stations and infrastructure shall be provided in compliance with WAC 51-50-0429. The electric vehicle charging stations and infrastructure shall meet Level 2 charging capacity requirements with each charger rated for 40 amps at 208V, 1PH. Charger locations will be coordinated to not conflict with campus snow removal operations.

4.4.7 AMERICANS WITH DISABILITIES ACT

The purpose of the Americans with Disability Act is to prohibit discrimination based on disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. ADA Title II requires that State and local governments provide people with disabilities an equal opportunity to benefit from all the programs, services, and activities (e.g., public education, employment, transportation, recreation, health care, social services, courts, voting and town meetings). This project will adhere to the State requirements for ADA. This project provides ADA parking spaces complete with new ADA compliant walkways/ramps at all building entrances.

4.4.8 PLANNING COMPLIANCE

City of Cheney, Comprehensive Plan

4.4.9 INFORMATION REQUIRED BY RCW 43.88.03.01(1)

The new Martin Williamson is planned in accordance with the Growth Management Act (GMA) RCW 36.70A as required by RCW 43.88.0301(1). The proposed project fully complies with the city's comprehensive plan and zoning codes.

4.4.10 OTHER CODES OR REGULATIONS

City of Cheney Comprehensive Plan

Washington State Environmental Policy Act (SEPA)

State of Washington Department of General Administration – Leadership in Energy and Environmental Design (LEED) – Quality Assurance Process Guidelines for State Agency/College and University Facilities.

4.5 PROBLEMS REQUIRING FURTHER STUDY

An additional Site Survey will be required to verify existing utility locations on-site to confirm exact locations of existing infrastructure.

Geothermal Infrastructure Study:

Central Geothermal Plant: As part of a separate project, Eastern Washington University will be building a new open source geo-thermal heating plant. The heating plant will generate heating hot water for building heating and domestic hot water generation.

Funding for this new central plant will be requested separately from this project and is the primary source of heating and domestic hot water generation for this project. If this central plant is not funded alongside this project, an alternative means of heating and domestic hot water generation for the building will be required.

4.6 REQUIREMENTS IN EXCESS OF EXISTING CODE

No items have been identified.

4.7 TECHNOLOGY INFRASTRUCTURE INVESTMENTS

Campus owned outside plant cabling will be provided to the building from the existing campus IT infrastructure. New site communications pathways will be provided to connect the new facility to the existing site utility pathways near the site. Communications rooms will be located throughout the new facility in accordance with EIA/TIA 568 and 569. The main telecom room will be located on the ground level of the building. Each floor of the building will be provided with a minimum of (1) closet. Additional communications rooms will be provided on each floor as needed to ensure that all horizontal station cabling distances will be less than 295 feet from the nearest closet. Cable trays will be provided at accessible ceilings on each floor to support horizontal cabling distribution.

4.8 SECURITY

The site is within the existing campus and will be subject to existing campus security protocols. Pole mounted lighting on the site will be provided for pedestrian walkways and parking areas to support site-related campus security goals. Site lighting illumination levels will be in compliance with IES guidelines and EWU campus standards.

4.9 COMISSIONING

Eastern Washington University will engage a third-party commissioning agent to oversee the project commissioning, adhering to WAC 51-115C-4801 and LEED criteria for energy and water systems. The appointed consultant shall be a member of the Building Commissioning Association and the U.S. Green Building Council and will serve as the University's Commissioning Authority. Their services will enhance the facility's value, bolster maintainability, conserve energy, and enhance indoor environmental quality. Alongside meeting Washington State Energy code and LEED Enhanced Commissioning standards, the agent will also undertake the following responsibilities:

- Development of a commissioning plan.
- Identification of all the roles of the project members, including the University, the Architect/Engineering Consultants, sub-consultants, contractors, and sub-contractors.
- The plan will identify the needs of Eastern Washington University to ensure that functional building requirements are met and to establish the project design intent.
- The commissioning process will begin in the early phases of design and continue through construction to final completion, final acceptance, and the warranty phase.
- Commissioning services will include but not be limited to the following areas of the building operations: energy monitoring, building automation and energy management systems, heating, ventilating and air conditioning systems, lighting controls, plumbing, domestic heating water system, HVAC heating and cooling systems, building enclosure, and renewable power systems.
- In addition to Enhanced Commissioning, Envelope Commissioning as outlined in LEED should be considered.

4.10 FUTURE PHASING

The proposed project includes the necessary areas for the included programs and does not assume any future phasing. Adequate infrastructure is provided to accommodate a future Geothermal connection to the building.

4.11 PROJECT DELIVERY METHODS

4.11.1 DELIVERY METHOD COMPARISON

The project is not pursuing an alternative delivery method. The proposed project does not meet the GCCM or Design Build requirements outlined in RCW 39.10. Both of these delivery methods can be effective, but they would incur additional preconstruction fees for contractor involvement early in the design.

The project will use the Design-Bid-Build (DBB) project delivery method per RCW 39.04 – Public works. This is the delivery method that is most frequently used by Eastern Washington University. The school is familiar and experienced with this delivery method and has found that it has been the most cost-effective by promoting competitive bidding between interested general contractors and subcontractors.

Position	Time On Project	Duties:
Director of Construction & Planning	15%	Oversees project planning and implementation for campus
Sr. Project Manager	85%	Supervises construction implementation and project coordination
Construction Project Coordinator	45%	Assists with project coordination for campus
Office Assistant	15%	Assists with administrative tasks for project
Totals	**160%**	

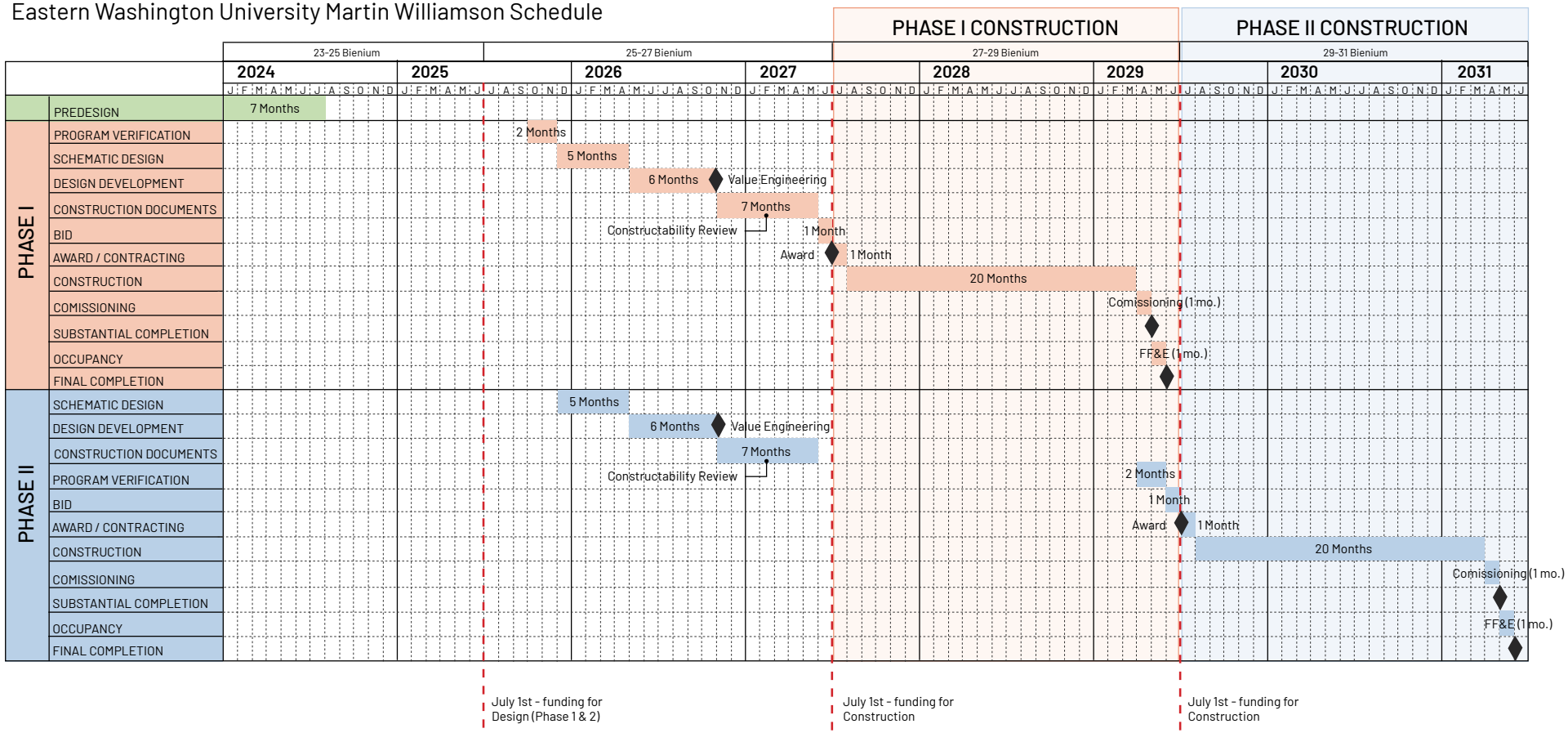
4.11.2 MANAGEMENT ORGANIZATION WITHIN THE AGENCY

Eastern Washington University's Construction and Planning Division will manage all aspects of the project from programming and initial budgeting of the proposed project to the initial selection of the project architect/engineer(A/E) consultant design team and throughout the subsequent design, bidding, construction, commissioning, and warranty phases. The Construction and Planning Division will oversee the required contractual administration for the project architect/engineer (A/E) consultants and public works contractors. The Construction and Planning team is responsible to work closely with the university's administration, the design team, and the contractors to ensure the project is delivered on time and within budget.

4.12 SCHEDULE

4.12.1 MILESTONE SCHEDULE

Eastern Washington University Martin Williamson Schedule



Schedule Highlights

- Design for Phase 1 and Phase 2 to occur simultaneously so a complete set of documents for both phases will be completed and permitted at the end of the 2025-2027 Bienium.
- Construction for Phase 1 proposed in the 2027-2029 Bienium
- Construction for Phase 2 proposed in the 2029-2031 Bienium

4.12.2 VALUE ENGINEERING AND ANALYSIS

The project schedule includes time for both a Value Engineering (VE) study and a Constructibility review. The VE study will take place at the end of the Design Development phase and will allow the project team to better understand what project saving opportunities can be found. The Constructibility study will take place at the midpoint of the Construction Documents phase and will be complete with enough time to be incorporated into the building permit submission.

4.12.3 POTENTIAL FACTORS THAT MAY DELAY SCHEDULE

There are no known factors that are expected to delay the design or permitting of the project. The construction schedule may be affected by current supply chain challenges. The project team will mitigate any delays by identifying long lead time items early and will be responsive to allow for early procurement where it is feasible.

The project schedule would be delayed if construction funding is not allotted in the 2027-29 and 2029-2031 bienniums and postponed to a future biennium. This would likely increase project costs due escalation. Costs would likely also increase beyond the standard escalation rates due to potential design and document revisions for code changes, and project restart fees.

4.12.4 LOCAL JURISDICTION COORDINATION

The Authority Having Jurisdiction is the City of Cheney. The project team has already begun coordination with the permitting agencies to better understand the site access and zoning parameters. The team will continue to work with the city to ensure that all development requirements are met and that the required permits are obtained in a timely manner.

SECTION 5

BUDGET ANALYSIS

5.0 BUDGET ANALYSIS OF PREFERRED ALTERNATIVE

5.1 COST ESTIMATE

5.1.1 MAJOR ASSUMPTIONS

Phasing – Alternative C - Historic Screen

Construction of this project will occur in two phases. The first phase will include all Division 21, 22, and 23 wet infrastructures sized for both phases. Phase 1 infrastructure to include fire service and riser, domestic water service and backflow prevention, hydronic heating water service and system components, and hydronic chilled water service and system components. Fire, domestic hot and cold water mains, and hydronic mains will be sized and located for connection in phase 2. Sanitary sewer, roof drainage, and air distribution systems will be appropriately sized only for the phase they are installed.

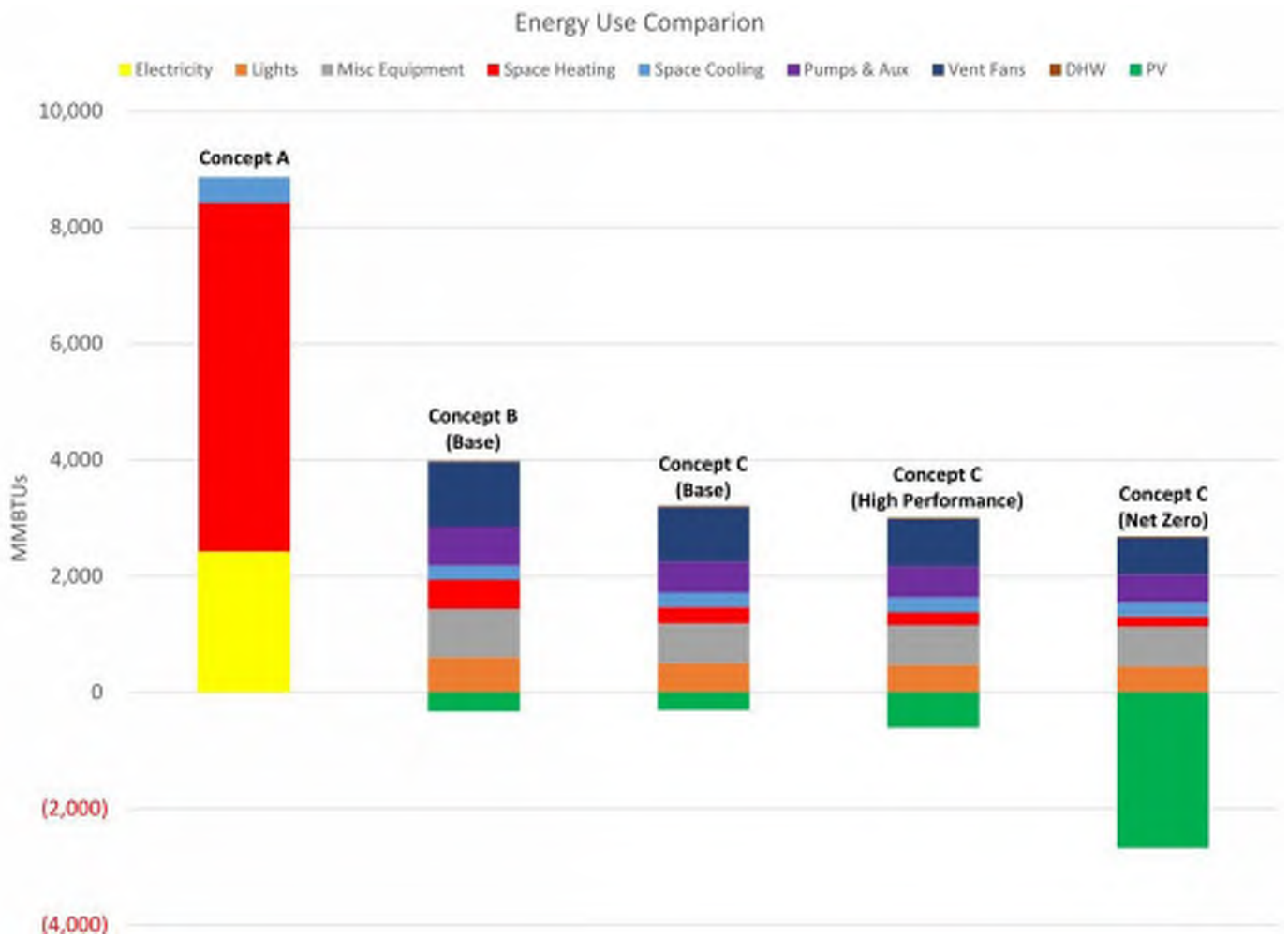
Energy System Evaluations

As part of the pre-design, three comprehensive energy packages were studied in the preferred Concept C concept. These three packages are referred to as the Base Package, High Performance Package, and the Net Zero Package. Specific system components studied in each of the three options as follows:

Base Package
- 124,375 sf new building using two existing exterior facades
- Chilled beams with 68% effective heat recovery for ventilation airflow
- 10% better than WSEC required Lighting power density (LPD)
- Ground coupled heat pump plant for LTHW, chilled water (CW), and domestic hot water (DHW)
- 62 kW photovoltaic (PV) system to meet WSEC requirement of 0.5 Watts (W) per square foot

High Performance Package
- Base Package with the following changes:
- 75% effective heat recovery for ventilation airflow
- Displacement ventilation HVAC system for large lecture hall style classroom
- Radiant floor heating and cooling for first floor corridor
- 15% better than WSEC required LPD
- 124 kW PV system

Net Zero Package
- High Performance Package with the following changes:
- 90% effective heat recovery for ventilation airflow
- Low pressure ductwork reducing fan power
- 20% better than WSEC required LPD
- High performance glazing (U-Value: 0.28 / SHGC 0.22)
- Horizontal shading on South facing windows
- Vertical shading on East and West facing windows
- 547 kW PV system



Energy results from the Energy Life Cycle Cost Analysis looking at the three concepts and the three energy packages studied within Concept C can be found below. From this study, the preferred option for Concept C is the High Performance energy package. This decision is in response to its impact on bringing the campus EUI within the EUI target required by the Clean Building Performance Standard, and the increased life cycle costs and additional site area required for the on-site renewable energy created by PV.

A10: Foundations:

The foundations for new construction will include continuous and spread footings, and perimeter drainage. The existing building's first floor is a concrete framed floor over a crawlspace. After this floor is demolished, structural fill will be brought in to raise grade for a concrete slab on grade.

B10: Superstructure:

At new construction, roof structure will be composed of 1 ½" metal roof deck on steel beams, supported on steel girders and steel columns. Second floor construction will be 5½" composite concrete deck supported on composite steel beams and girders, supported on steel columns.

CLT Option:

At new construction, roof structure will be composed of 3-ply CLT supported on glulam beams at roughly 14 feet on center, supported on glulam girders and steel columns. Second floor construction will be 5 ½" composite concrete deck supported on composite steel beams and girders, supported on steel columns.

We anticipate the lateral force system for either option will be either CMU shear walls or concentric steel braced frames. It is likely that one or two building joints will be required.

B20: Exterior enclosure:

Scope of work includes masonry brick veneer and insulated metal panel. The extent of brick will be approximately 80% and 20% insulated metal panels at opaque walls. Glazing scope includes curtain wall and storefront glazing. The extent of the glazing would vary by exposure from approximately 20% to 30% of the gross wall at the existing northeast and southeast facades to 30/40% at classroom, research, offices, Counseling and Student Support Services areas and 40% /80% at circulation/student areas. Other scope would include exterior sunshades. Exterior door scope will include glazed aluminum doors at vestibules and hollow metal doors at other locations.

The existing exterior masonry wall will be shored and braced (design by general contractor) to allow demolition of the existing 1st floor, second floor and roof structure beyond. This bracing system will remain in place until the new structure and lateral system is erected, and the existing wall system is properly tied to the new framing.

B30: Roofing:
Roof scope of work includes an Built-Up Roofing system with insulation (R-Value at 20% better than code), sheet metal flashings, and rough carpentry. Additional scope includes roof ladders, roof hatch, skylights, and fall restraint anchors.

C10: Interior Construction:
Interior partitions will consist of metal stud framing, batt insulation and gypsum board, interior glazing, and interior doors. Fittings and specialties will include toilet partitions, white boards, signage, corner guards, miscellaneous, restroom and shower accessories, fire extinguishers and cabinets.

C20: Stairs
Main stair included HSS tube steel structure with polished precast concrete treads and landings, and aluminum, glass, or cable rail guardrail and decorative stainless-steel railing. Back-of-house stairs will have channel stringers and concrete filled metal pan treads with composite concrete decks at landings and painted guardrail.

C30: Interior Finishes
Floor finishes include porcelain tile at restrooms, carpet tile and/or resilient flooring in classrooms, counseling, offices, and student support areas, and polished concrete in corridors and large shared or common areas. MEP rooms and storage will be sealed concrete. Ceiling finishes will include ACT, painted GWB, wood beams exposed to structure, acoustical baffles, as well as linear wood grilles.

D10: Conveying systems
One 3500lb 3-stop hydraulic elevator with motor and adjacent pump is included for access to all floor levels. Elevator to accommodate an ambulance stretcher.

D20: Plumbing
General
The building plumbing systems will comply with Eastern Washington University's campus standards. Water conservation is a high regional priority for Cheney and low consumption fixtures and water conservation strategies shall be employed to provide optimal efficiency and high performance to minimize maintenance.

Water
Domestic cold water distribution systems will be provided throughout the building. Backflow prevention assemblies will be provided for the system in accordance with the AWWA Backflow Prevention and Control Manual and reviewed with the Cheney Water Division and will be located in the ground floor mechanical room.

A domestic hot water distribution system will be provided throughout the building. Hot water will be generated from water-to-water heat exchangers connected to the new low temperature heating water system, serviced by the newly proposed geothermal heating water system. Domestic hot water will be generated between 115-120°F. A hot water recirculation system, controlled through the campus building automation system (BAS), will be provided, and distributed at low velocities, using in-line all-bronze circulating pumps throughout the building.

Materials:
- Water Piping: Copper Type L

Sanitary Waste System
A gravity sanitary sewer system will be utilized for all flushing and flow fixtures with drain connections. All waste systems will discharge five feet outside the building for connection to the site sanitary sewer.

Materials:
- Drain, Waste, Vent Piping (above grade) : Cast Iron
- Waste Piping (below grade): PVC, ABS, or cast Iron

Rainwater Drainage
Gravity primary and overflow storm drainage systems that will be piped with interior roof drain leaders to a point five feet outside the building for connection to the site storm drainage system. Overflow drains will terminate at grade level on splash blocks.

Materials:
- Storm Drain Piping (above grade): Cast Iron
- Storm Drain Piping (below grade): PVC, ABS, Cast Iron

Other Plumbing Systems
At a minimum, isolation valves will be provided for plumbing systems at each floor, at all branch take-offs to individual fixture groups, and each restroom (men's, women's, and gender neutral) with individual isolation valves located on the same floor and within easy access.

Elevator pits will be provided with sump pumps, to comply with Washington L&I requirements, and piped to the sanitary sewer system.

D30: Heating, Ventilation and Air Conditioning (HVAC)

General
The building HVAC Systems shall comply with Eastern Washington University's campus standards. The proposed mechanical systems are designed for a balance between high energy performance, flexibility, and low maintenance. Systems with the lowest anticipated energy use are proposed. Campus utilities will be metered and interfaced with the Division 23 building automation system.

Outdoor Design Conditions: Heating Systems will be sized for the ASHRAE median of extremes for Cheney, Washington which is -9°F. Cooling systems will be sized for the ASHRAE 0.1% design condition temperature for Cheney, Washington which is 99°F dry bulb and 69°F wet bulb.

Indoor Design Conditions: When occupied, office and classroom spaces will be maintained between 68 and 75°F. Telecommunication rooms will be controlled to 68-75°F 24 hours per day, 7 days per week. Mechanical and electrical spaces will control to 55-85°F.

Utilities

The building will be heated with low temperature water (120°F) supplied by the new open-source geothermal heating plant. LTHW will be routed to this building via 6"Ø supply and return pipes. The LTHW water will then be distributed through the building via fully redundant building heating water pumps. Air handling equipment exposed to outside air shall be serviced by a dedicated heating water system, freeze protected with 40-50% propylene glycol, separated from the campus LTHW system via a heat exchanger.

This building will be cooled from campus chilled water system, supplied by the existing chiller plant and the new open-source geothermal heating plant. Chilled water will be routed to this building via an extension to the existing tunnel system with 6"Ø supply and return pipes. The chilled water will then be distributed through the building via 60-70% redundant building chilled water pumps. All radiant floor and chilled beam systems utilizing 6-way valves shall be serviced by a dedicated tempered chilled water loop and separated from the campus chilled water system via a heat exchanger to prevent mixing of the new low temperature heating water system from the existing campus chilled water system.

Ventilation and Exhaust Air

This building has two primary air classifications, as defined by ASHRAE. Spaces with an ASHRAE Air Classification of 1 and 2 will be ventilated in accordance with ASHRAE Standard 62.1: Ventilation and Acceptable Indoor Air Quality. Within these spaces, ventilation air will be ducted via a dedicated outside air system (DOAS). Air will be regulated to each major zone through air terminal units and returned to the unit via return air ducting and regulated from each major zone or on a floor basis using air regulating devices. Ventilation air will be adjusted based upon occupancy and space CO2 levels.
A transpired solar collector will be provided to passively heat the ventilation air before entering the air handling units for heating and cooling. The transpired solar collector will be equipped with louvers that bypass the preheat plenum when the air system is in cooling mode. All outside air intakes will be located away from exhaust vents, plumbing vents, exhaust discharges, smoking areas, loading docks, kiln exhaust, dust collectors, designed to prevent hoar frost buildup, and will take prevailing winds into consideration. Prevailing winds are predominantly from the northwest, but occasionally from the southeast.

Space Conditioning

Radiant floor heating and cooling should be considered as the primary source of heating and cooling in the main lobby and major corridor spaces.

Supply Air Handling Units for Air Class 1 and 2 spaces: These spaces will be serviced from central dedicated outside air system (DOAS) style air handling unit with supply fans, exhaust fans, filters, chilled water cooling coils, glycol heating water heating coils, a total energy heat wheel or other style of heat recovery, and sized for ventilation needs in these spaces. The DOAS unit will recover a minimum of 68% sensible recovery effectiveness or have an enthalpy recovery ratio of not less than 60 percent at design conditions, in accordance with the 2021 Washington State Energy Code (WSEC), from the conditioned air that is exhausted from the building. Energy recovery efficiency in excess of the WSEC requirements will be considered as part of the project's energy goals. Fans shall be arranged in a fan array for N+1 redundancy, efficiency, and ease of service. Local space temperature control will be provided from active chilled beams.

Each conference room, classroom, and study space will have their own thermostat. Offices will be provided with a minimum of one thermostat for every two offices.

Building Automation System

The project will utilize a Direct Digital Control (DDC) system for the control of the HVAC systems, providing for heating and cooling control, peak load demand limiting and start/stop optimization. Damper and valve actuators will be electronic. Room thermostats will be an electronic adjustable type with override switch for occupant activation to occupied mode during unoccupied periods.

Energy Management System (EMS): The EMS controls will be compatible with EWU's campus BACnet controls. The system shall be manufactured by Alerton or Automated Logic. Controls will interface and communicate with the local network and front-end operator's terminal for the purpose of remote operation and maintenance. The EMS will include display and report real-time building systems performance data. The EMS controls will provide energy metering interface for the new water, chilled water, low temperature heating water, and electric utilities servicing the building and report to the Skyspark control system.

Other

The community space may offer differing hours of operation from the remainder of the building. As a result, a dedicated system should be considered for this area, such as a 4-pipe fan coil with economizer cooling.

Vibration isolation of pumps and fans will be provided. Additional acoustic considerations will include limiting duct velocities through ductwork, terminal units, and air inlets/outlets to achieve space NC, use of sound attenuators in the duct systems, and vibration isolation of mechanical equipment with spring isolators and flexible connections will also be employed.

Areas that have 24-hour process cooling loads such as the main telecommunication rooms will be cooled with systems that allow for year-round cooling and the option for economizer cooling.

The elevator machine room will have an independent stand-alone system per Washington Elevator Code requirements.

A hydronic snowmelt system will be provided for exterior walkways at main entrances and site stairs that are difficult to access with mechanical snow removal equipment. Hydronic heat for the snowmelt system will be generated from a water-to-water heat exchanger connected to the heating water system.

Air systems (supply, return, and exhaust), hydronic, and domestic hot water recirculation systems will be completely balanced in accordance with Associated Air Balance Council or National Environmental Balancing Bureau.

D40: Fire Protection Systems

The building will be fully sprinklered in accordance with NFPA-13 requirements and the Eastern Washington University Campus Standards. The systems will be a wet sprinkler system throughout the building. Piping shall be sloped to low points for drainage. The building light hazard areas (office, lecture rooms, circulation spaces) will be sprinkled to light hazard requirements. Electrical and mechanical rooms will be sprinklered to ordinary hazard group 1 requirements.

Hydrants will be coordinated with the fire department and, where required, provided in the civil scope of work.

A fire protection standpipe will be required and provided at each exit stairwell if the highest occupied level of the building exceeds 30 feet above grade.

D50: Electrical

Power

The building will receive electrical service from the campus owned medium voltage distribution system. New buried conduit pathways, vaults and cabling will be provided from the nearby existing campus medium voltage system to the new building service yard. A total of (2) pad mounted oil filled transformer will be installed on the site to provide normal electrical services to the building.

Electrical services will be derived from the (2) transformers with secondary voltages of 480Y/277V and 208Y/120V. The (2) services will have an estimated rating of 1600 amps and 2000 amps respectively. The main service switchboards will be housed in a dedicated main electrical room at the ground floor. The proposed dual service approach is intended to remove heat producing transformers from inside the building, which would also eliminate the need for electrical room space conditioning.

Emergency and standby power will be provided by an onsite natural gas fueled generator. Estimated generator rating is 100kW with a voltage of 480Y/277V. The generator will include separate automatic transfer switches and distribution for NEC 700 and NEC 702 power systems. The generator ATS equipment shall be housed in a dedicated electrical closet on the ground floor in close proximity to the normal electrical service room. Generator shall be located outdoors on a concrete housekeeping pad with a sound attenuated weatherproof enclosure.

The building electrical distribution will originate from a main electrical room on the ground floor. The building electrical distribution will be designed to provide separation of lighting, mechanical, and general building loads. Circuit breaker panelboards shall be provided throughout the building as required to adequately serve the associated building loads. Each telecommunications room will be provided with a dedicated 120/208V power panelboard and an equipment ground bar. Surge protection shall be provided by installing surge protection devices at the main switchboard, distribution panelboards, emergency panelboards and appropriate branch panelboard locations. All electrical feeders shall copper and installed in rigid conduit.

Branch circuit distribution within each programmatic space will be closely coordinated with the specific function of each space. Additional spare electrical capacity will be designed into each panel to accommodate future potential changes to the building program. Wall mounted surface raceway with receptacles shall be considered for spaces with workstations such as computer labs. Floor boxes will be provided within meeting rooms and classrooms as required by the program and the electrical code. All branch wiring shall copper and installed in rigid conduit.

Owner metering shall be provided for the building main electrical service equipment. Additional sub meters shall be provided for lighting, mechanical, PV system, EV charging and plug loads to allow separate metering for each end use type.

A complete system of photovoltaic arrays shall be provided for on-site renewable energy generation in compliance with the Washington State Energy Code (WSEC). In order for the building to achieve high performance goals, the solar array will be sized for a minimum system output of approximately 124kW. Potential locations for solar arrays include the building roof and site structures such as canopies.

Lighting

Building interior and exterior lighting will LED type. Lighting illumination levels will be in conformance with IES standards. Lighting power densities will be in conformance with the Washington state energy code. Egress and exit lighting will be provided with backup power from NEC 700 emergency power.

A low voltage lighting control system shall be provided for time-based, sensor-based (both occupancy and daylight), and manual lighting control in compliance with the energy code, LEED and the building program needs. Fixtures with embedded controls shall be considered to allow for lighting zone control changes throughout the life of the building. Switching of receptacles based upon occupancy shall be provided in compliance with the energy code.

D50: Communications

Existing buried campus communications lines are in conflict with the proposed building location and will be relocated and extended as necessary. New outside plant cabling will be provided as required to serve the new building from the existing campus infrastructure. Existing pathways in close proximity to the building will be extended for connection to the building main telecom room (MDF).

Communications Distribution: Communications building distribution cabling, devices and pathways will be provided by the contractor. Communications riser cabling will be provided from the entrance location to each Communications room. Each Communications room shall be provided with a dedicated 120/208V power panelboard, branch circuits and an equipment ground bar. Communications room power panel shall be served from NEC 702 standby power.

Communication Cabling Pathways: Cable trays will be installed on each level to facilitate cabling installation. All horizontal distribution of Communications risers will occur on the main floor level. Vertical distribution of Communications risers will route vertically through the building via 4" conduit pathways between floors.

Communication Outlets: Communications outlets will be provided throughout the facility at locations such as work stations, computers, printers, projectors, lecterns and wireless access points. Horizontal station cable will be provided and routed to the nearest Communications room located on the associated floor. Category 6 copper twisted pair cabling will be routed through the communications raceway system to each communications outlet in the building. Typically, each outlet will be served with two Category 6 cables.

WiFi Systems: WiFi system pathways, station cabling and outlets will be provided by the contractor. Required locations for wireless access points will be closely coordinated with EWU. All wireless access points will be provided and installed by EWU.

Clock System: Station cabling and outlets shall be provided by the contractor for Owner furnished Owner installed digital clocks.

Audio Visual

Audio visual systems will be provided and installed by the contractor. Spaces requiring audio visual system shall include, but not be limited to assembly spaces, classrooms and meeting rooms. The basis of design for assembly spaces and classrooms shall be a hybrid learning classroom which will include projectors, projector screens, overhead ceiling speakers, wireless microphone systems, assistive listening devices, room control, lecture capture camera and device inputs. Large meeting rooms will require a projector and screen or wall mounted display, reinforced sound and control systems. Small and medium size meeting rooms will require wall mounted display and media control systems. Computer labs will be treated as basic classrooms with either projectors and screen or wall mounted displays, overhead ceiling speakers, wireless microphone systems, assistive listening devices, room control, and wireless device connectivity.

D50: Security & Fire Alarm

Distributed Antenna System (DAS): A a complete distributed antenna system for emergency responder radio use is not planned for the new building. The contractor shall provide building infrastructure for a future DAS system. Upon completion of the building structure, walls and ceilings the contractor shall provide testing for responder radio coverage.

Access Control: A complete access control system will be provided in accordance with EWU campus standards. Required locations for miscellaneous access control devices will be closely coordinated with EWU. Typical spaces to be provided with access control include building office suite entries, exterior entries, classroom doors, MEP closets, telecom closets, and AV closets. Additional access controls shall be considered for building areas that have unique 24/7 access needs for students.

Video Surveillance (IPCCTV): Video Surveillance system cabling and pathways will be provided by the contractor. Contractor shall be responsible for installing Owner furnished cameras and camera mounting hardware. Required locations for IPCCTV devices will be closely coordinated with EWU. Typical spaces with IPCCTV devices include building entrances, building circulation, building exterior and parking. The installed cameras will connect to the existing campus IPCCTV network via CAT6 network cabling connections.

Fire Alarm: A complete battery backed addressable fire alarm system with manual pull stations, automatic detection and ADA compliant speaker/strobes will be provided throughout the facility. Initiating and annunciation devices will be installed as required by the governing codes, and in accordance with EWU campus standards. Notification devices shall be white in color and labeled ALERT to allow for dual use as mass notification. The building fire sprinkler system will be monitored by the fire alarm system for system flow and shutoff valve tampering. Central reporting capabilities will also be provided with the fire alarm system. Optical smoke imaging devices shall be considered for detection in large multi-story atriums or other large volume spaces. Fire alarm system shall be Edwards EST4 series.

E10:Equipment

The construction cost includes the supply and installation of all residential appliances to outfit staff break room and kitchenettes throughout. Also included is science prep area equipment, dishwashers, and ice machines. This also includes electrically operated projection screens and associated infrastructure.

E20:Fixed Furnishings

Fixed furnishings include walk off matts, built in casework and benches, and interior and exterior window treatments.

F10: Demolition

Major demolition as required to accommodate new construction. Preservation and shoring of the Northeast and Southeast facades to be utilized as part of the new construction.

G10: Site Preparation

Site Preparation and Excavation

Demolition will include removal of both buildings and foundations, leaving the façade of Martin Hall on the north and east faces. Existing utilities will be capped at the edge of work and left for reconnection. All demolished materials will be removed from site, reused, recycled or discarded, in appropriate, legal locations.

Site preparation for the project will include removal of the existing paving and miscellaneous site features in the work area. The topsoil and vegetative material will be removed, screened and saved for re-use in revised landscaped areas. The subgrade will be prepared prior to placing structural fill or building foundations, per future geotechnical recommendations. Structural fill will be approved imported material. Native silty or clayey material is not acceptable for use as structural fill and will be hauled off site. Some large trees very near the buildings and future construction will need to be removed to construct the new facility, and for future maintenance access to the façade.

Temporary Sediment and Erosion Control
During construction, all temporary erosion and sedimentation control systems will be designed and constructed in accordance with the Eastern Washington Regional Stormwater Manual Best Management Practices (BMP's), to protect of site properties as well as minimize the quantity of sediment-laden water from entering the City of Cheney's public storm system. The site will be graded to drain to sediment control ponds or temporary tanks at the site.

Temporary catch basin protection should be installed and maintained on existing and new catch basins to filter sediment-laden water entering the existing storm conveyance system during construction.

The size of this project will trigger coverage under the DOE's Construction General Stormwater Permit, with it's record keeping and reporting requirements for quality of water discharged from the construction site.

Temporary Construction Features
During construction, site access is expected to be from the empty lot south of the Martin-Williamson site, across the former Reid School parcel. This access and other contractor laydown and trailer space will need to be coordinated with ongoing campus activities and circulation needs.

Quarry spall work pads on disturbed soils, and silt fencing placed around the downhill portion of the site will further control soils and limit erosion. Soil stockpiles will need to be erosion protected, with plastic sheeting or other approved measures to prevent sediment migration from the site.

Construction Debris
The contractor will implement BMP's to prevent demolition and construction debris, waste, material, fuel, oil, lubricants, and other fluids from entering the public right of way and the existing storm conveyance system. All waste materials shall be disposed of in appropriate, legal locations. Recycling or reuse of demolished or excess material when appropriate is encouraged.

Foundation Subdrainage
A footing and slab drainage system will be incorporated, and discharge into the campus stormwater under adjacent walks and drives. This system discharges to the City system in 7th Street. Most areas of this campus have a thin near surface layer of porous soils, overlaying fractured and solid basalt. Depending on the depth and condition of this soil, an under-slab drainage system may be warranted for the new building. If recommended by geotechnical engineer, under-slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drainpipes in the free-draining layer will gravity drain to the existing campus storm system.

G20: Site Improvements

Site Development
The building will be accessed from all four sides, vehicular access could be made from the interior campus drive to the west, as currently used, or from the east near the entry to the P1 parking lot. Facilities for service, deliveries and waste staging should be provided.

Pedestrian access will be accommodated to all four faces of the complex. The historic Martin entrances have stairs at them to access the main level of the building. Revising the stairs with integrated ramps and landings from the adjacent pedestrian walks will accommodate all users, while maintaining the general appearance of the historic entries.

Site Paving
Site paving will consist of asphalt and concrete per university standards. Paving will be for new/replaced walks and drives around the new building and to patch utility trenches., in-kind matching existing surfaces. Asphalt for restored parking areas and new loading/utility yard, assume 6-in of ½-in HMA over 6-in Crushed base. Concrete walks and plazas around the buildings, 6-in w/ reinforcing. Where needed for fire lane, 8-in thick pavement. At University direction, some areas of new/replaced paving will have snow melt tubing and connection to campus or building boilers for heat.

Fire Truck Access
Fire truck access can be provided off the parking lot on the east side, at Eagle Lane and from 7th Street. Per a campus fire improvement study from 2007, the walks to the north and west are scheduled to be widened to 20-ft accommodating fire trucks. There are 4 existing fire hydrants within a 300-foot radius of the proposed building. These hydrants are near the corners of the complex.

Water Supply
Water mains: Existing Campus water mains are to the west, north and east faces of the buildings, No relocation or extension of existing mains is expected due to this construction. A single combined fire and domestic water service will be provided to the building from the University system water line. Analysis from the plumbing and fire design will be required to determine the size of the services for the new building.

Water Meter
An in-building water meter will be provided to measure the domestic water use in the new building for the purpose of; reporting trends in building systems consumption required by WA State law, reporting of meeting LEED criteria.

Sanitary Sewer
All floors of the addition m should be able to discharge waste by gravity to the campus sanitary sewer system located off the south edge of the site. At least one new 6-in connection to this system is anticipated, reuse of existing side sewers may be possible, depending on condition and location relative to the new facility.

Stormwater Treatment and Disposal
The University's stormwater system drains to the City of Cheney's public storm system. Development of this addition will conform to the City's current surface water development manual which specifies stormwater design standards. The city has adopted the Spokane Regional Stormwater Manual, April 2008, which also governs stormwater design for Spokane County, the City of Spokane, and the City of Spokane Valley. Storm water collected off new roof areas will not need to be treated for water quality but can be directed to the local campus system. If new and replaced vehicular use pavements exceed 5,000-sf within this project, the water quality treatment facilities will need to be provided for water collected off these surfaces. For small areas this is usually best done before detention. Cartridge filter systems or grass swales may be possible based on available space and locations.

Stormwater flow control system
Martin Hall dates from 1937, and Williamson from 1966, both buildings predate the writing and adoption of any drainage codes. The water from these roofs flows into the local campus system and into the city storm mains with no flow control. This condition is grandfathered and given that the new building and associated paving will be approximately the same footprint, flow control (detention) is not required.

If LEED or other sustainable practices are desired, several options may be available to obtain stormwater points for the redeveloped site. For LEED points, most of the water needs to be either infiltrated, or re-used within the LEED boundary.

Infiltration
The soils on the EWU campus are typically fine-grained and usually not suitable for infiltration as the sole source of stormwater disposal. Drywells have been used on campus at many of the buildings, overflow from them could be routed to the local storm drains. Verification of local soil infiltration by percolation testing is recommended.

Cistern to collect precipitation for reuse
Collection and holding water in winter for use later in the year is another possible storm water strategy, one nearby objective is to collect water under the quad from nearby buildings. Setting their new building up for such a system may be possible. Alternatively, a cistern could be constructed below the new plaza, with the possibility of reusing storm water for irrigation or other gray water uses.

Foundation Subdrainage
A footing and slab drainage system will likely be incorporated, and discharge directly into the campus stormwater system. Below slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drainpipes in the free-draining layer will gravity drain to the existing campus storm system.
The existing campus storm system is under the pedestrian plaza north of Martin Hall, and flows east and south to city systems.

Connection to Campus Utility Tunnel
West of the site, under the brick pedestrian walk, a branch of the campus utility tunnel provides access to many campus utilities, including power, communications, steam, and chilled water. Below grade, the new building will not directly affect the tunnel. Connection/reconnection to these utilities, through the existing points of connection in the tunnel are expected.

Future Geothermal Heating
The campus is developing plans for district heating from deep well geothermal systems. Under a separate project, a network of wells and heat exchangers would be installed nearby and a new low temperature looped pipe network to heat buildings, with low or no carbon footprint. Depending on the timing of the different projects, partial or full installation of such a system may be warranted in the new Martin-Williamson facility. See mechanical discussion for more detail on such a system.

Gas Distribution
Natural gas service to the campus is provided to the existing buildings by Avista Utilities, most new and renovated buildings on campus are not being reconnected to natural gas.

G30: Landscaping and Irrigation

Part of EWU's Landscape Master plan is to Promote Education, Demonstration, Experimentation, and Involvement. Campus landscapes and outdoor environments want to be used for teaching and research and facilitate connections between students, faculty and staff. Plantings will be selected with drought tolerance and prioritizing native species, creating a regionally appropriate campus planting palate and promoting biodiversity.

EWU has begun the implementation of a central controls system for irrigation. This will allow EWU maintenance staff to have much more oversight, and the ability to monitor and adjust irrigation timing to maximize efficiency.

5.1.2 SUMMARY TABLE

The following tables outline the cost summary of the preferred alternative. The complete C100 documents for both Phase 1 and Phase 2 and associated cost estimates are included in the Appendix.

Summary Construction Budget of Preferred Alternative			
	Phase 1	Phase 2	TOTAL
G10 - Site Preparation	$295,497	$313,043	$608,540
G20 - Site Improvements	$295,245	$316,595	$611,840
G30 - Site Mechanical Utilities	$153,090	$192,710	$345,800
G40 - Site Electrical Utilities	$420,000	$140,000	$560,000
G60 - Other Site Construction	$137,500	$0	$137,500
Design Contingency	$260,266	$192,470	$452,736
Contractor Mark-Up	$93,696	$69,289	$162,985
Site Work Subtotal	**$1,655,294**	**$1,224,107**	**$2,879,401**
Full Building Demolition	$2,280,000	$0	$2,280,000
Shoring Existing Historic Façade	$740,000	$0	$740,000
Related Project Costs	**$3,020,000**	**$0**	**$3,020,000**
A10 - Foundations	$1,508,137	$1,153,502	$2,661,639
A20 - Basement Construction	$0	$0	$0
B10 - Superstructure	$4,494,742	$3,320,779	$7,815,521
B20 - Exterior Closure	$4,616,977	$3,923,050	$8,540,027
B30 - Roofing	$767,624	$568,314	$1,335,938
C10 - Interior Construction	$4,921,975	$3,718,501	$8,640,476
C20 - Stairs	$140,000	$215,000	$355,000
C30 - Interior Finishes	$3,181,807	$2,396,006	$5,577,813
D10 - Conveying	$225,000	$225,000	$450,000
D20 - Plumbing Systems	$2,246,631	$1,435,890	$3,682,521
D30 - HVAC Systems	$7,212,100	$4,409,062	$11,621,162
D40 - Fire Protection Systems	$456,500	$291,763	$748,263
D50 - Electrical Systems	$5,752,498	$4,070,256	$9,822,754
F10 - Special Construction	$828,750	$610,650	$1,439,400
F20 - Selective Demolition	$0	$0	$0
E10 - CFCI Equipment	$45,000	$35,000	$80,000
E20 - Casework & Furnishings	$836,163	$626,425	$1,462,588
General Conditions	$1,500,000	$1,500,000	$3,000,000
Design Contingency	$7,446,781	$5,399,840	$12,846,621
Contractor Mark-Up	$2,680,841	$1,943,942	$4,624,783
Facility Construction Subtotal	**$48,861,526**	**$35,842,980**	**$84,704,506**
Unesclated MACC	**$53,536,820**	**$37,067,087**	**$90,603,907**

Summary Budget of Preferred Alternative						
	Phase 1 - Cost Estimate	Phase 2 - Cost Estimate	Total Cost	Phase 1 - Escalated Costs	Phase 2 - Escalated Costs	Total Cost - Escalated
Acquisition	$0	$0	$0	$0	$0	$0
Consultants	$8,056,326	$5,466,907	$13,523,233	$8,789,190	$6,117,967	$14,907,157
Construction	$64,423,332	$44,402,726	$108,826,058	$73,112,861	$53,879,081	$126,991,942
Equipment	$3,308,181	$2,448,205	$5,756,386	$3,762,394	$2,973,101	$6,735,495
Artwork	$441,683	$325,913	$767,596	$441,685	$325,913	$767,598
Project Admin	$2,349,834	$1,821,884	$4,171,718	$2,672,466	$2,212,496	$4,884,962
Other Costs	$0	$0	$0	$0	$0	$0
Total Project	**$78,579,356**	**$54,465,635**	**$133,044,991**	**$88,778,596**	**$65,508,558**	**$154,287,154**

	Cost Estimate	Cost/ SF	Escalated Cost Estimate	Cost/ SF
MACC Phase 1	$53,536,820	$749	$60,744,363	$850
MACC Phase 2	$37,067,087	$701	$44,974,243	$850
MACC	**$90,603,907**	**$728**	**$105,718,606**	**$850**

5.2 PROPOSED FUNDING

5.2.1 FUND SOURCES

The proposed project is expected to be funded through state General Obligation Bonds. Design funding is being requested as a first priority in the 2025-27 Capital Budget. Construction for the Phase 1 funding will be requested as part of the 2027-2029 capital budget and the Phase 2 funding will be requested in the 2029-2031 capital budget.

5.2.2 ALTERNATIVE FINANCE ASSUMPTIONS

The project does not plan to use any alternative finance options.

5.2.3 BIENIA BREAKDOWN

The preferred alternative funding for both Phases are shown below. Design funding for both Phase 1 and Phase 2 are requested in the 25-27 Biennium. This allows the complete project to be designed and permitted under the same code cycles and provides design and construction continuity. Construction for Phase 1 is requested in the 27-29 Biennium as is the portion of the consultant services dedicated to CA. Construction for Phase 2 will be requested in the 29-31 Biennium as well as the portion of consultant services dedicated to CA. Project Admin for EWU will be allocated across all three Biennia for continual project oversight.

Escalated Project Costs	23-25 Bienium	25-27 Bienium	27-29 Bienium	29-31 Bienium
Predesign	$281,446			
Consultant Services - Design (Phase 1)		$6,442,235		
Consultant Services - Design (Phase 2)		$4,495,038		
Consultant Services - CA (Phase 1)			$2,065,509	
Consultant Services - CA (Phase 2)				$1,622,929
Construction (Phase 1)			$73,112,861	
Construction (Phase 2)				$53,879,081
Project Admin Agency (Phase 1 and Phase 2)		$1,628,320	$1,628,320	$1,628,320
Equipment (Phase 1 and Phase 2)			$3,762,394	$2,973,101
Artwork (Phase 1 and Phase 2)				$767,598
Projected Costs/Yr	**$281,446**	**$12,565,593**	**$80,569,084**	**$60,871,029**

5.3 FACILITY OPERATIONS AND MAINTENANCE REQUIREMENTS

5.3.1 OPERATING BUDGET IMPACT

The proposed project is expected to increase the schools ongoing maintenance and operations costs. These costs have been estimated based on assumed occupancy in June 2029 for Phase 1 and June 2031 for Phase 2. Funding for the increase in operating cost will be requested within the overall state appropriated budget.

5.3.2 OPERATING COSTS

The following charts illustrate the projected maintenance and operations costs over the first six biennial of the building occupancy.

	31-32 Bienium		33-34 Bienium		35-37 Bienium	
M&O Expense	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Utilities	$4.65	$4.78	$4.93	$5.08	$5.23	$5.39
Building Maintenance	$3.25	$3.35	$3.45	$3.56	$3.66	$3.77
Custodial & Grounds	$4.25	$4.38	$4.51	$4.65	$4.79	$4.93
Ops & Mgmt Support	$4.45	$4.58	$4.72	$4.86	$5.01	$5.16
Projected Costs/Yr	**$16.60**	**$17.10**	**$17.61**	**$18.14**	**$18.69**	**$19.25**

	37-38 Bienium		39-40 Bienium		41-42 Bienium	
M&O Expense	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**
Utilities	$5.55	$5.71	$5.88	$6.06	$6.24	$6.43
Building Maintenance	$3.89	$4.00	$4.12	$4.25	$4.37	$4.51
Custodial & Grounds	$5.08	$5.23	$5.39	$5.55	$5.72	$5.89
Ops & Mgmt Support	$5.31	$5.47	$5.64	$5.81	$5.98	$6.16
Projected Costs/Yr	**$19.83**	**$20.42**	**$21.03**	**$21.66**	**$22.31**	**$22.98**

5.3.3 MAINTENANCE AND OPERATIONS RESPONSIBILITY

The university as the owner will be responsible for all ongoing maintenance and operations. The building renovation will result in increased maintenance costs for the campus, however energy costs will be significantly reduced. The renovated building will require an increase in custodial, maintenance, and technology staff.

New Building Operating Costs	Change in FTE from current levels
Utilities	No change
Janitorial Services	+ .5 FTE
Grounds	No change
Security	No change
Maintenance and Repair	+ .25 FTE
Management	No change
Technology	+ .25 FTE
Total Increase in FTE	**+1 FTE**

5.4 FURNITURE, FIXTURES AND EQUIPMENT

The Budget for furniture, fixtures, and equipment has been included in the C-100 cost outline. This budget includes built-in items such as casework and equipment that will require coordinating with building systems and utilities. The budget also includes funds for information technology, telecommunication, and audio-visual equipment.

SECTION 6

APPENDICES

6.1 PREDESIGN CHECKLIST

(c) Identify consultant services, DES resources or additional staff needed to manage the project.

L. Schedule

vii. Provide a high-level milestone schedule for the project, including key dates for budget approval, design, bid, acquisition, construction, equipment installation, testing, occupancy and full operation.

viii. Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).

ix. Describe factors that may delay the project schedule, such as an environmentally sensitive location, possible presence of archaeological or historical assets, or possible contamination of the site or buildings undergoing renovation.

x. Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.

xi. Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are part of the process.

Project budget analysis for the preferred alternative

A. Cost estimate. Provide the following:

i. Major assumptions used in preparing the cost estimate
ii. Summary table of Uniformat II Level 2 cost estimates
iii. The C-100 in Excel

B. Proposed funding

i. Identify the fund sources and expected receipt of the funds.
ii. If alternatively financed, such as through a Certificate of Participation (COP), provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates. For assistance, please contact Brianna May, Office of the State Treasurer, 360-902-9022 or email.

C. Facility operations and maintenance requirements

i. Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs) and moving costs.
ii. Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repairs, replacement, and maintenance.
iii. Identify the agency responsible for ongoing maintenance and operations, if not maintained by the owner.

D. Furniture, fixtures, and equipment. Clarify whether furniture, fixtures and equipment are included in the project budget. If not included, explain why.

8.3 Appendices

Appendix 1: Predesign checklist and outline

A predesign should include the content detailed here. OFM will approve limited scope predesigns on a case-by-case basis.

Executive summary

Problem statement, opportunity, or program requirement

☒ Identify the problem, opportunity, or program requirement that the project addresses and how it will be accomplished.

- ☒ Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location, or physical accommodations. Include anticipated caseload projections (growth or decline) and assumptions, if applicable.
- ☒ Explain the connection between the agency's mission, goals, and objectives; statutory requirements; and the problem, opportunity, or program requirements.
- ☒ Describe in general terms what is needed to solve the problem.
- ☒ Include any relevant history of the project, including previous predesigns or budget funding requests that did not go forward to design or construction.

Analysis of alternatives (including the preferred alternative)

- ☒ Describe all alternatives that were considered, including the preferred alternative. Include:
- ☒ A no action alternative.
- ☒ Advantages and disadvantages of each alternative. Please include a high-level summary
- ☒ table with your analysis that compares the alternatives, including the anticipated cost for each alternative.
- ☒ Cost estimates for each alternative:
- ☒ Provide enough information so decision makers have a general understanding of the costs.
- ☒ Complete OFM's Life Cycle Cost Model (RCW 39.35B.050).
- ☒ Schedule estimates for each alternative. Estimate the start, midpoint, and completion dates.

Detailed analysis of preferred alternative

- ☒ Nature of space – how much of the proposed space will be used for what purpose (i.e., office, lab, conference, classroom, etc.)
- ☒ Occupancy numbers.
- ☒ Basic configuration of the building, including square footage and the number of floors.
- ☒ Space needs assessment. Identify the guidelines used.
- ☒ Site analysis:
  - ☒ Identify site studies that are completed or under way and summarize their results.
  - ☒ Location.
  - ☒ Building footprint and its relationship to adjacent facilities and site features. Provide aerial view, sketches of the building site and basic floorplans.
  - ☒ Water rights and water availability.
  - ☒ Stormwater requirements.
  - ☒ Ownership of the site, easements, and any acquisition issues.
  - ☒ Property setback requirements.
  - ☒ Potential issues with the surrounding neighborhood, during construction and ongoing.
  - ☒ Utility extension or relocation issues.
  - ☒ Potential environmental impacts.
  - ☒ Parking and access issues, including improvements required by local ordinances, local road impacts and parking demand.
  - ☒ Impact on surroundings and existing development with construction lay-down areas and construction phasing.
  - ☒ Consistency with applicable long-term plans (such as the Thurston County and Capitol campus master plans and agency or area master plans) as required by RCW 43.88.110.

- ☐ Consistency with other laws and regulations:
  - ☐ High-performance public buildings (Chapter 39.35D RCW).
  - ☐ State efficiency and environmental performance, if applicable (Executive Order 20-01).
  - ☐ State energy standards for clean buildings (RCW 19.27A.210).
  - ☐ Compliance with required vehicle charging capability for new buildings that provide on-site parking (RCW 19.27.540).
  - ☐ Greenhouse gas emissions reduction policy (RCW 70.235.070).
  - ☐ Archeological and cultural resources (Executive Order 21-02 and Section 106 of the National Historic Preservation Act of 1966). If mitigation is anticipated, please note this in the predesign with narrative about how mitigation is worked into the project schedule and budget.
  - ☐ Americans with Disabilities Act (ADA) implementation (Executive Order 96-04).
  - ☐ Compliance with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.
  - ☐ Information required by RCW 43.88.0301(1).
  - ☐ Other codes or regulations.
- ☐ Identify problems that require further study. Evaluate identified problems to establish probable costs and risk.
- ☐ Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.
- ☐ Identify planned technology infrastructure and other related IT investments that affect the building plans.
- ☐ Identify any site-related and/or physical security measures for the project.
- ☐ Describe planned commissioning to ensure systems function as designed.
- ☐ Describe any future phases or other facilities that will affect this project, including impacts to current lease contracts. Include detail on the need to backfill space or cost assumptions for vacant space.
- ☐ Provide a comparative discussion of the pros and cons of the project delivery methods considered for this project and offer a recommendation of proposed procurement method for the preferred alternative. The proposed method of project delivery must be justified.
- ☐ Describe how the project will be managed within the agency.
- ☐ Schedule.
- ☐ Provide a high-level milestone schedule for the project, including key dates for budget
- ☐ approval, design, bid, acquisition, construction, equipment installation, testing, occupancy and full operation.
- ☐ Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).
- ☐ Describe factors that may delay the project schedule.
- ☐ Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
- ☐ Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are a part of the process.

Project budget analysis for the preferred alternative

- ☒ Cost estimate.
  - ☒ Major assumptions used in preparing the cost estimate.
  - ☒ Summary table of Uniformat Level II cost estimates.
  - ☒ The C-100.
- ☒ Proposed funding.
  - ☒ Identify the fund sources and expected receipt of the funds.
  - ☒ If alternatively financed, such as through a COP, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.
- ☒ Facility operations and maintenance requirements.
  - ☒ Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs) and moving costs.
  - ☒ Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repair, replacement, and maintenance.
  - ☒ Identify the agency responsible for ongoing maintenance and operations, if not maintained by the owner.
- ☒ Clarify whether furniture, fixtures and equipment are included in the project budget. If not included, explain why.

Predesign appendices

- ☒ Completed Life Cycle Cost Model.
- ☒ A letter from DAHP.
- ☒ Title report for projects including proposed acquisition.

Appendix 2: Glossary

Acquisition. This type of project includes the acquisition of land, structures, and buildings. These are fixed assets that have no relationship to the addition or improvement to, or the repair or replacement of, existing fixed assets. Examples of an acquisition are the purchase of a tract of land or a building.

Alternate financing. Proposals that cover a wide range of financial contracts that call for the development or use of space by state agencies through a contractual arrangement with a developer or financing entity. Financing may involve the sale of debt obligations (certificates of participation, or COPs, through the State Treasurer) or funding from a private developer. Title to the property involved may transfer to the state either upon exercise of an option or at the termination of the contract.

Constructability review. A review by an independent consultant or contractor to determine if a project can be physically built as designed. This is to reduce construction change orders and claims. Conduct this review at 75–95 percent completion of the construction documents.

Consultant. A person or entity who provides advice or services to an agency/institution.

Contractor. A person, firm, or corporation who, in the pursuit of an independent business, undertakes or submits a bid to construct, alter, repair, add to, subtract from, improve, move, or

SECTION 6

APPENDICES

6.2 ROOM DIAGRAMS & DATA SHEETS

PSYCHOLOGY

DEPARTMENT: Psychology Research & Instructional Lab	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 1.1
SPACE NAME: Research Suite - 6 Pod	**# of Students:** Varies	**NSF:** 800	

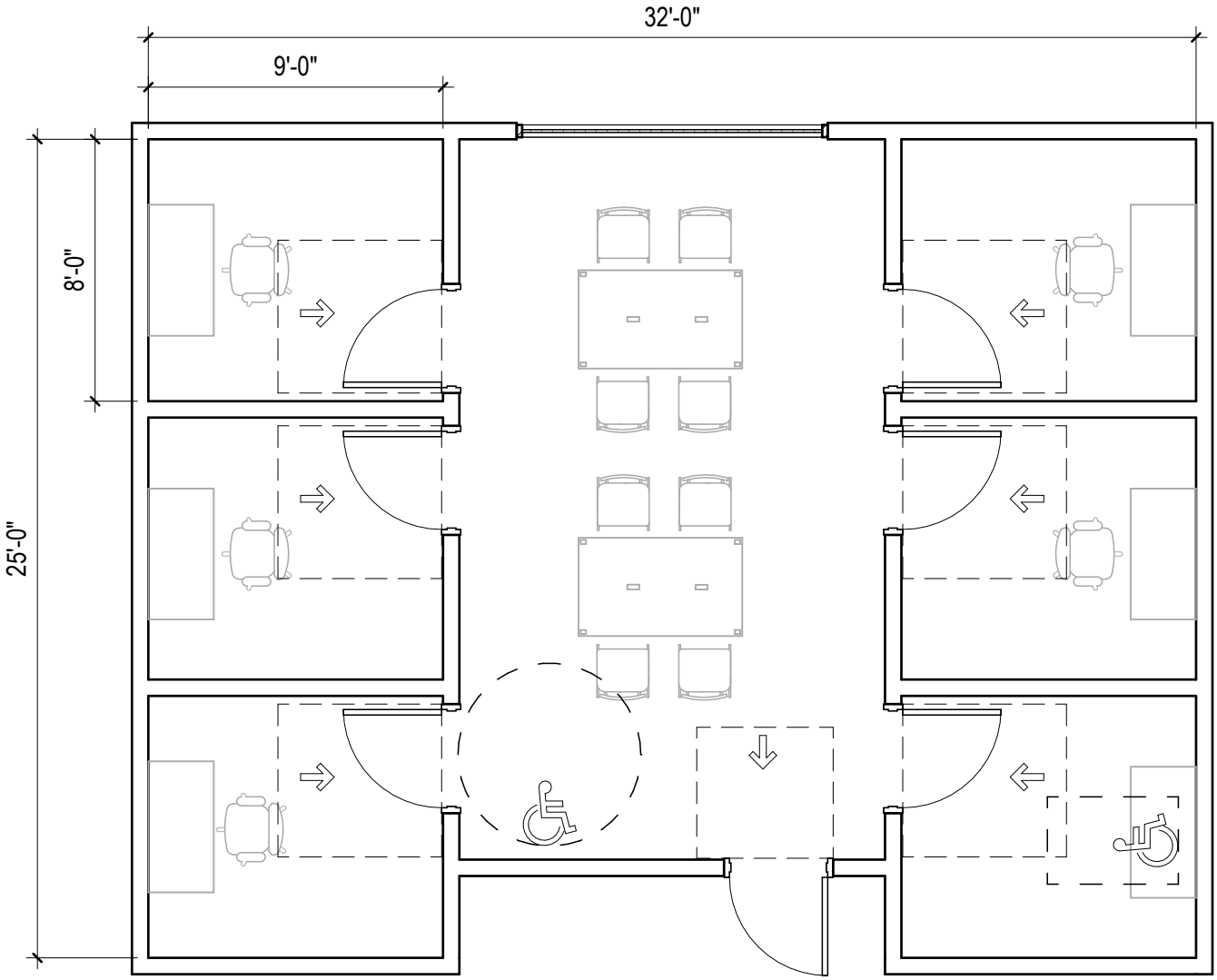
Describe the function of the space:

6 separate rooms off of a central space for investigators and research assistants to introduce and monitor research.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	No Glazing
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

PSYCH - SUITE 6 POD

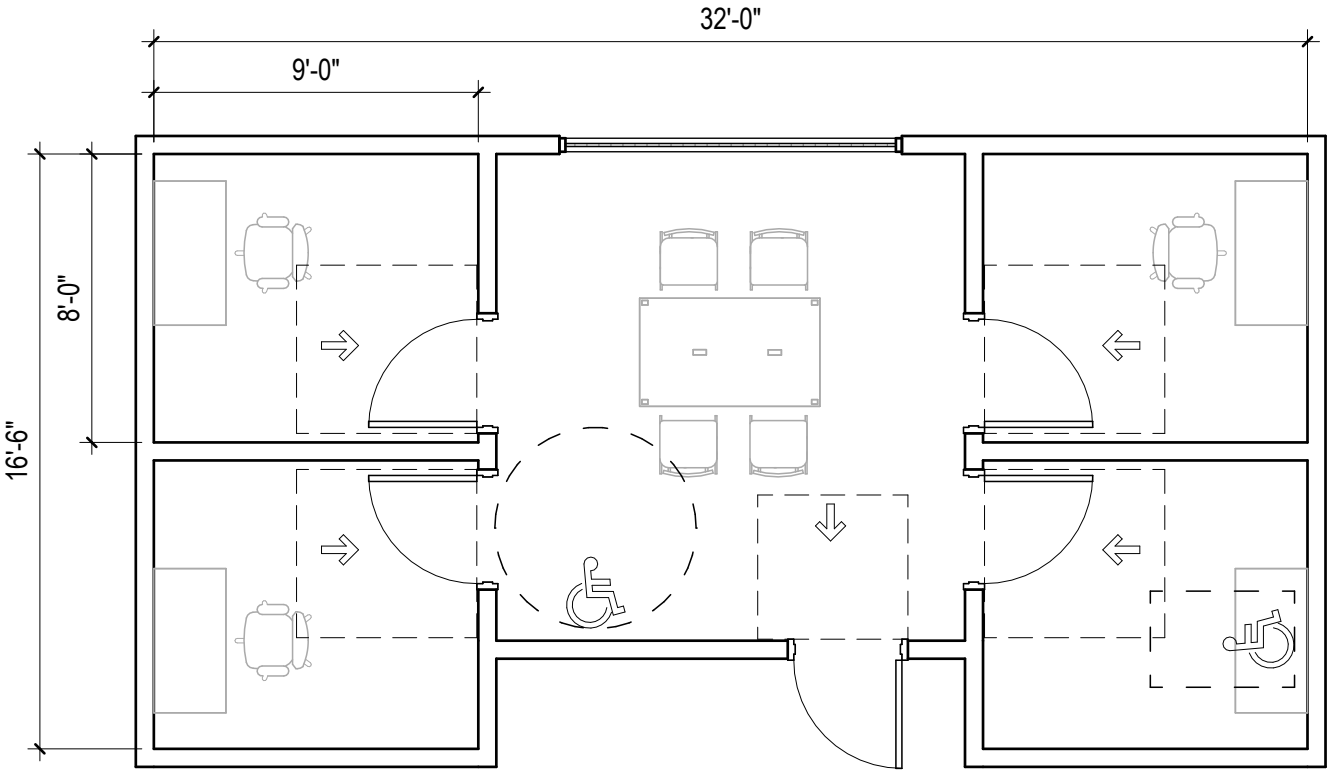
DEPARTMENT: School of Psychology Research & Instructional Lab	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 1.2
SPACE NAME: Research Suite - 4 Pod	**# of Students:** Varies	**NSF:** 530	

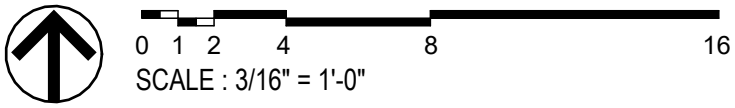
Describe the function of the space:

4 separate rooms off of a central space for investigators and research assistants to introduce and monitor research - used for cognitive studies.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	No Glazing
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

PSYCH - SUITE 4 POD

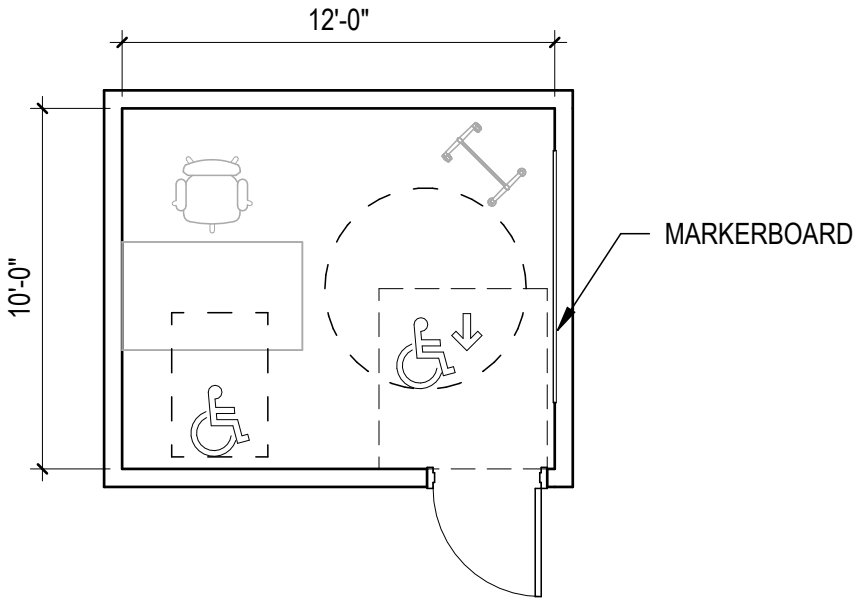
DEPARTMENT: School of Psychology Research & Instructional Lab	**# of Faculty/Staff:** 1	**# OF SPACES:** 8	**SPACE ID NO:** 1.3
SPACE NAME: Research Lab	**# of Students:** 1	**NSF:** 960	

Describe the function of the space:

Small adaptable rooms for research use by tenure and tenure track faculty. Rooms should have no windows.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	No Glazing
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - RESEARCH LAB

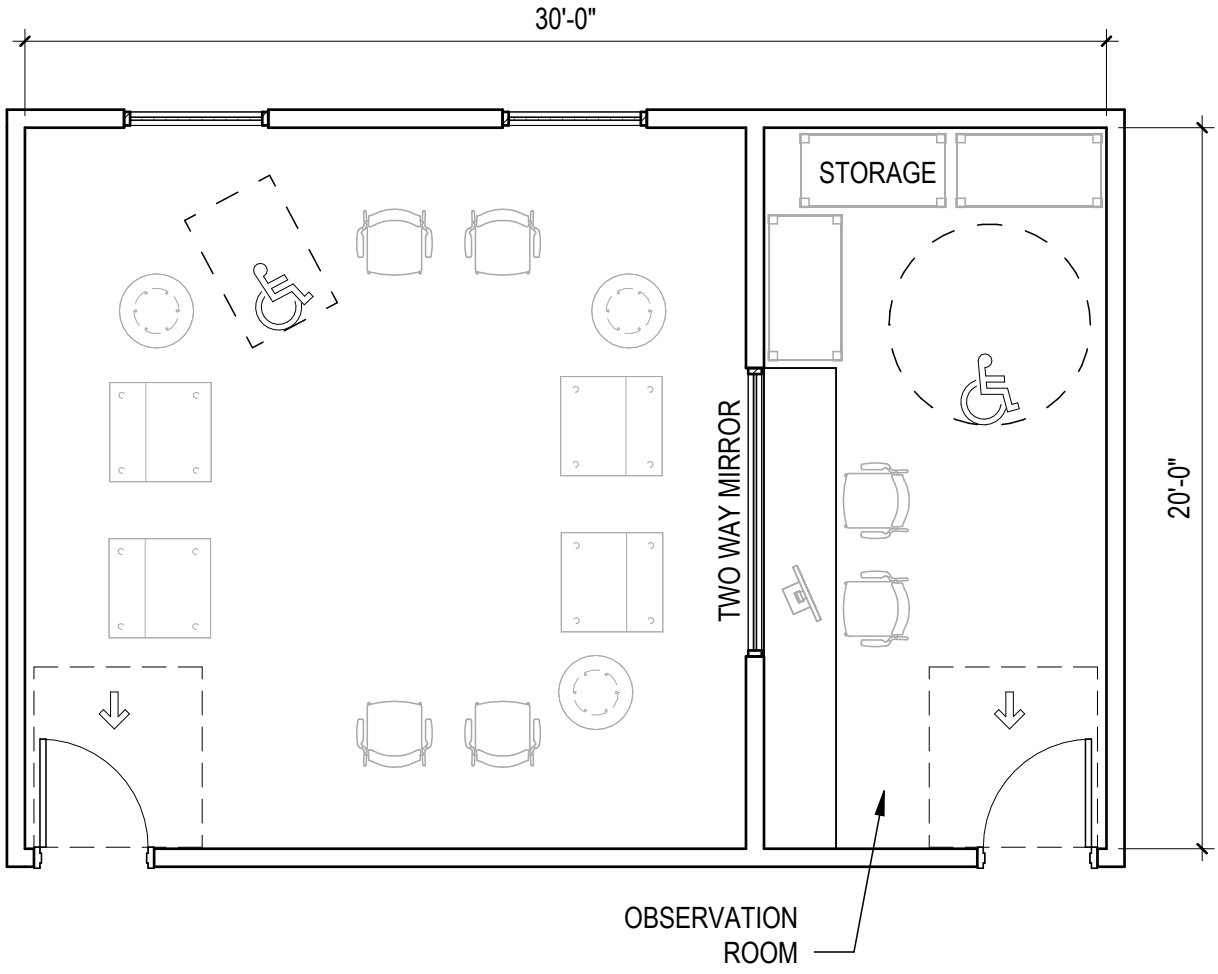
DEPARTMENT: School of Psychology Research & Instructional Lab	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 1.5
SPACE NAME: Play/Group Therapy & Autism Center	**# of Students:** Varies	**NSF:** 600	

Describe the function of the space:

Large room with adjacent observation/control room and storage space for sensory materials.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - PLAY / GROUP THERAPY

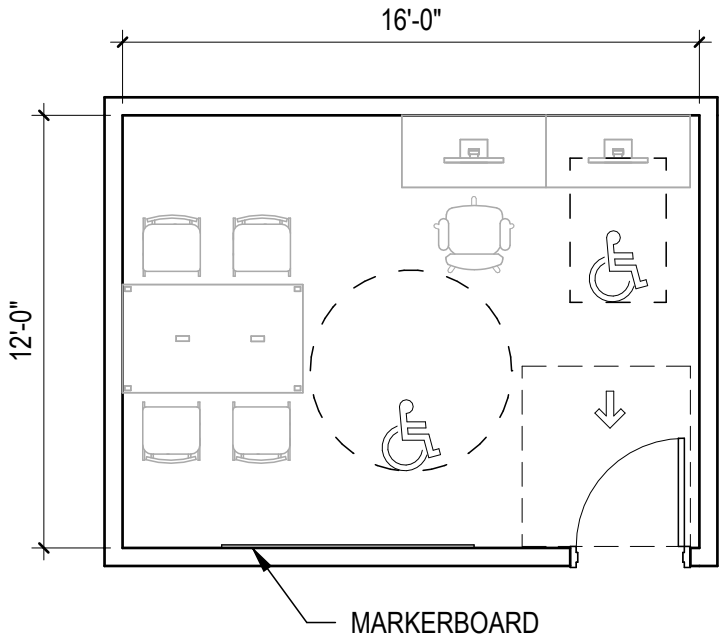
DEPARTMENT: School of Psychology Research & Instructional Lab	**# of Faculty/Staff:** TBD	**# OF SPACES:** 1	**SPACE ID NO:** 1.7
SPACE NAME: Research Assistant Area	**# of Students:** 6	**NSF:** 200	

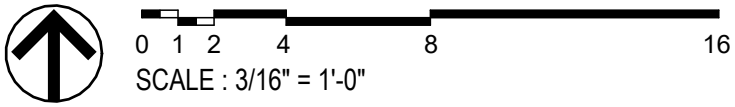
Describe the function of the space:

Place for research assistants to complete confidential data entry and laptop use.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	No Glazing
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

PSYCH - RESEARCH ASSITANT AREA

DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 1.9/1.10
SPACE NAME: Reception / Waiting	**# of Students:** 10	**NSF:** 480	

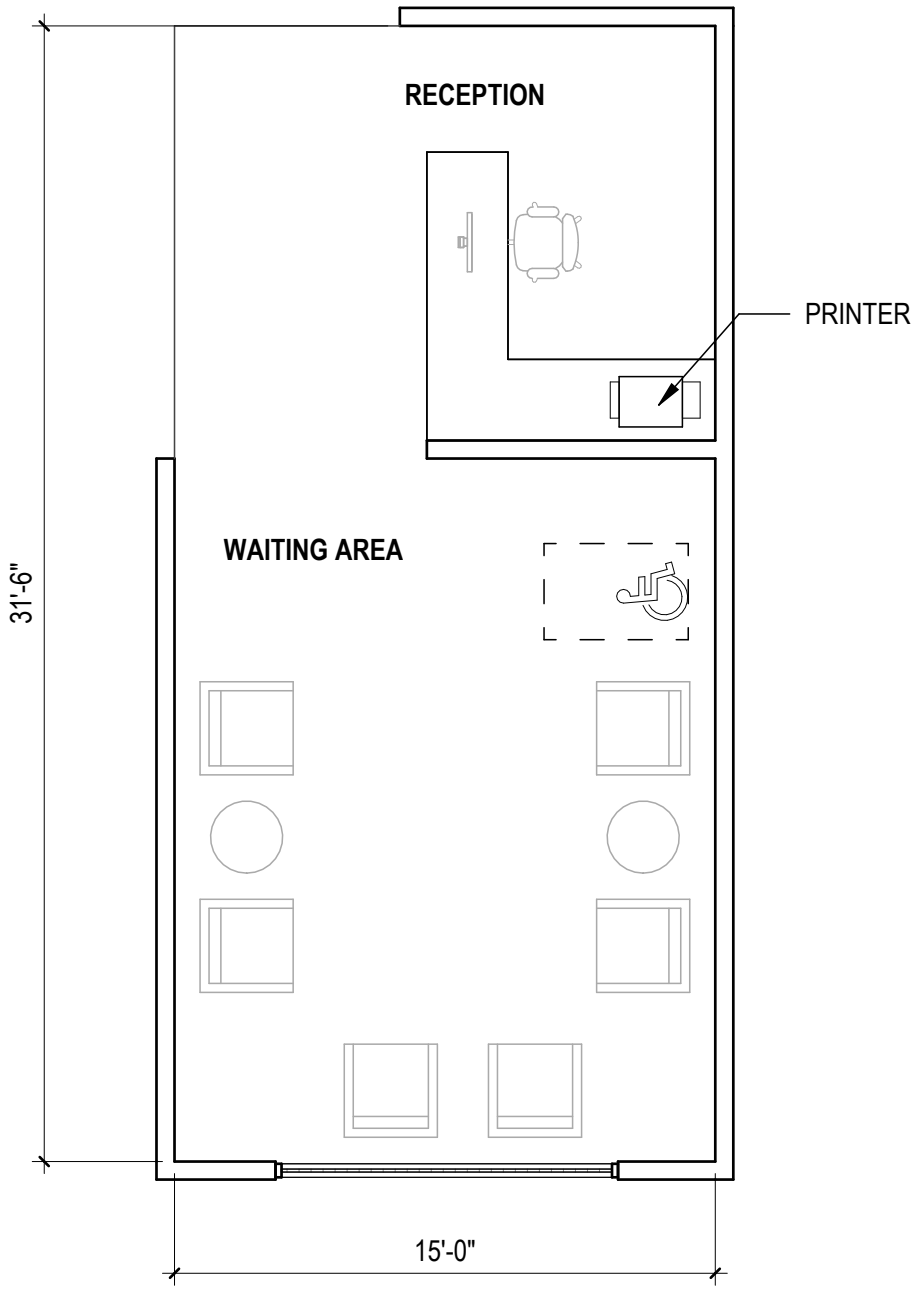
Describe the function of the space:

Reception and waiting area to clients utilizing the Training Clinic.

Adjacencies: Training Clinic Entry & Group Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

PSYCH -
TRAINING CLINIC RECEPTION / WAITING

DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 5	**SPACE ID NO:** 1.4
SPACE NAME: Observation Suite	**# of Students:** 1-3	**NSF:** 2,100	

Describe the function of the space:

These suites will double as Treatment Rooms for the Training Clinic and Observation Rooms for student practice in mental health counseling and evaluation.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	Two-Way Mirror
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

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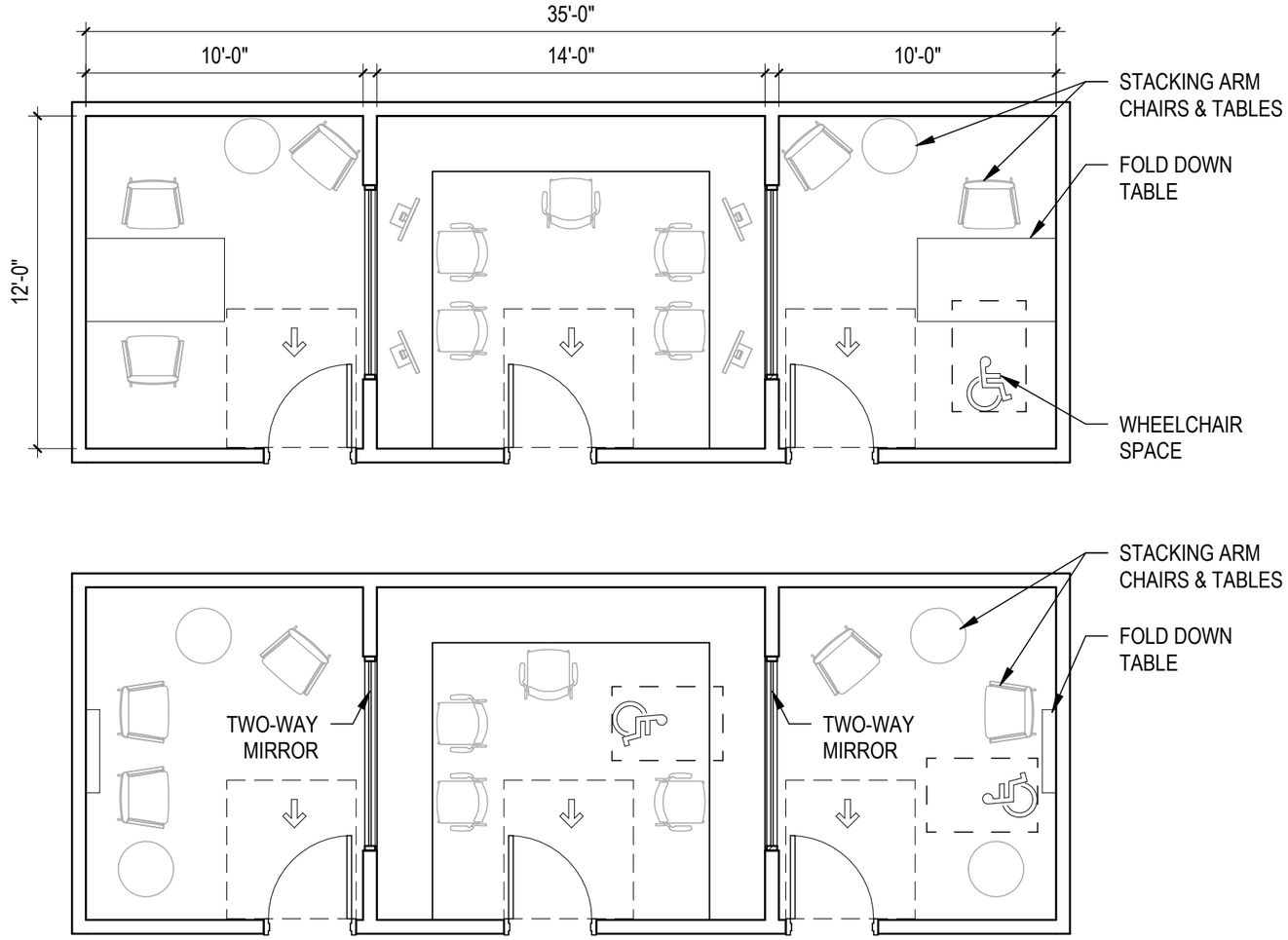


PSYCH - OBSERVATION SUITE

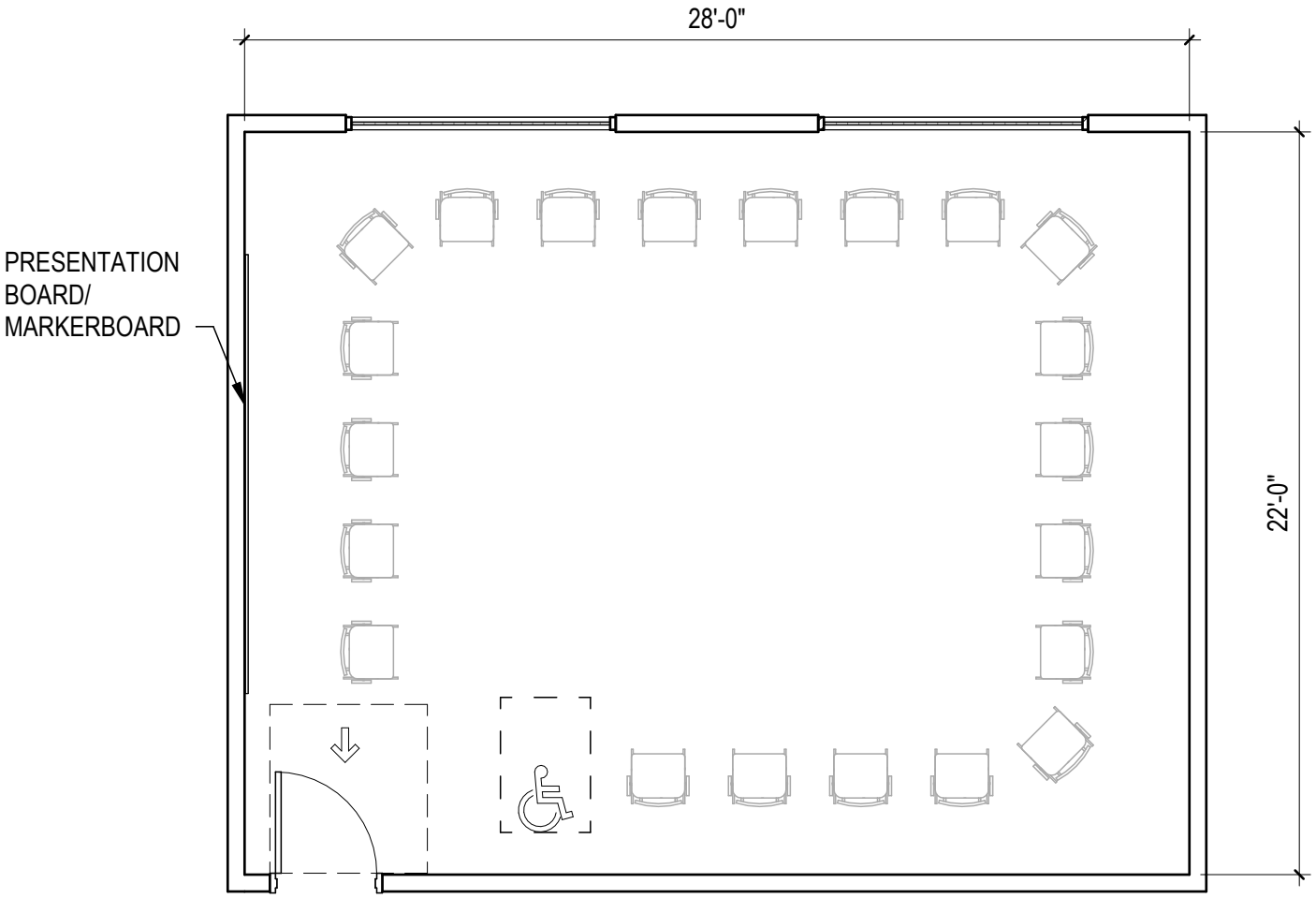
DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 1.12
SPACE NAME: Group Room	**# of Students: 20**	**NSF:** 620	

Describe the function of the space:

Space with flexible stackable seating and markerboard for group therapy sessions.

Adjacencies: Reception & Waiting

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - GROUP ROOM

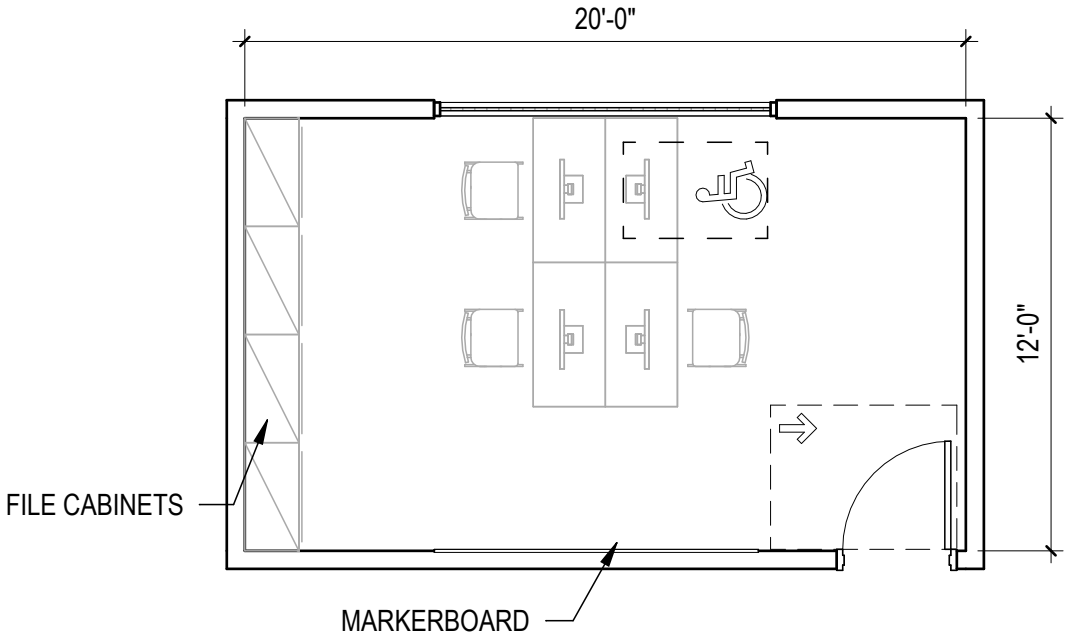
DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** 4	**# OF SPACES:** 1	**SPACE ID NO:** 1.13
SPACE NAME: Work Area	**# of Students:** -	**NSF:** 240	

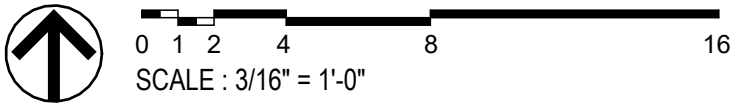
Describe the function of the space:

Data entry space with filing area and printer for those working in the clinic.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





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PSYCH - WORK AREA

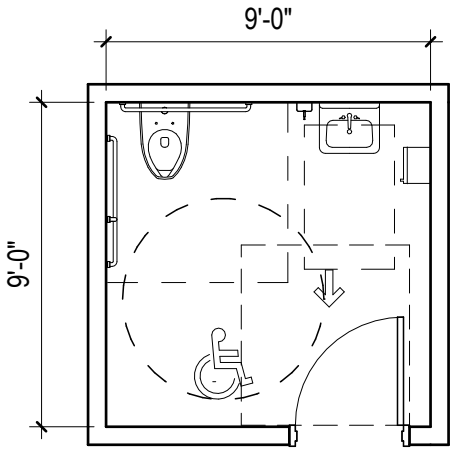
DEPARTMENT: School of Psychology Training Clinic	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 1.14
SPACE NAME: Toilet Room	# of Students: 1	NSF: 85	

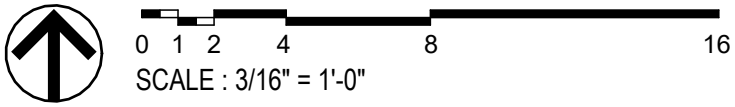
Describe the function of the space:

Restroom use by Training Clinic staff and clients.

Adjacencies: Waiting, Group Room, & Treatment Rooms

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Porcelain Tile	-	-
base	casework finishes	acoustic
Porcelain Tile	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Ceramic Tile	Gypsum	-





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PSYCH - TOILET ROOM

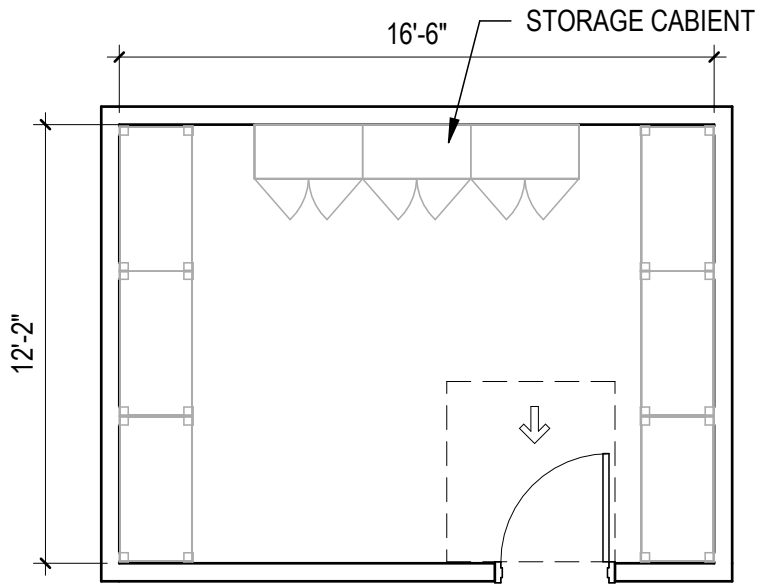
DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 1.15
SPACE NAME: Storage	**# of Students:** -	**NSF:** 200	

Describe the function of the space:

Storage for test kits, materials, and therapeutic devices.

Adjacencies: Reception & Work Area

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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PSYCH - STORAGE

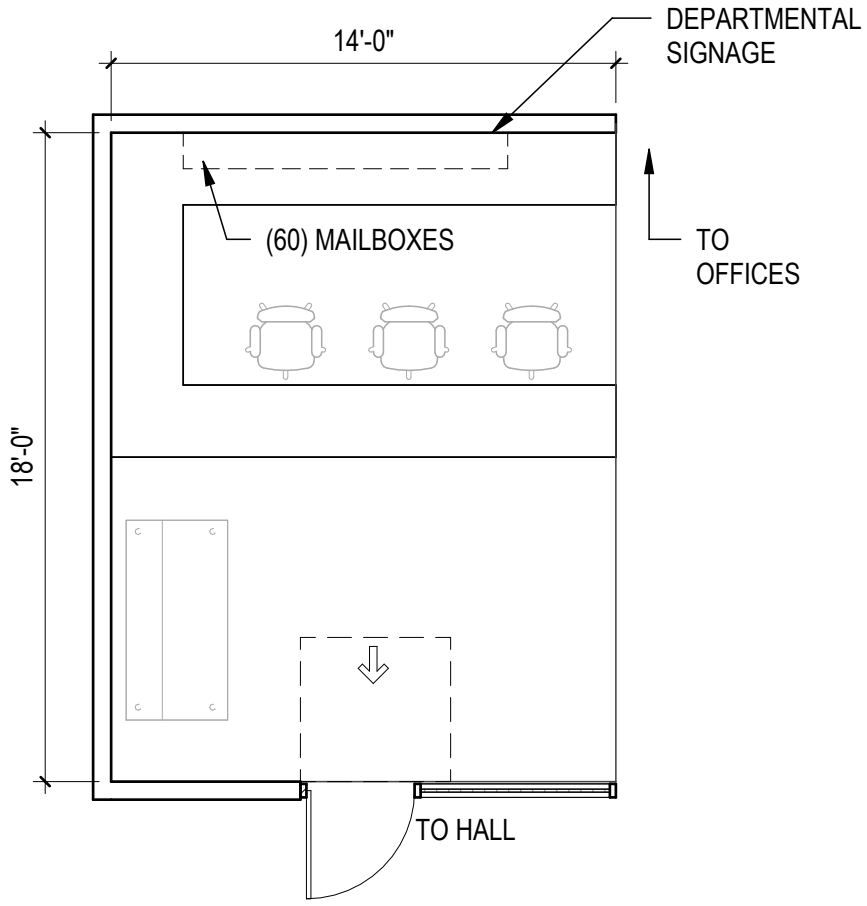
DEPARTMENT: School of Psychology Office & Administration	**# of Faculty/Staff:** 1-3	**# OF SPACES:** 1	**SPACE ID NO:** 1.16
SPACE NAME: Main Office Entry	**# of Students:** 1-3	**NSF:** 250	

Describe the function of the space:

Main office entry suite and point of contact for School of Psychology.

Adjacencies: Director Office, (3) Staff Offices, Psi Chi Office, & Break / Work Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Accoustic Tile	-



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PSYCH - MAIN OFFICE ENTRY

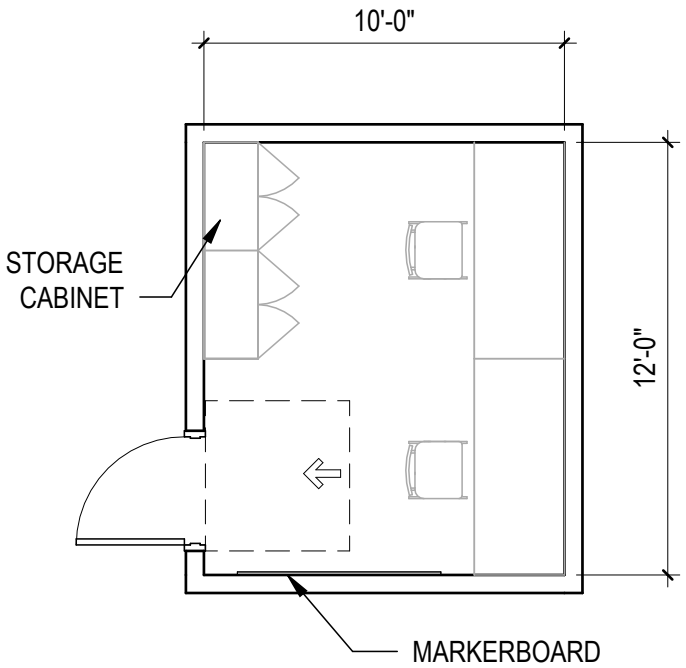
DEPARTMENT: School of Psychology Office & Administration	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 1.21
SPACE NAME: Office - Psi Chi	**# of Students:** 2	**NSF:** 120	

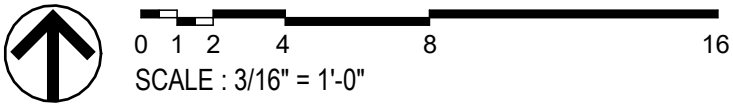
Describe the function of the space:

Office for Psi Chi club leaders to conduct operational activities and work with club member's confidential information.

Adjacencies: Main Office Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





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PSYCH - OFFICE PSI CHI

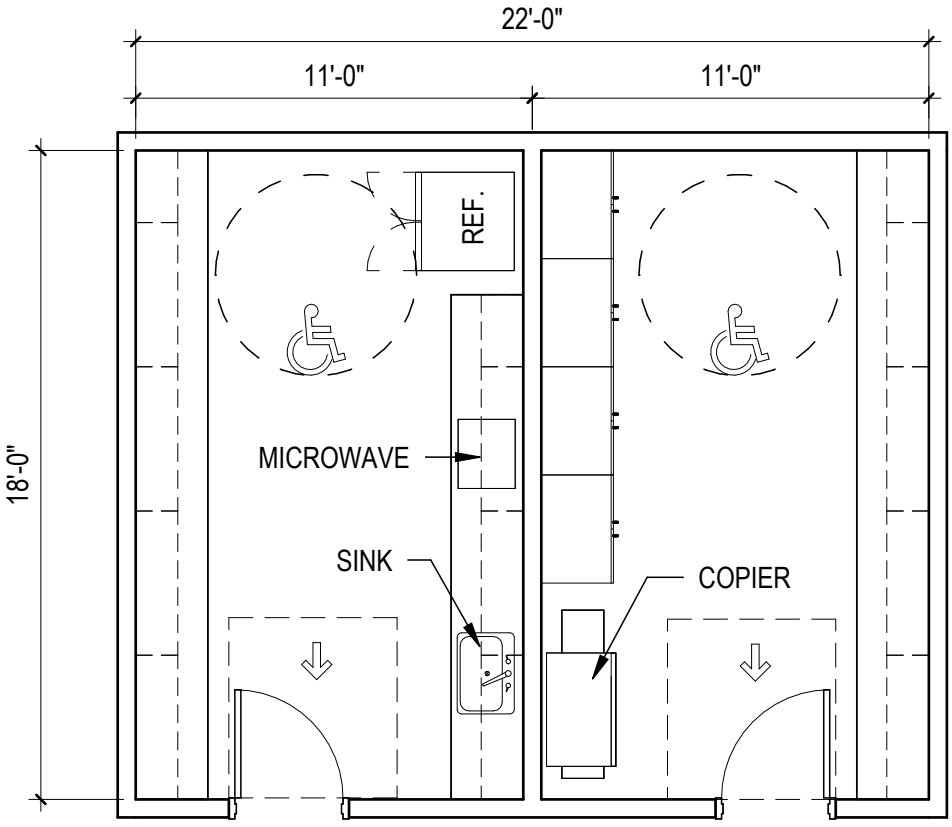
DEPARTMENT: School of Psychology Office & Administration	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 1.23
SPACE NAME: Break / Work Room	**# of Students:** -	**NSF:** 400	

Describe the function of the space:

Break / Work Room with kitchenette, copier, and office supplies.

Adjacencies: Main Office Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - BREAK / WORK ROOM

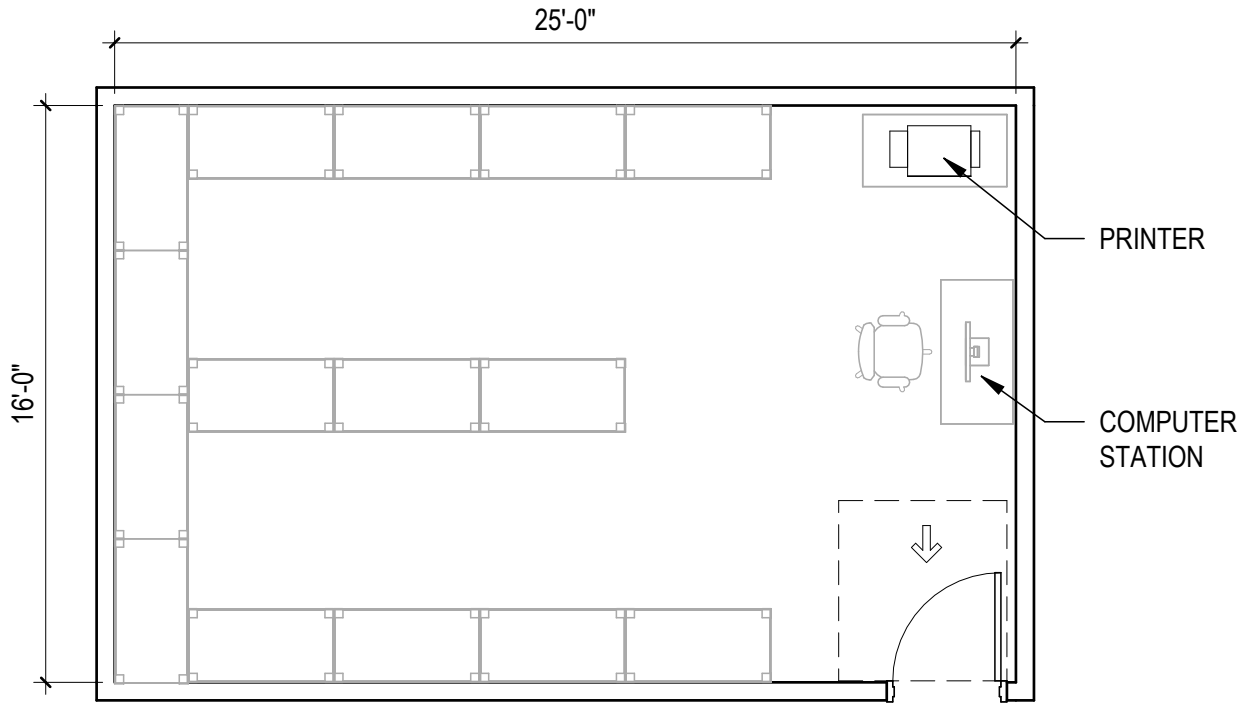
DEPARTMENT: School of Psychology Office & Administration	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 1.22
SPACE NAME: Storage - Testing	**# of Students:** -	**NSF:** 400	

Describe the function of the space:

Storage with deep shelving and computer station for testing checkout and printing.

Adjacencies: Main Office Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



0 1 2 4 8 16

SCALE : 3/16" = 1'-0"

PSYCH - STORAGE TESTING

EDUCATION

DEPARTMENT: School of Education Instructional Lab	**# of Faculty/Staff:** 1	**# OF SPACES:** 2	**SPACE ID NO:** 2.1
SPACE NAME: Science Education Lab	**# of Students: 24**	**NSF:** 2400	

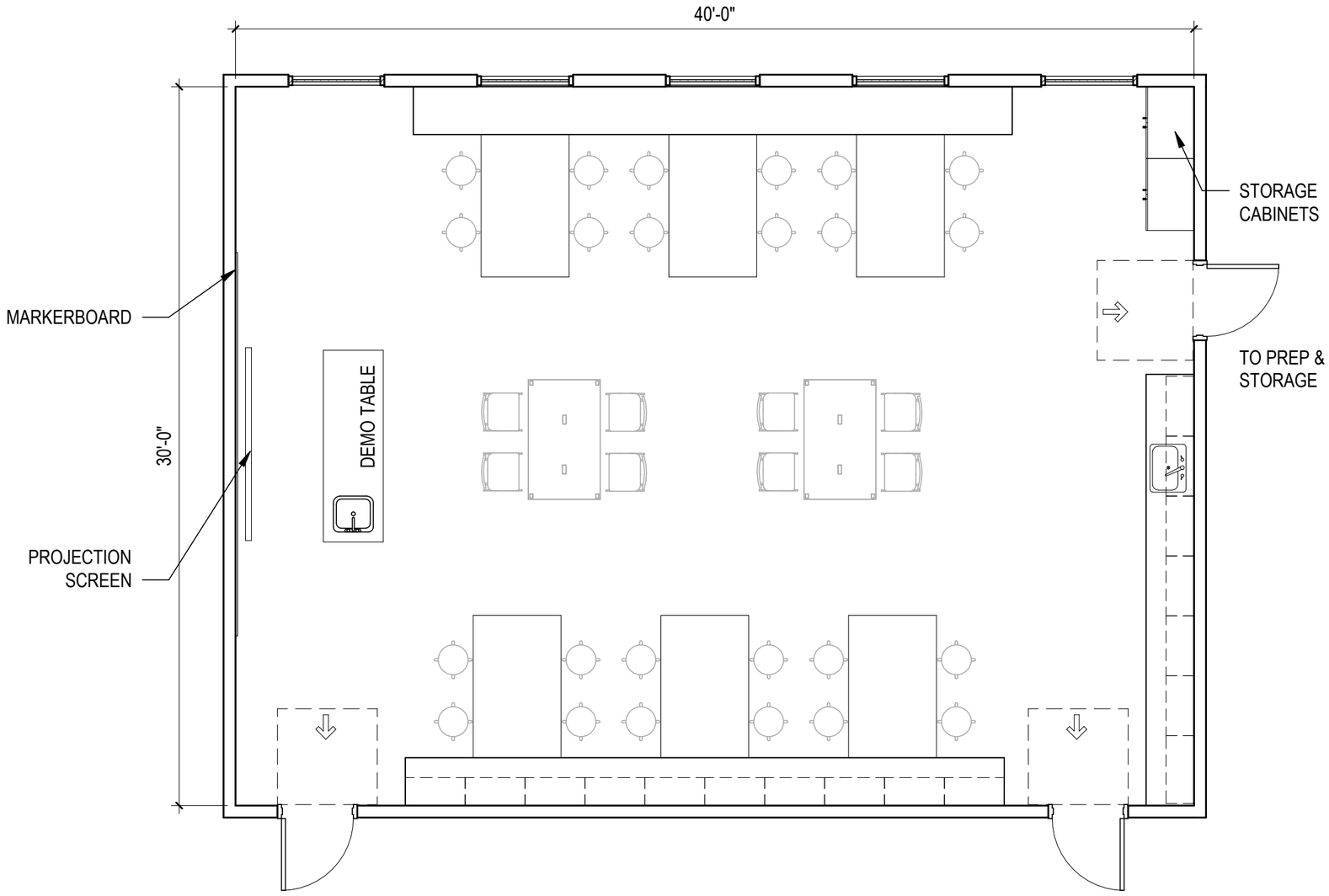
Describe the function of the space:

Lab outfitted as a k-12 science classroom with no fume hood or chemical use. Used for Social Studies too.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate & Epoxy	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

ED - SCIENCE EDUCATION LAB

DEPARTMENT: School of Education Instructional Lab	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 2.2
SPACE NAME: Literacy Library Lab	**# of Students: 24**	**NSF:** 1,200	

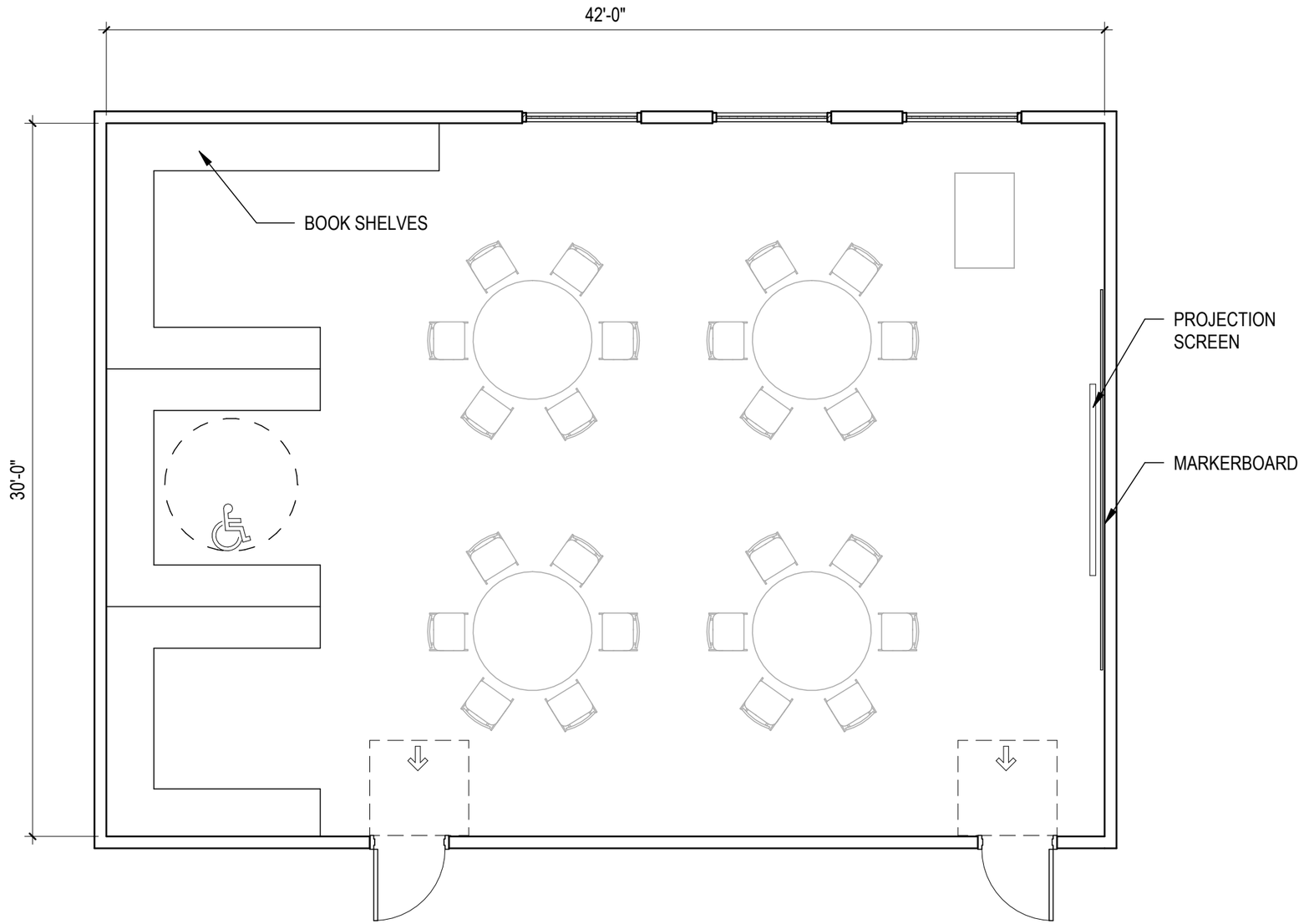
Describe the function of the space:

Lab outfitted as a k-12 library with instructional area.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

ED - LITERACY LIBRARY LAB

DEPARTMENT: School of Education Instructional Lab	**# of Faculty/Staff:** 1-4	**# OF SPACES:** 1	**SPACE ID NO:** 2.6
SPACE NAME: Sci Ed Prep & Storage	**# of Students:** -	**NSF:** 250	

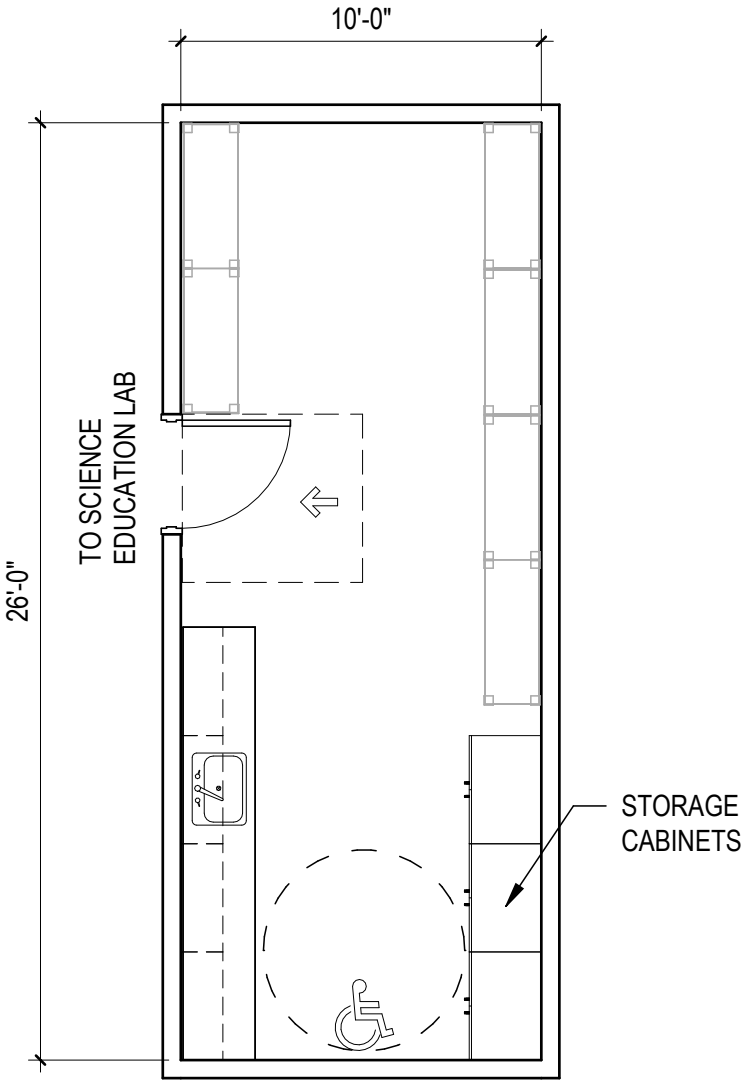
Describe the function of the space:

Storage to store and prepare materials for Science Education.

Adjacencies: Science Education Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate & Epoxy	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

ED - SCI ED PREP & STORAGE

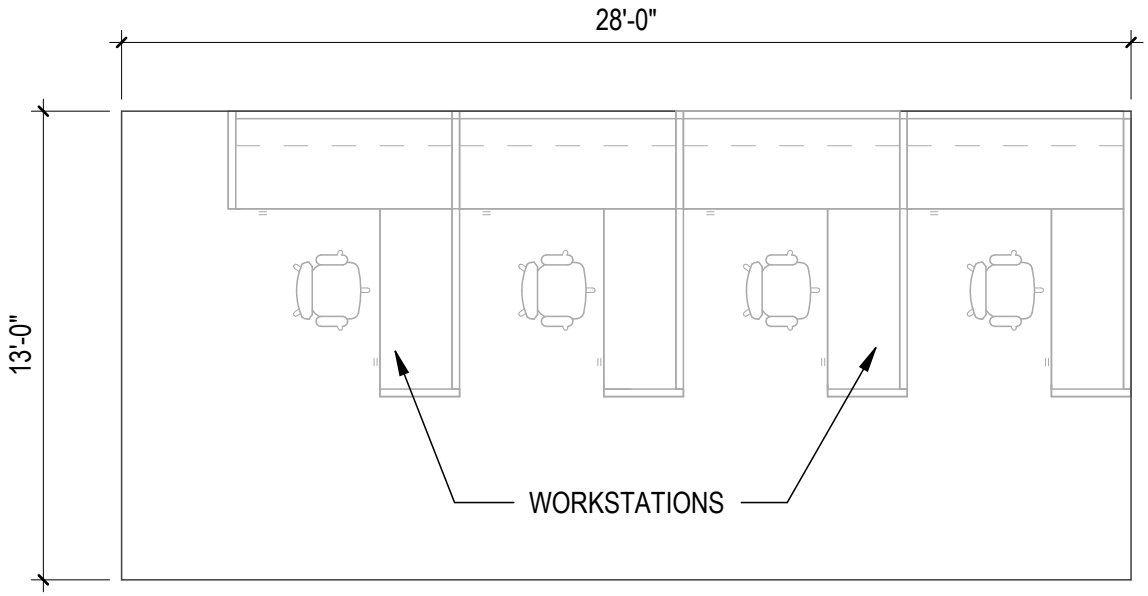
DEPARTMENT: School of Education Field Experience Program	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 2.8
SPACE NAME: Open Workstations	**# of Students:** 8	**NSF:** 360	

Describe the function of the space:

Workstations for the Field Experience Program.

Adjacencies: Offices

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

ED - OPEN WORKSTATIONS

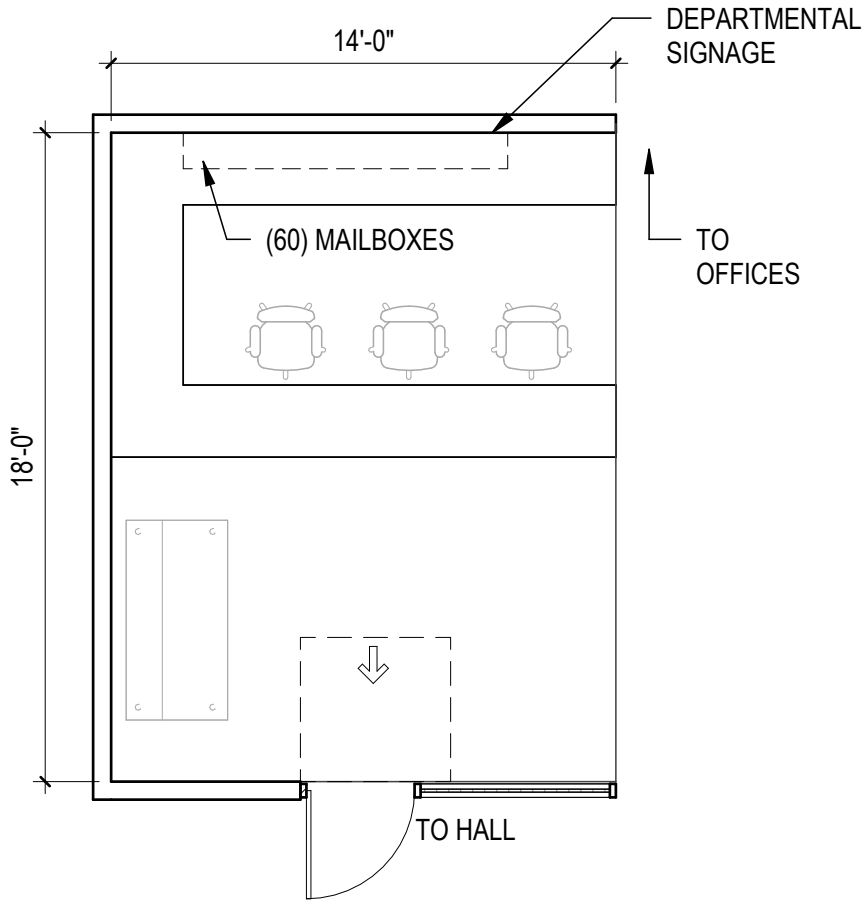
DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** 1-3	**# OF SPACES:** 1	**SPACE ID NO:** 2.14
SPACE NAME: Main Office Entry	**# of Students:** 1-3	**NSF:** 200	

Describe the function of the space:

Main office entry suite and point of contact for the School of Education.

Adjacencies: Director Office & Work Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

ED - MAIN OFFICE ENTRY

DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 2.12
SPACE NAME: Clothing Closet	**# of Students:** -	**NSF:** 500	

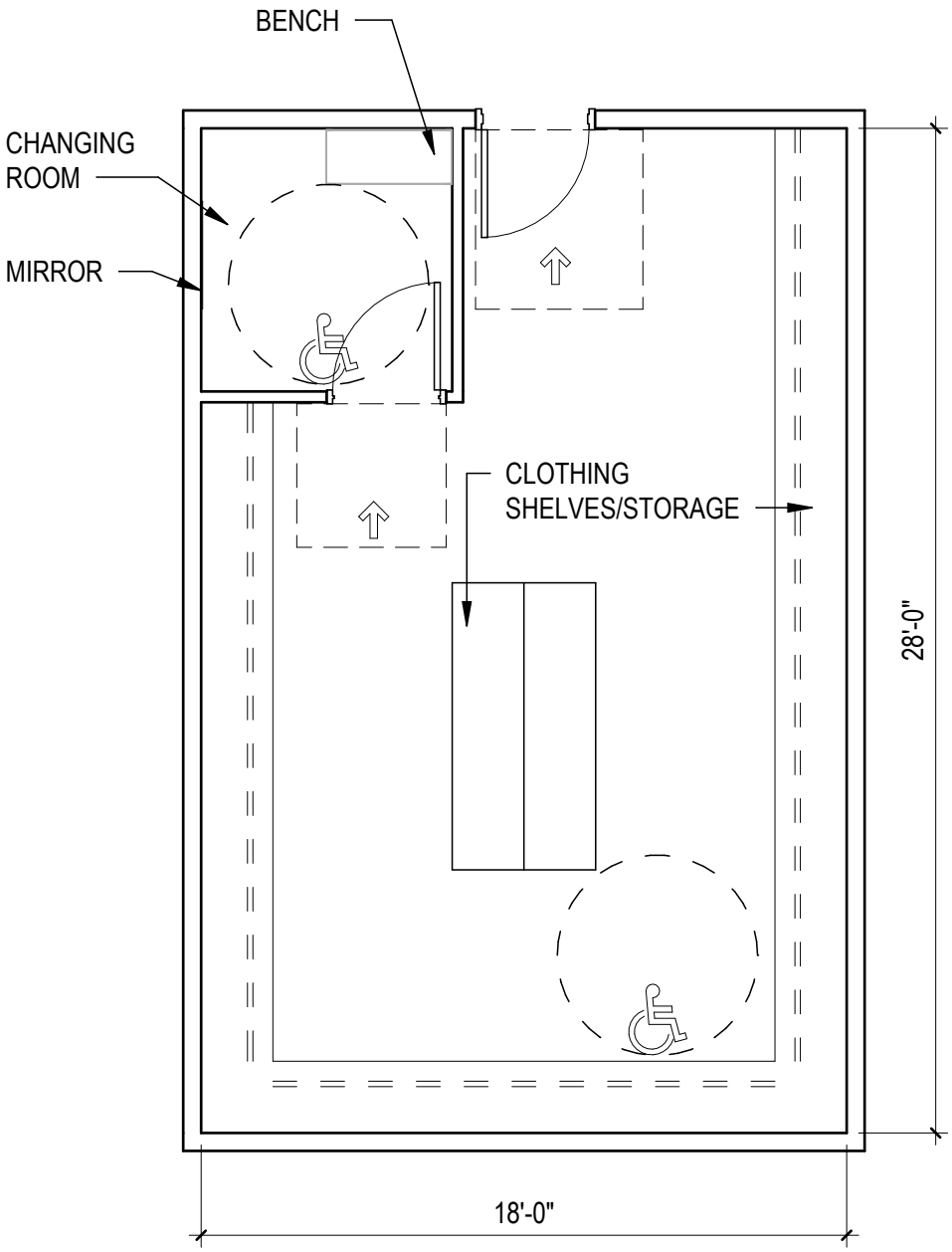
Describe the function of the space:

Space for clothing storage, display, and changing room to support this grant funded program.

Adjacencies: Field Experience Suite

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

ED - CLOTHING CLOSET

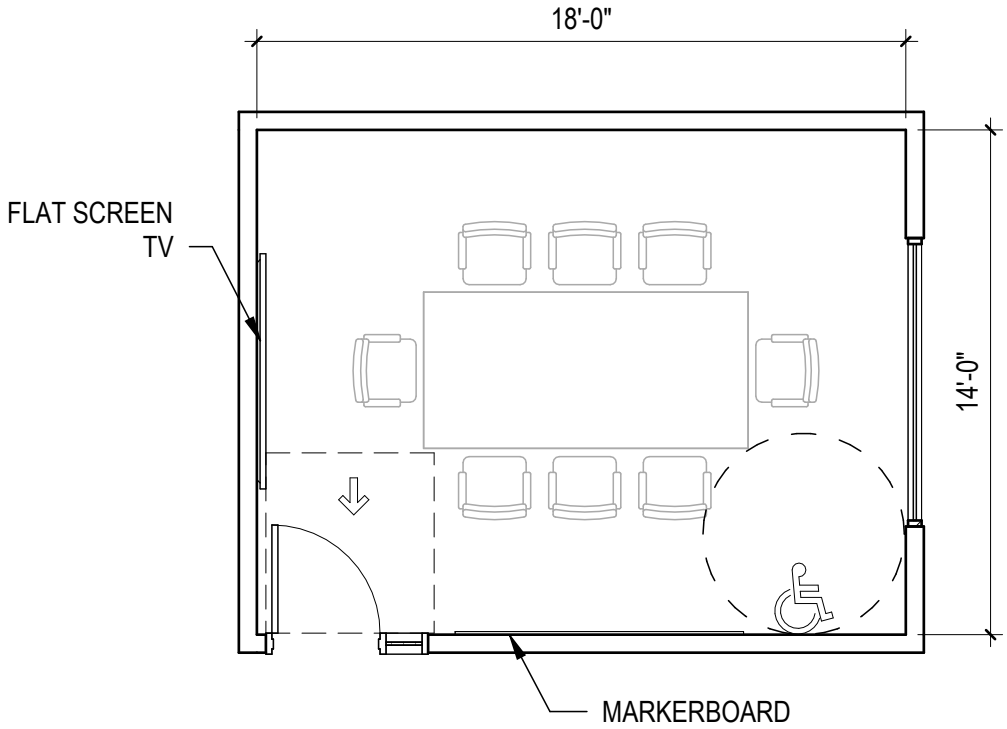
DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** 8	**# OF SPACES:** 1	**SPACE ID NO:** 5.13
SPACE NAME: Meeting Room	**# of Students:** -	**NSF:** 250	

Describe the function of the space:

Meeting space for regular use by School of Education faculty and staff.

Adjacencies: Main Office Entry & Director Office

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SHARED SPACES - MEETING ROOM 8

DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** 16	**# OF SPACES:** 1	**SPACE ID NO:** 5.14
SPACE NAME: Break Room	**# of Students:** -	**NSF:** 560	

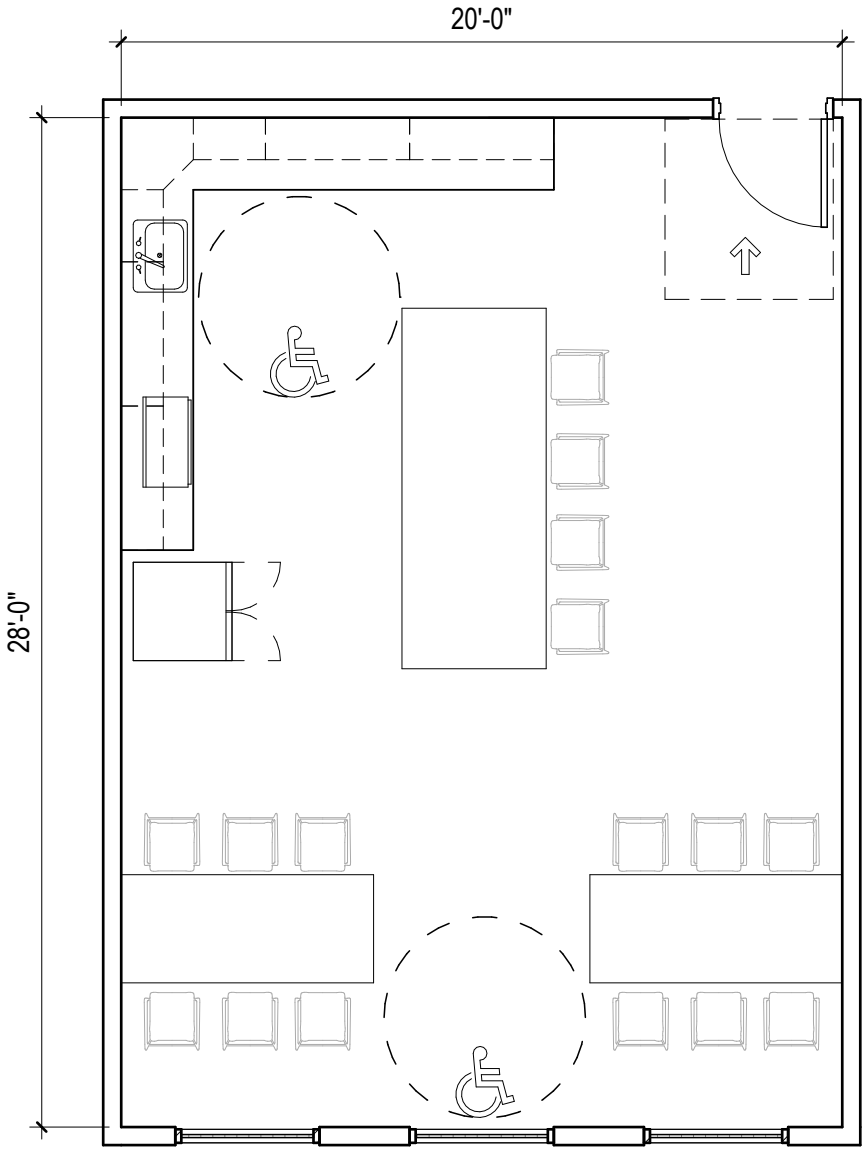
Describe the function of the space:

Break Room and gathering space for School of Education faculty and staff.

Adjacencies: Offices

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - BREAK ROOM

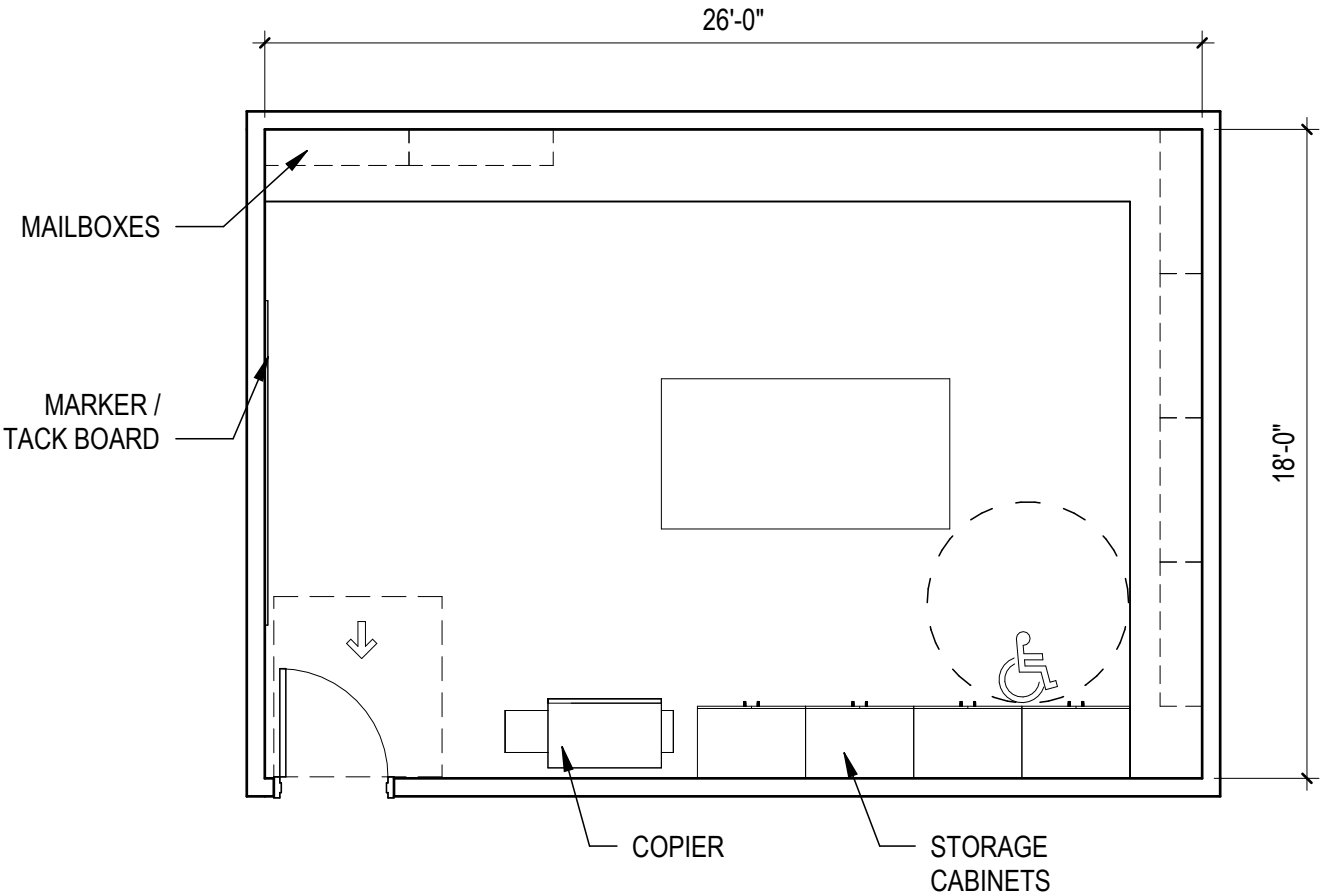
DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** 3	**# OF SPACES:** 1	**SPACE ID NO:** 5.15
SPACE NAME: Work Room	**# of Students:** -	**NSF:** 460	

Describe the function of the space:

Work Room and support space for School of Education faculty and staff.

Adjacencies: Offices

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SHARED SPACES - WORK ROOM

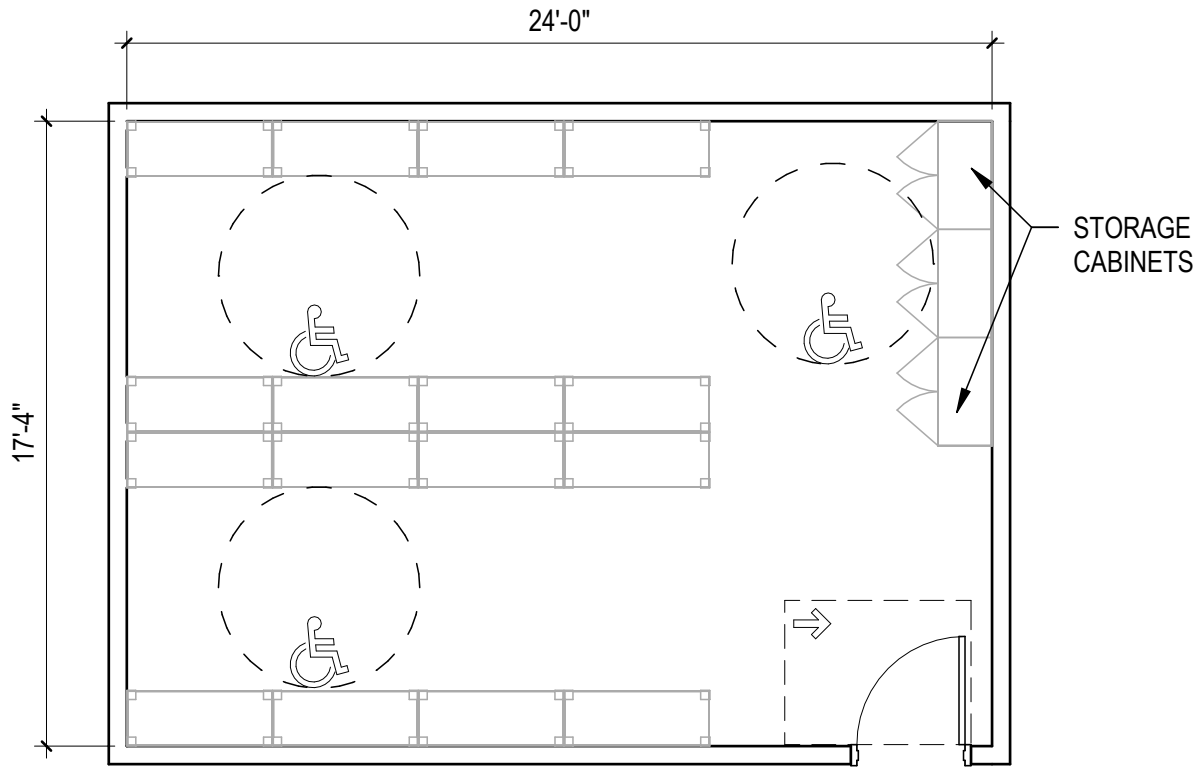
DEPARTMENT: School of Education Office & Administration	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 2.13
SPACE NAME: Storage	# of Students: -	NSF: 400	

Describe the function of the space:

Storage space for educational materials used in the instructional labs.

Adjacencies: Instructional Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

ED - STORAGE

COUNSELING & WELLNESS SERVICES

DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: 2	# OF SPACES: 1	SPACE ID NO: 3.1
SPACE NAME: Counseling Reception	# of Students: Varies	NSF: 600	

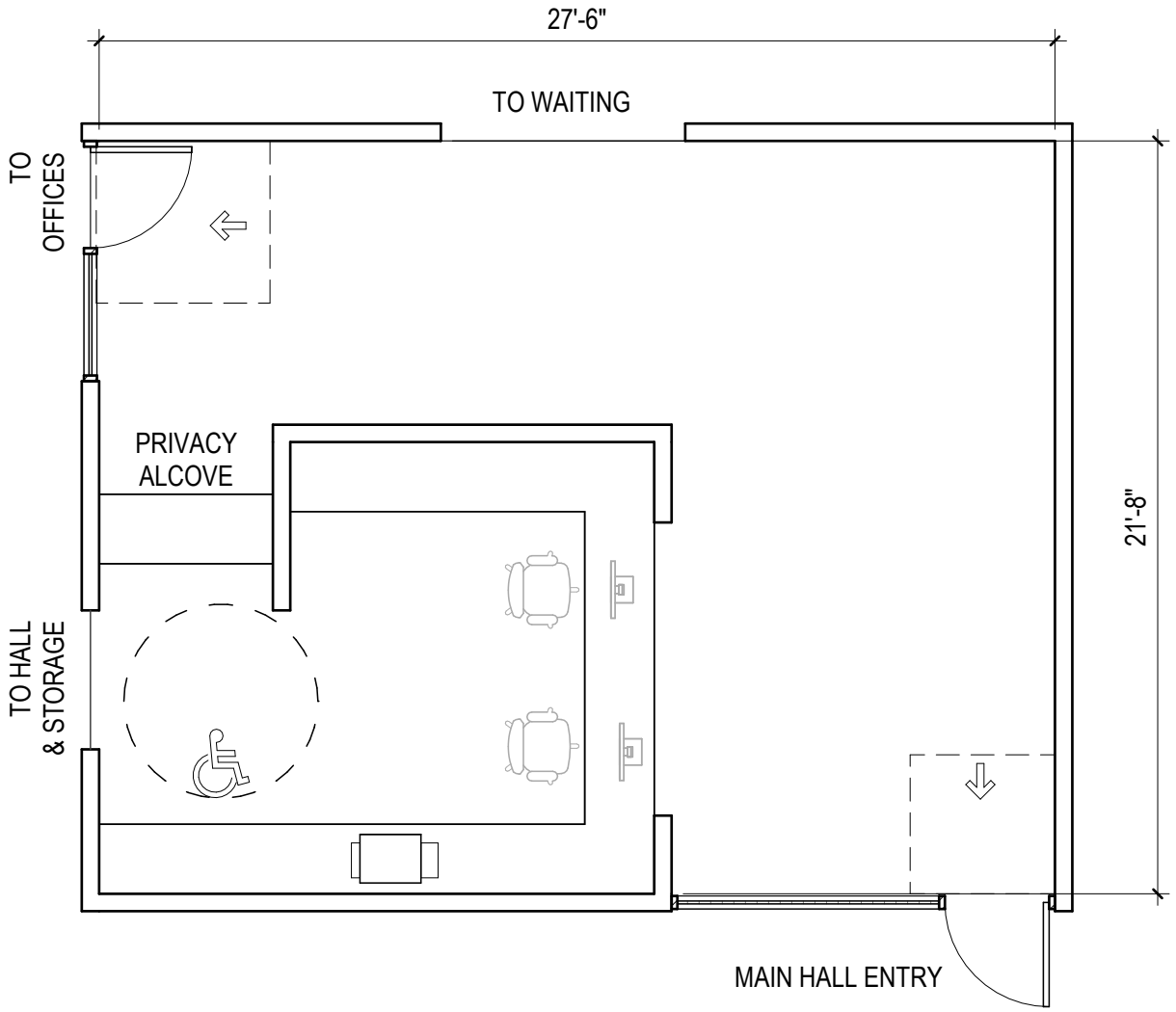
Describe the function of the space:

Reception and check-in area for Counseling Services clients.

Adjacencies: Entry, Waiting Area, & Controlled Storage

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems - Translucent
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

C&WS - COUNSELING RECEPTION

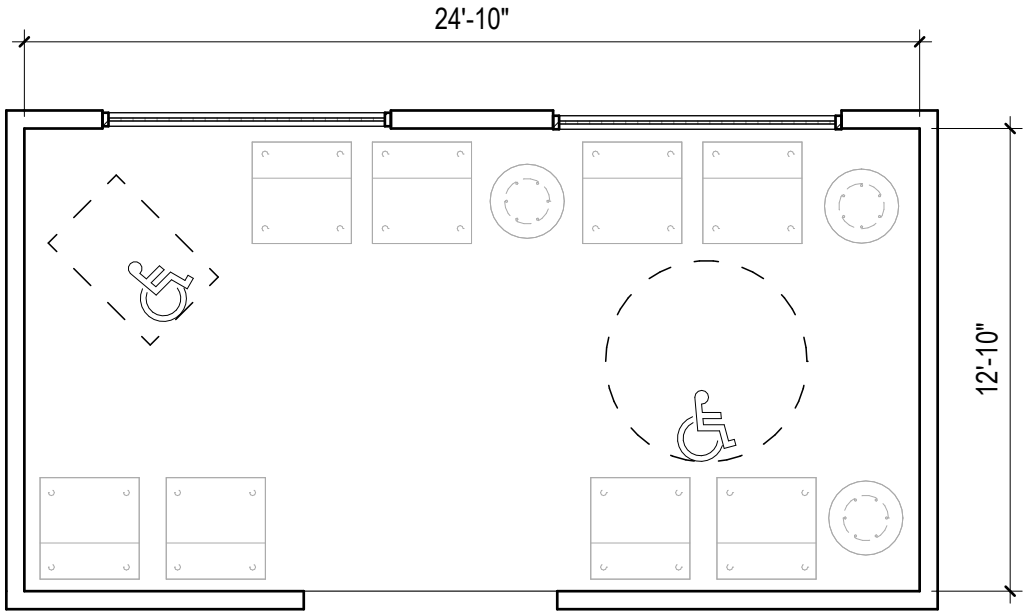
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.2
SPACE NAME: Counseling Waiting Area	# of Students: 8	NSF: 320	

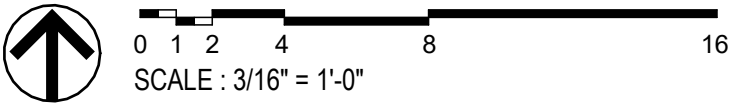
Describe the function of the space:

Waiting area for clients attending counseling sessions or receiving other support from Counseling Services.

Adjacencies: Counseling Reception & Suite Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

C&WS - COUNSELING WAITING

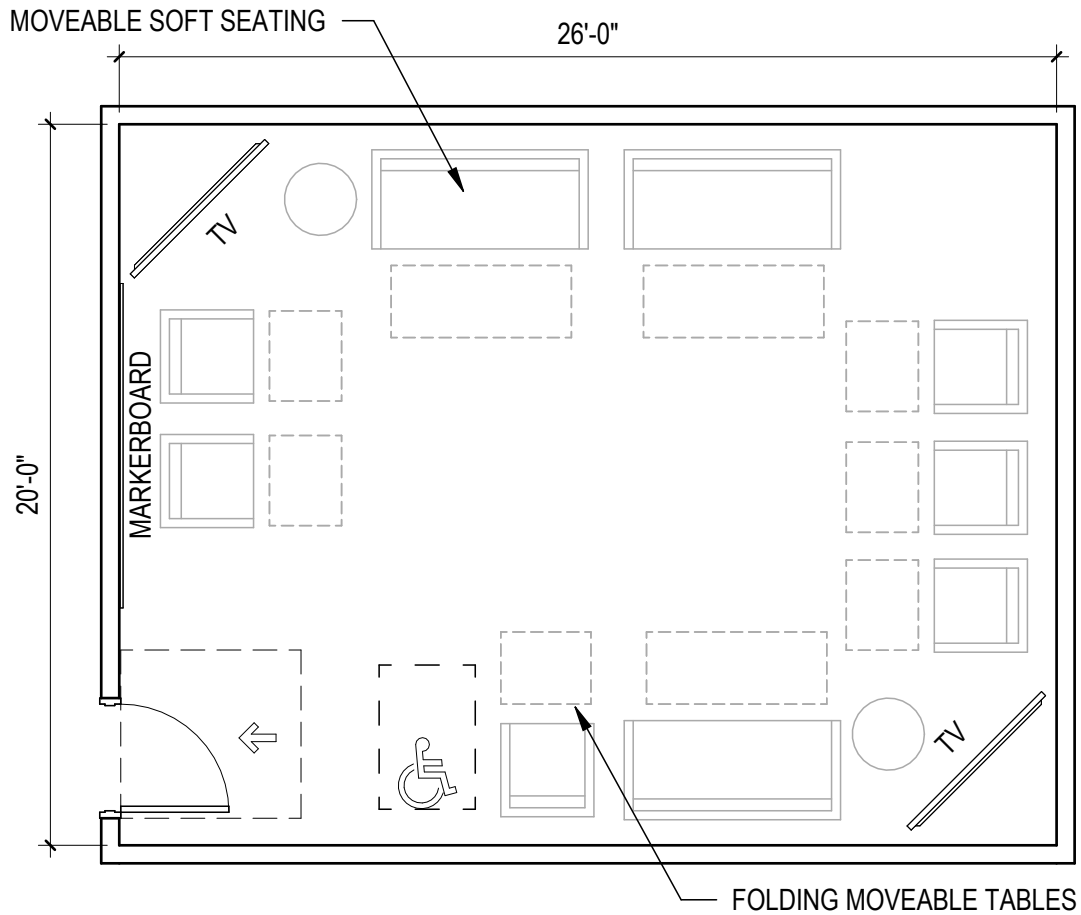
DEPARTMENT: Counseling & Wellness Services Counseling	**# of Faculty/Staff:** 1	**# OF SPACES:** 2	**SPACE ID NO:** 3.3
SPACE NAME: Group Room	**# of Students:** 12	**NSF:** 1,100	

Describe the function of the space:

Space for group therapy sessions and activities which may include games, training, and more.

Adjacencies: Counseling Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems - Translucent
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - GROUP ROOM

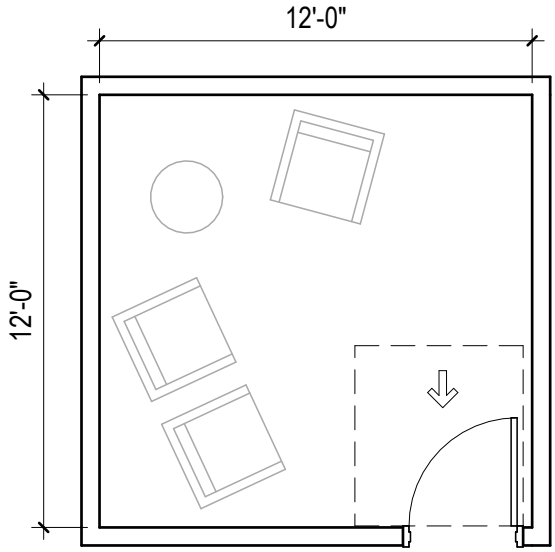
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 3	SPACE ID NO: 3.5
SPACE NAME: Trainee Room	# of Students: 1-3	NSF: 435	

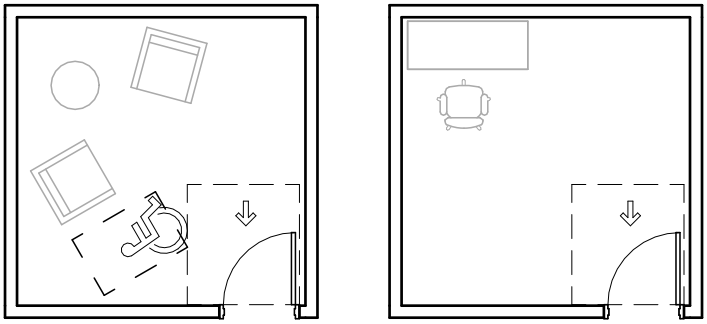
Describe the function of the space:

Space for counseling trainees to hold in-person and virtual practice sessions that will be recorded.

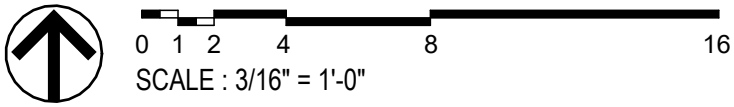
Adjacencies: Work Area - Trainee

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





ALTERNATIVE LAYOUTS SHOWN FOR REFERENCE (NTS)



SCALE : 3/16" = 1'-0"

C&WS - TRAINEE ROOM

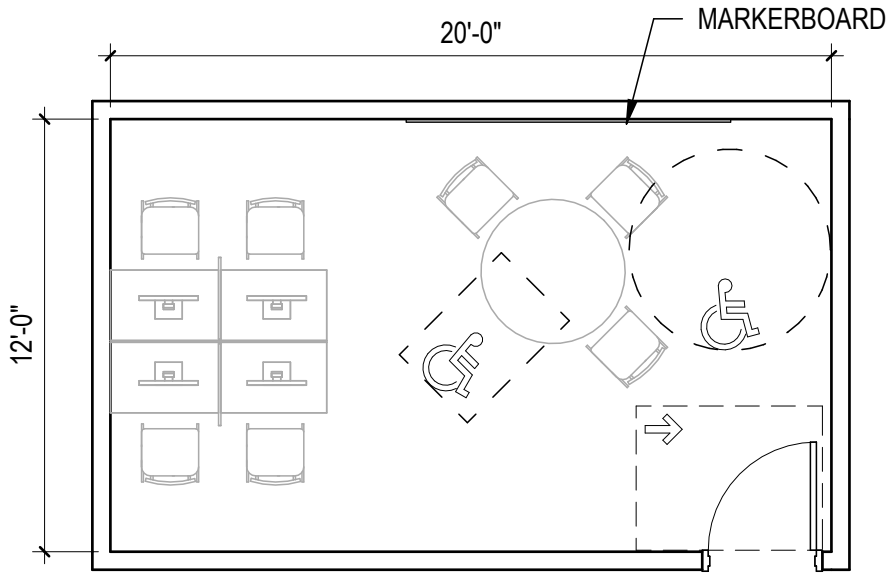
DEPARTMENT: Counseling & Wellness Services Counseling	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 3.6
SPACE NAME: Work Area - Trainee	**# of Students:** 3-6	**NSF:** 240	

Describe the function of the space:

Computer space for 3-5 students to share and collaborate.

Adjacencies: Training Rooms

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - WORK AREA TRAINEE

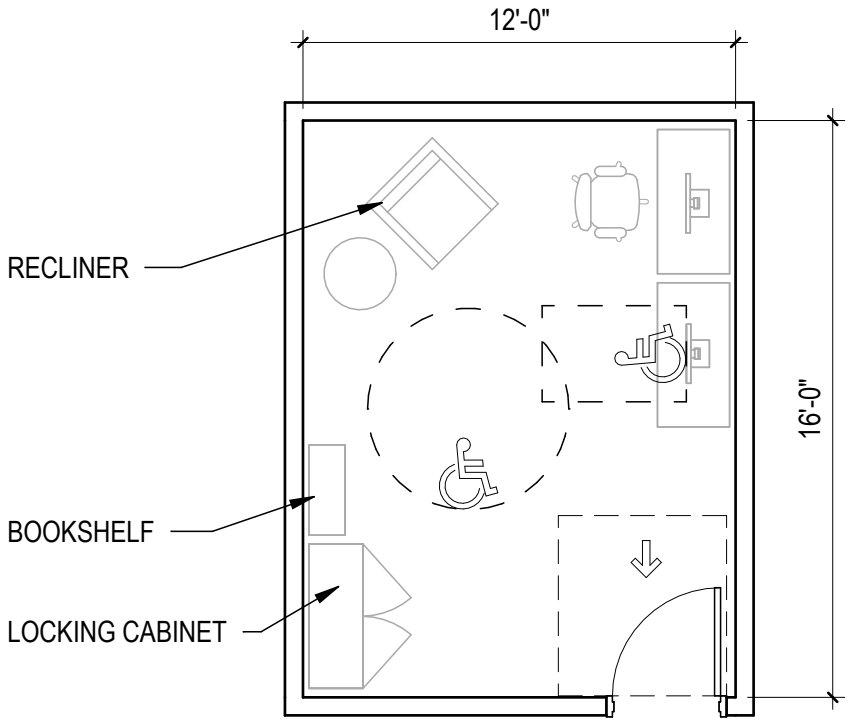
DEPARTMENT: Counseling & Wellness Services Counseling	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 3.7
SPACE NAME: Bio Feedback Room	**# of Students:** 1-2	**NSF:** 200	

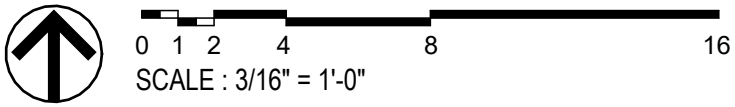
Describe the function of the space:

Space with specialized equipment for biofeedback sessions with clients.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

C&WS - BIO FEEDBACK ROOM

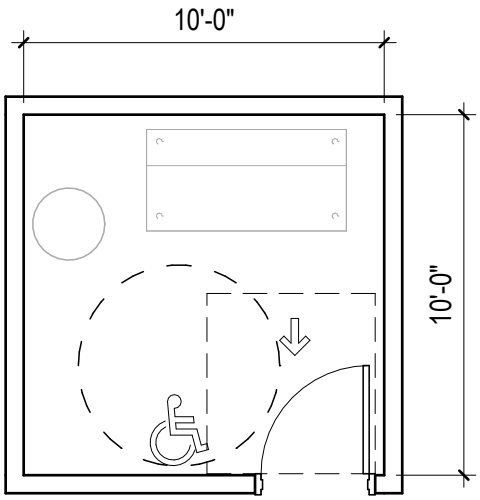
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.8
SPACE NAME: Quiet Room	# of Students: 1	NSF: 100	

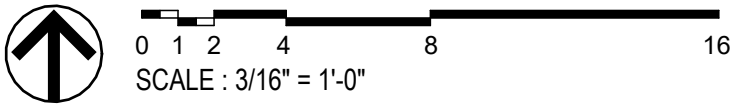
Describe the function of the space:

Space for students, faculty or staff who need to decompress from over stimulation, an emotional event, or other occurrence.

Adjacencies: Counseling Reception, Waiting Area, & Zoom Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

C&WS - QUIET ROOM

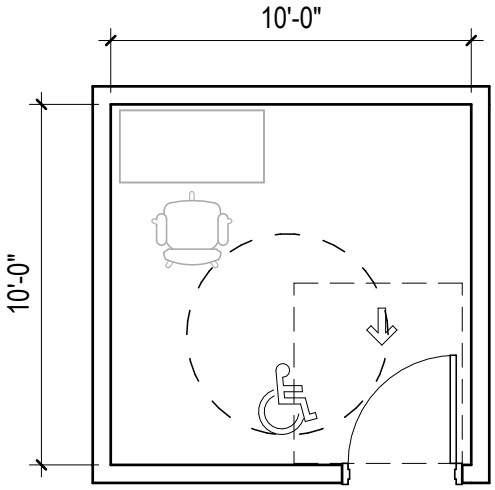
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.9
SPACE NAME: Zoom Room	# of Students: 1	NSF: 100	

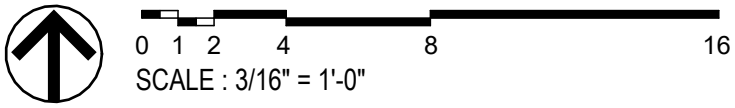
Describe the function of the space:

Space for students, faculty or staff to take virtual consultations, make calls to schedule consultations, and more.

Adjacencies: Counseling Reception, Waiting Area, & Quiet Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





C&WS - ZOOM ROOM

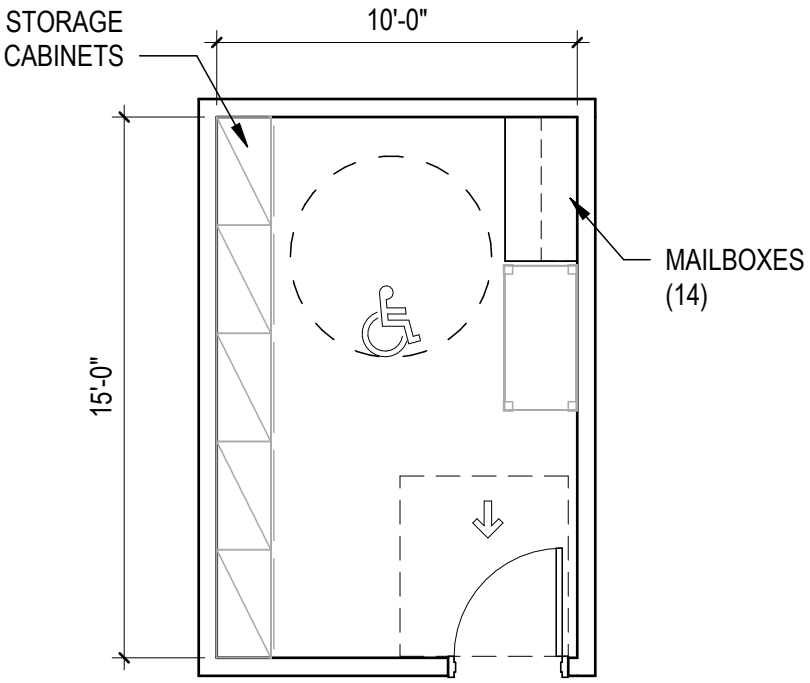
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.11
SPACE NAME: Storage - Controlled	# of Students: -	NSF: 150	

Describe the function of the space:

Controlled storage space for Counseling Services recording equipment, records, mailboxes, and more.

Adjacencies: Counseling Reception

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - STORAGE CONTROLLED

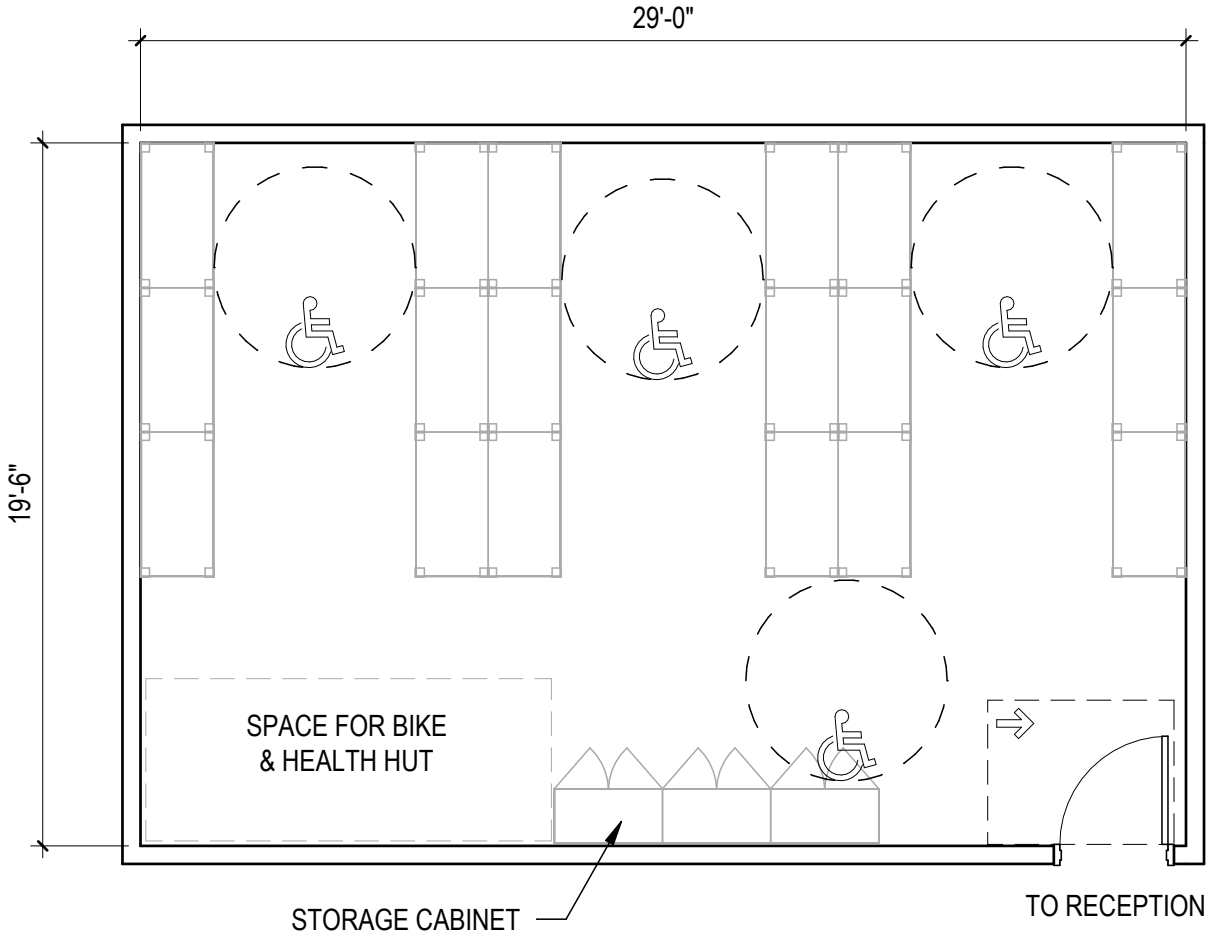
DEPARTMENT: Counseling & Wellness Services Wellness	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.14
SPACE NAME: Storage	# of Students: -	NSF: 560	

Describe the function of the space:

Storage space for Wellness equipment and supplies.

Adjacencies: Peer Health Educators & Offices

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - WELLNESS STORAGE

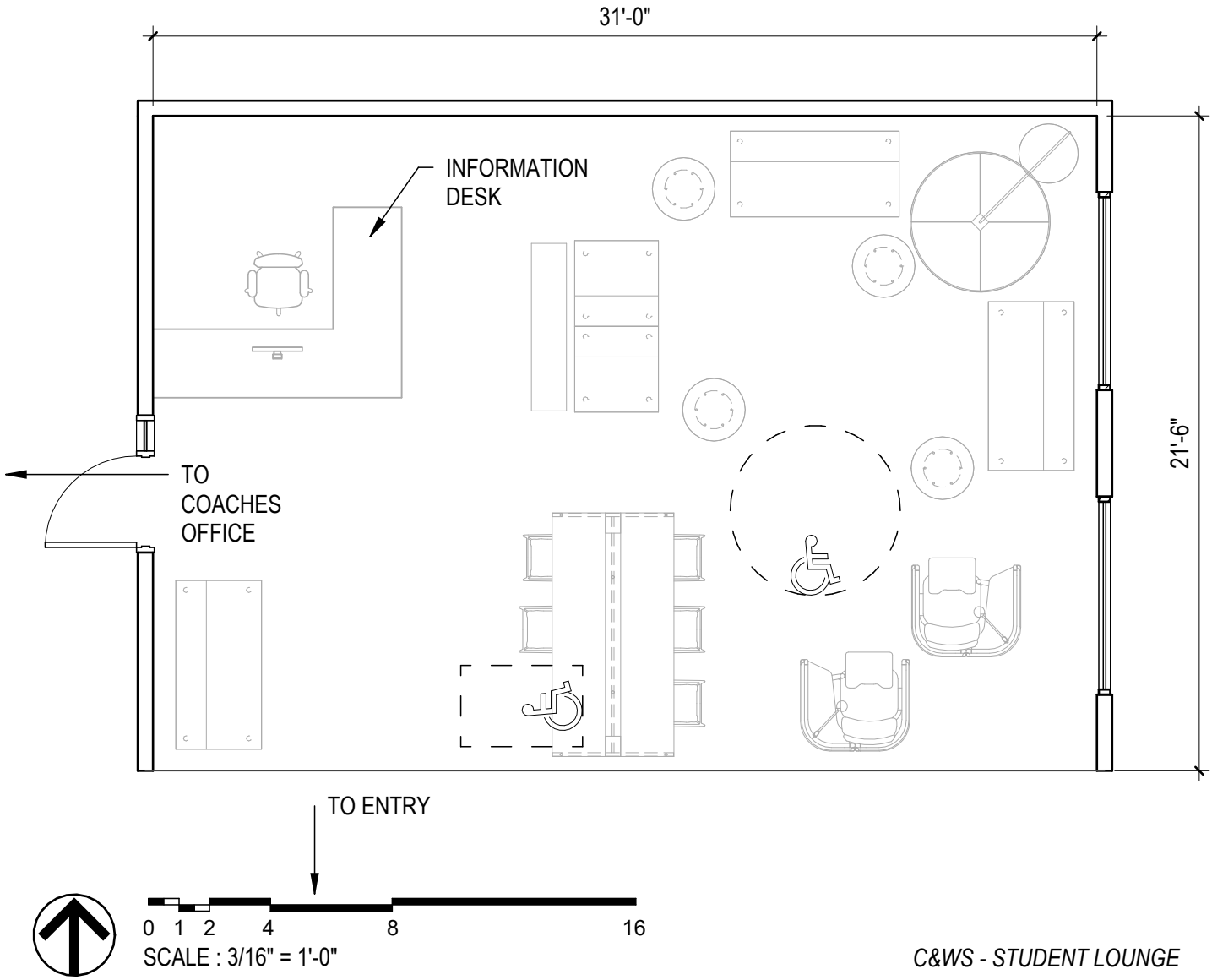
DEPARTMENT: Counseling & Wellness Services Eagles For Recovery Program	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 3.15
SPACE NAME: Student Lounge	**# of Students:** 16	**NSF:** 650	

Describe the function of the space:

Space for Eagles in Recovery students to meet or get support on their journey.

Adjacencies: Peer Health Educators & Coach Office

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



C&WS - STUDENT LOUNGE

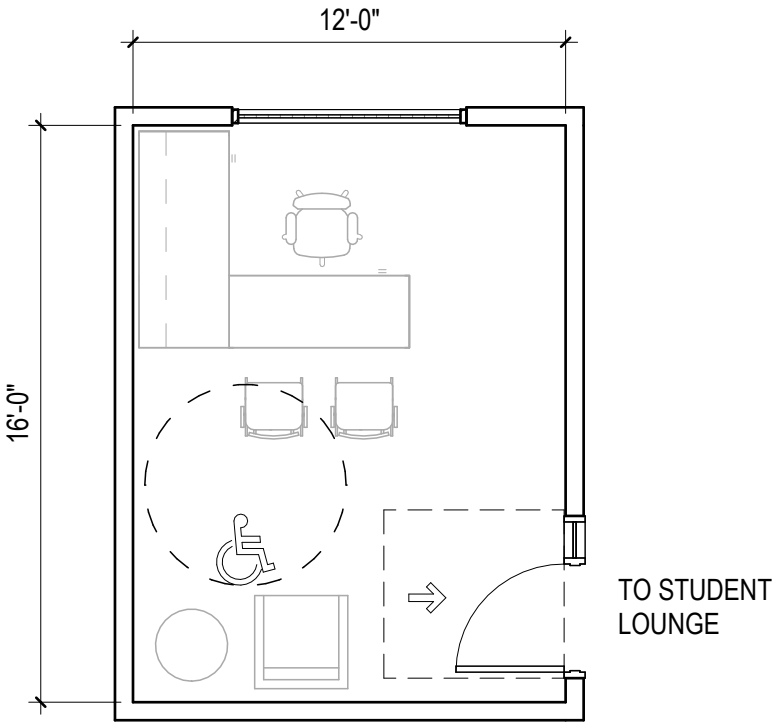
DEPARTMENT: Counseling & Wellness Services Eagles For Recovery Program	# of Faculty/Staff: 1	# OF SPACES: 1	SPACE ID NO: 3.16
SPACE NAME: Office - Coach	# of Students: 1-3	NSF: 200	

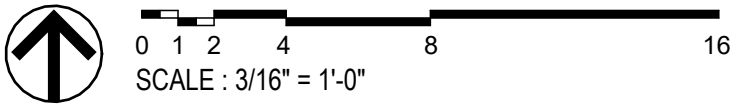
Describe the function of the space:

Office for confidential meetings with students and staff supporting the Eagles for Recovery program.

Adjacencies: Eagles for Recovery Lounge & Peer Health Educators

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

C&WS - OFFICE COACH

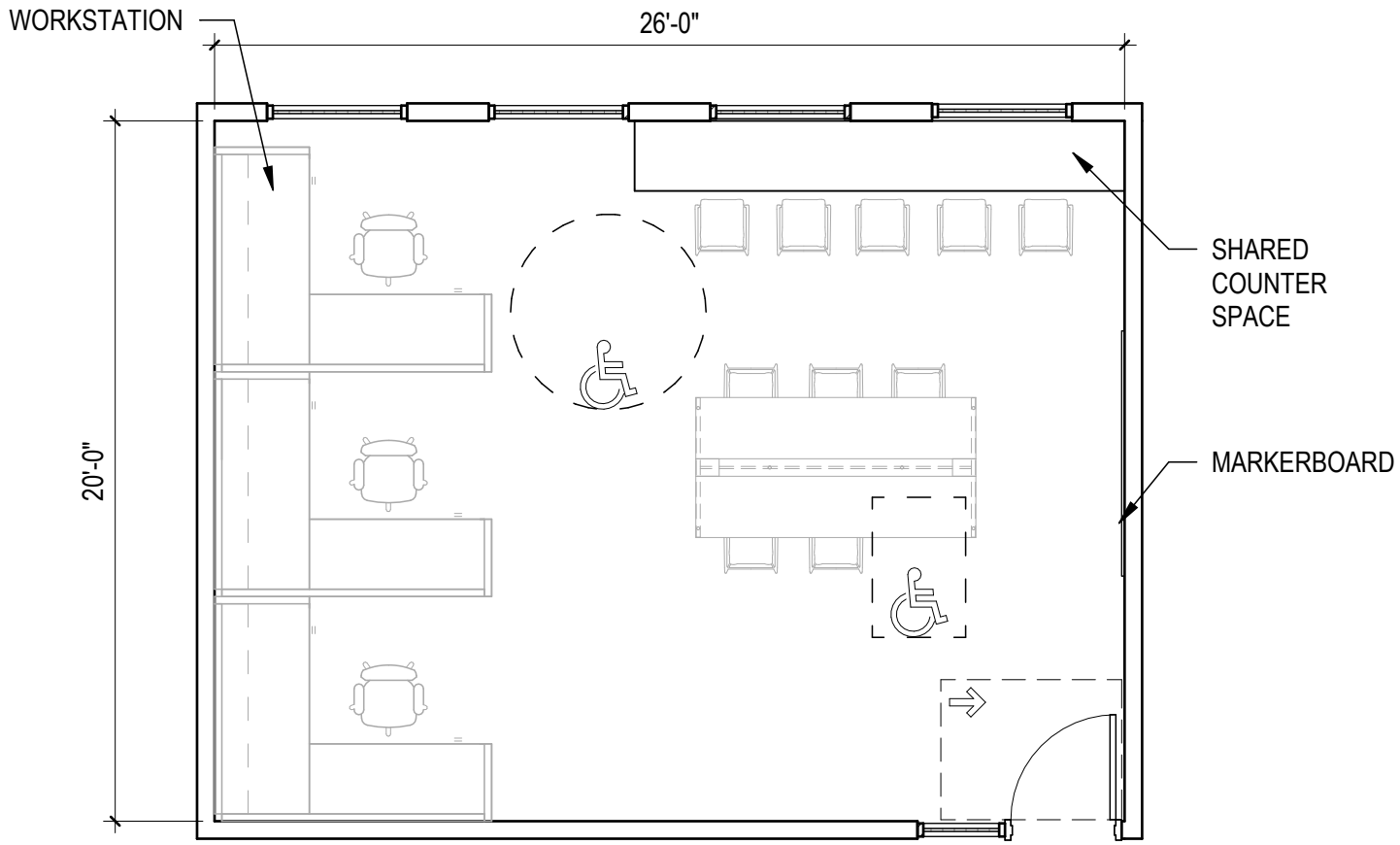
DEPARTMENT: Counseling & Wellness Services Eagles For Recovery Program	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 3.17
SPACE NAME: Peer Health Educators	**# of Students:** 6	**NSF:** 500	

Describe the function of the space:

Space for Peer Health Educators to work, plan, and prepare for campus wellness outreach and events.

Adjacencies: Eagles for Recovery Lounge & Coach Office

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - PEER HEALTH EDUCATORS

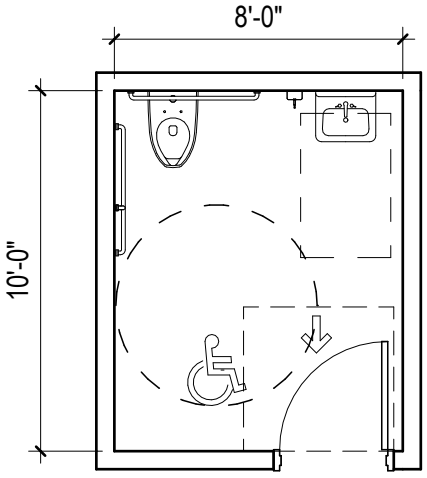
DEPARTMENT: Counseling & Wellness Services Shared Support	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.18
SPACE NAME: Toilet Room	# of Students: 1	NSF: 80	

Describe the function of the space:

Toilet Room for use by counselors, coaches, and staff in Counseling and Wellness Services to ensure that staff have a private space to utilize the facilities that is separate from clients.

Adjacencies: Work Room & Break Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Porelain Tile	-	-
base	casework finishes	acoustic
Porcelain Tile	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Ceramic Tile	Gypsum	-



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SCALE : 3/16" = 1'-0"

C&WS - TOILET ROOM

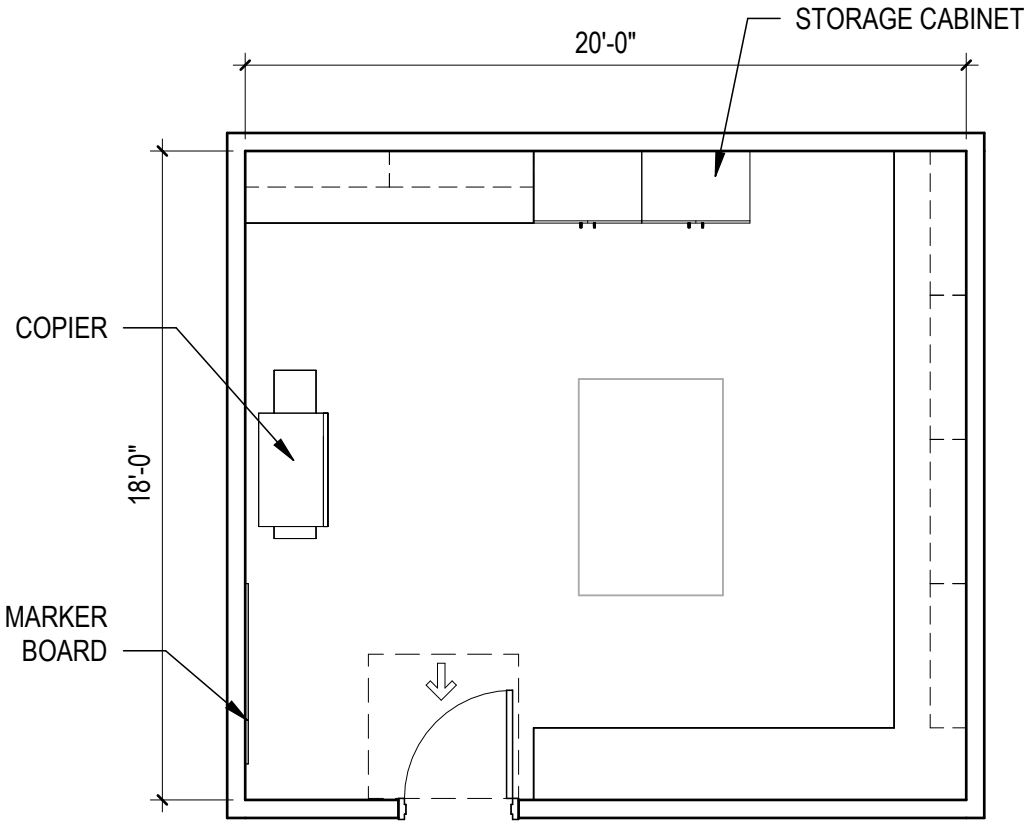
DEPARTMENT: Counseling & Wellness Services Shared Support	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 3.19
SPACE NAME: Work Room	**# of Students:** 3	**NSF:** 360	

Describe the function of the space:

Space for the production and preparation of materials to support the Counseling and Wellness programs and events.

Adjacencies: Break Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - WORK ROOM

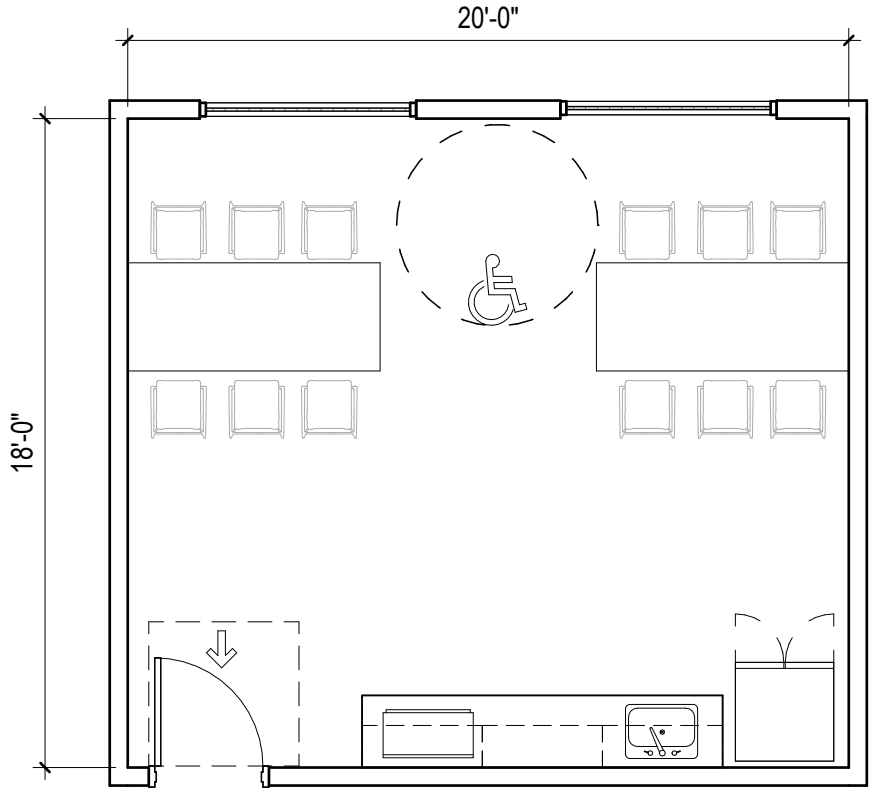
DEPARTMENT: Counseling & Wellness Services Shared Support	**# of Faculty/Staff:** 12	**# OF SPACES:** 1	**SPACE ID NO:** 3.20
SPACE NAME: Break Room	**# of Students:** -	**NSF:** 360	

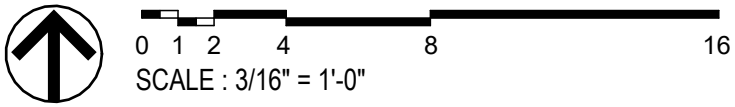
Describe the function of the space:

Break Room for use by counselors, coaches, and staff in Counseling and Wellness Services to ensure that staff have a private space to decompress that is separate from clients.

Adjacencies: Work Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic tile	-





SCALE : 3/16" = 1'-0"

C&WS - BREAK ROOM

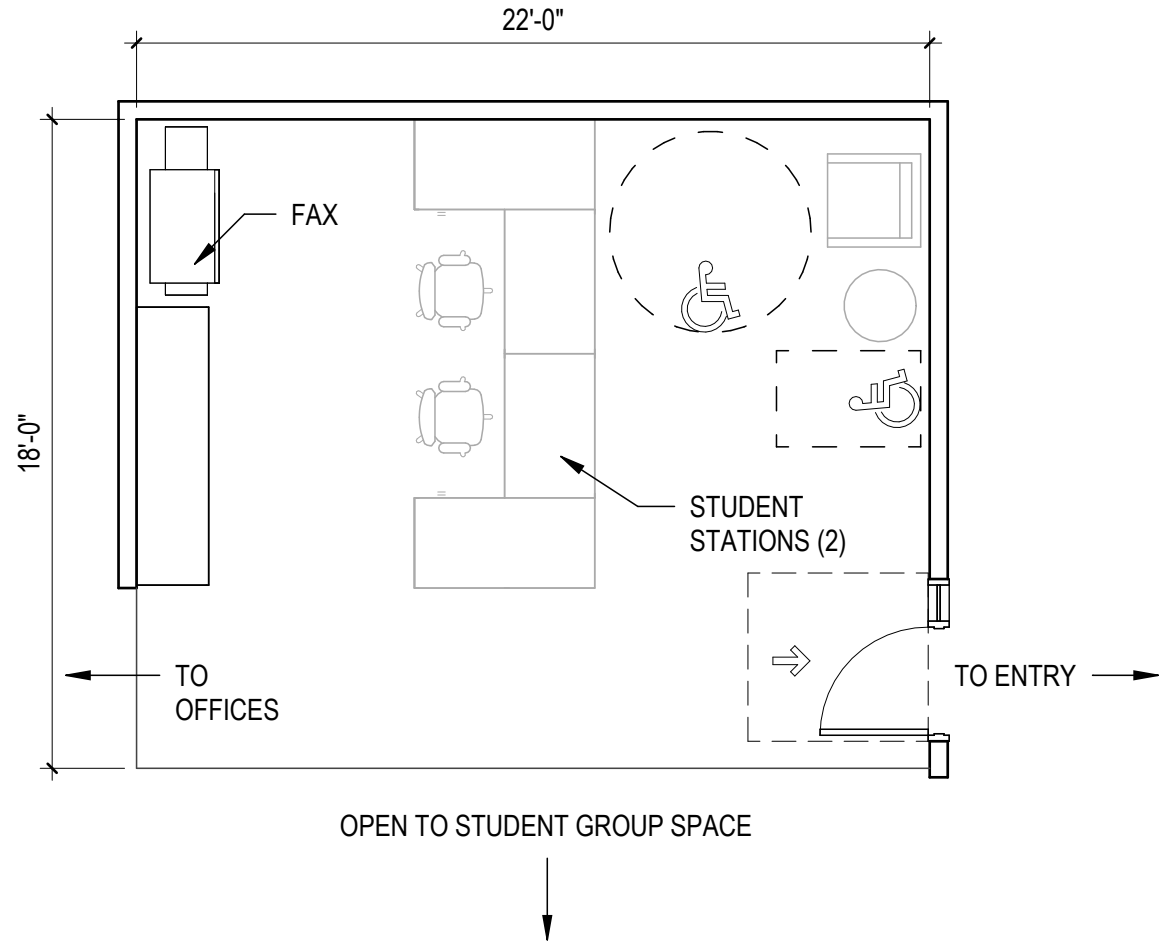
STUDENT ACCOMMODATIONS & SUPPORT SERVICES

DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.1
SPACE NAME: Reception & Waiting Area	# of Students: 4	NSF: 400	

Describe the function of the space:
Initial point of contact for Student Accommodations and Support Services.

Adjacencies: Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - RECEPTION & WAITING

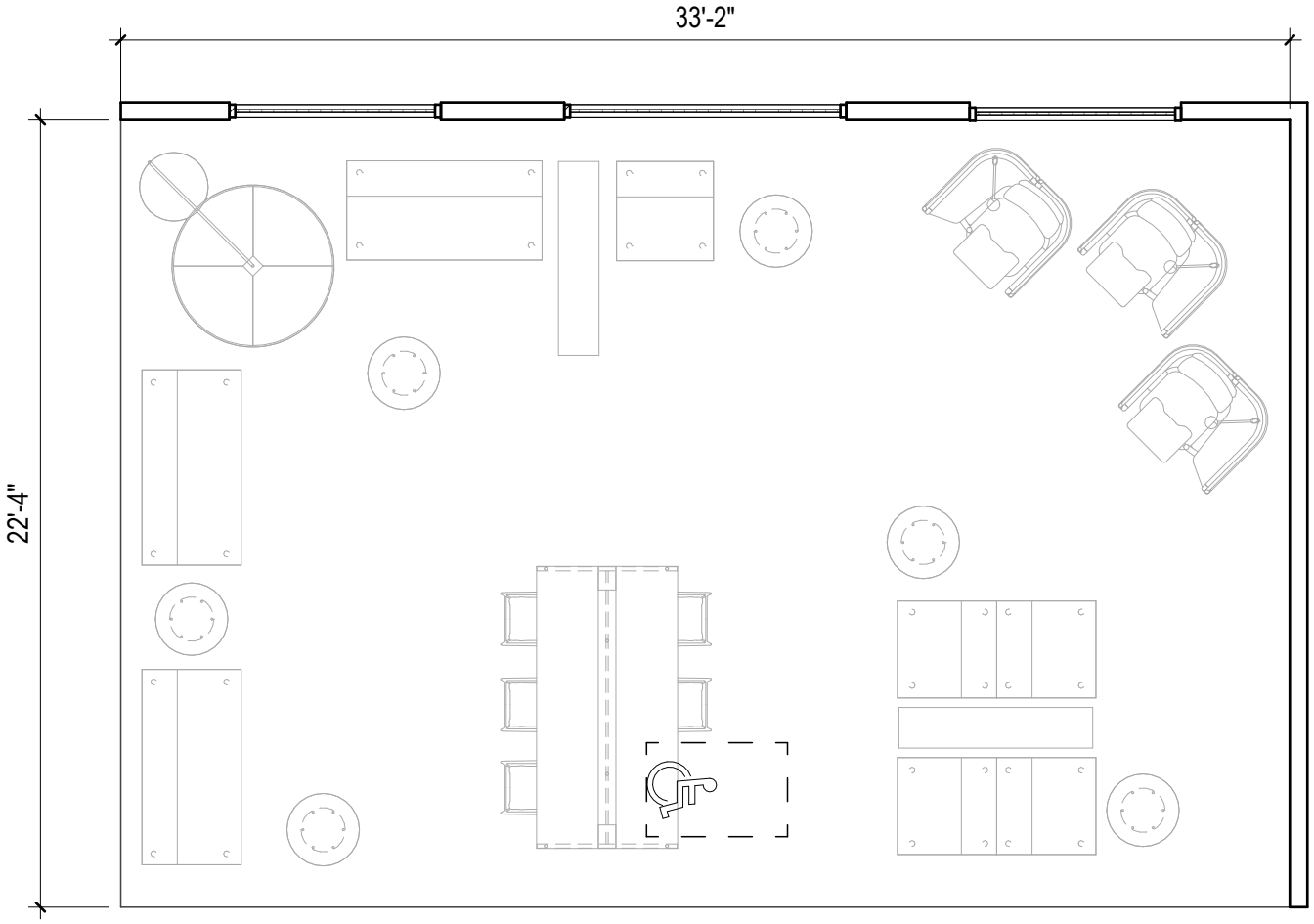
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.2
SPACE NAME: Student Group Space / Living Room	# of Students: 20	NSF: 800	

Describe the function of the space:

Space open to students utilizing SASS support to gather, study, collaborate, have a meal, and more.

Adjacencies: SASS Reception & Student Break Area

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

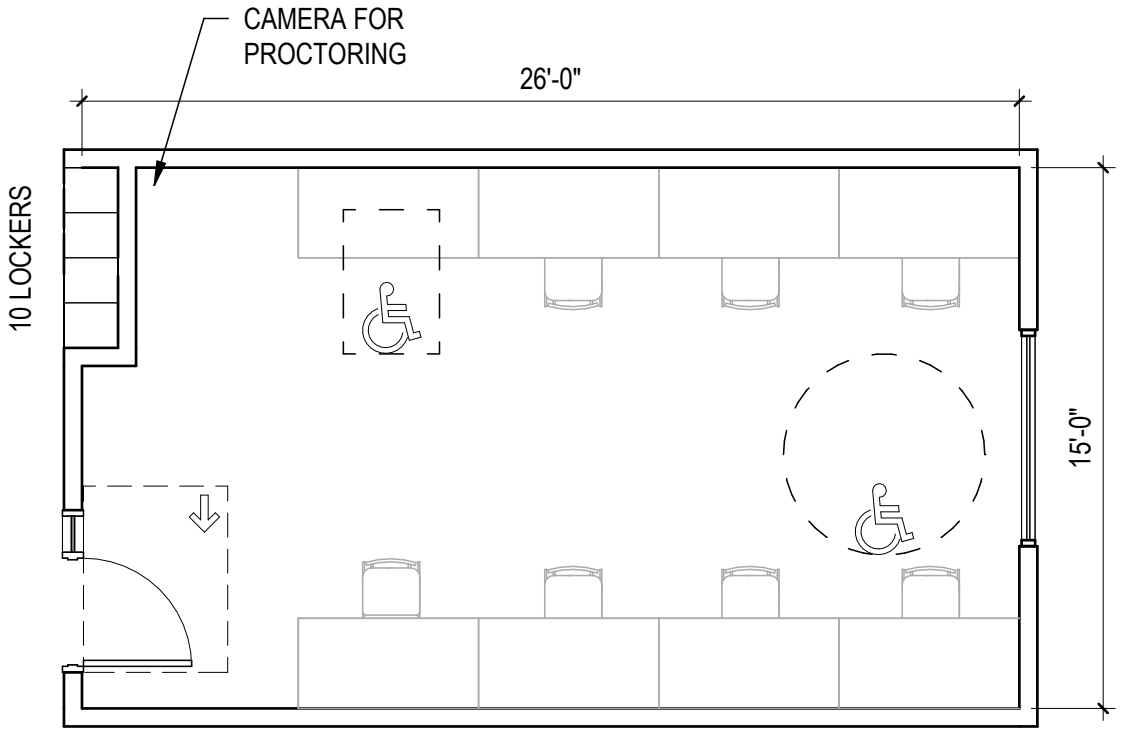
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.5
SPACE NAME: Testing Room	# of Students: 8	NSF: 400	

Describe the function of the space:

Space for proctored testing and exams of students requiring accommodations.

Adjacencies: Reception

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - TESTING ROOM

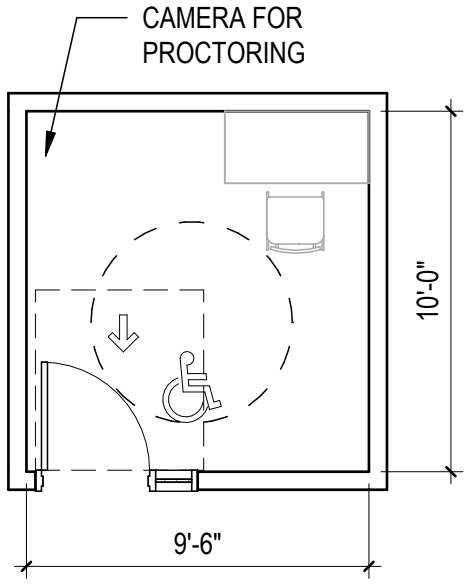
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 2	SPACE ID NO: 4.6
SPACE NAME: Testing Room - Individual	# of Students: 1	NSF: 200	

Describe the function of the space:

Private space for proctored testing and exams of students requiring accommodations.

Adjacencies: Reception

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - TESTING ROOM INDIVIDUAL

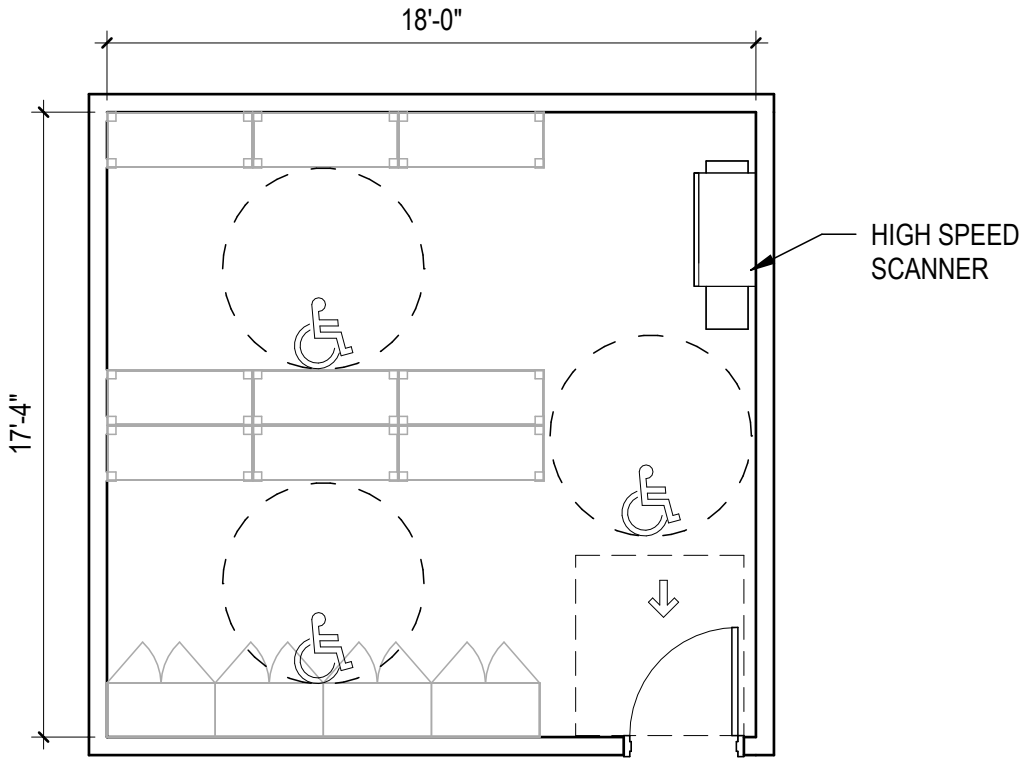
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.7
SPACE NAME: Storage	# of Students: -	NSF: 300	

Describe the function of the space:

Storage for passport supplies, student accommodation supplies, and a high-speed scanner.

Adjacencies: Reception

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - STORAGE

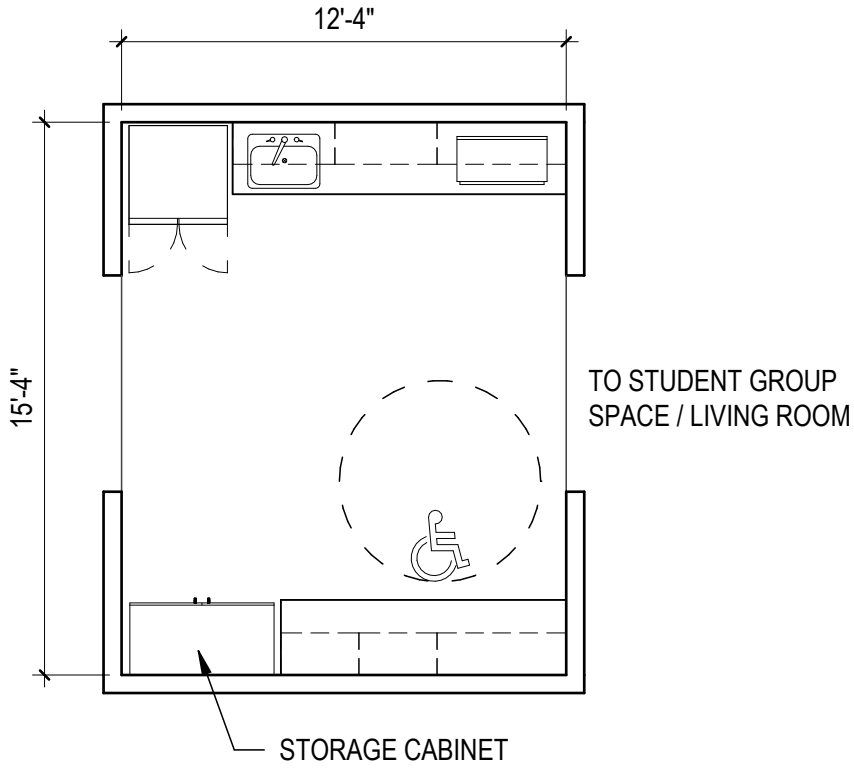
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.8
SPACE NAME: Student Break Area	# of Students: -	NSF: 200	

Describe the function of the space:

Break area with open kitchenette for students utilizing SASS support to use with microwave, fridge, and access to basic needs supplies.

Adjacencies: Student Group Space / Living Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - STUDENT BREAK AREA

SHARED SPACES

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** varies	**# OF SPACES:** 1	**SPACE ID NO:** 5.1
SPACE NAME: Commons / Atrium	**# of Students:** varies	**NSF:** 1,600	

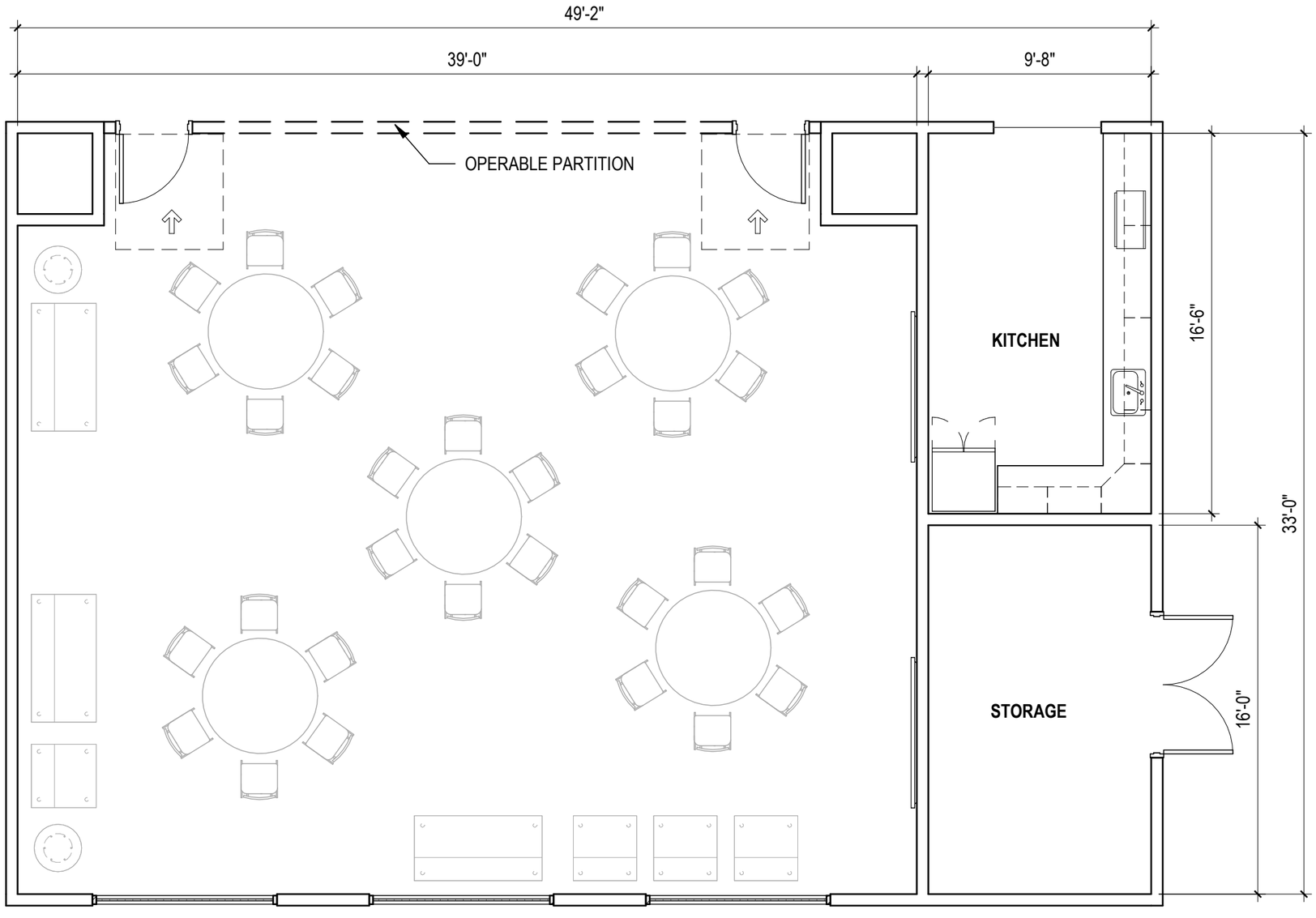
Describe the function of the space:

Event and community space with living room feel. Open to all when there are no events but should be able to host 'closed off' events. Includes adjacent kitchen and table/chair storage.

Adjacencies: Kitchen & Storage

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Polished Concrete	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Porcelain Tile	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	Operable Partition

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - COMMONS / ATRIUM

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** varies	**# OF SPACES:** 1	**SPACE ID NO:** 5.18
SPACE NAME: Collaboration Hub	**# of Students:** varies	**NSF:** 2,000	

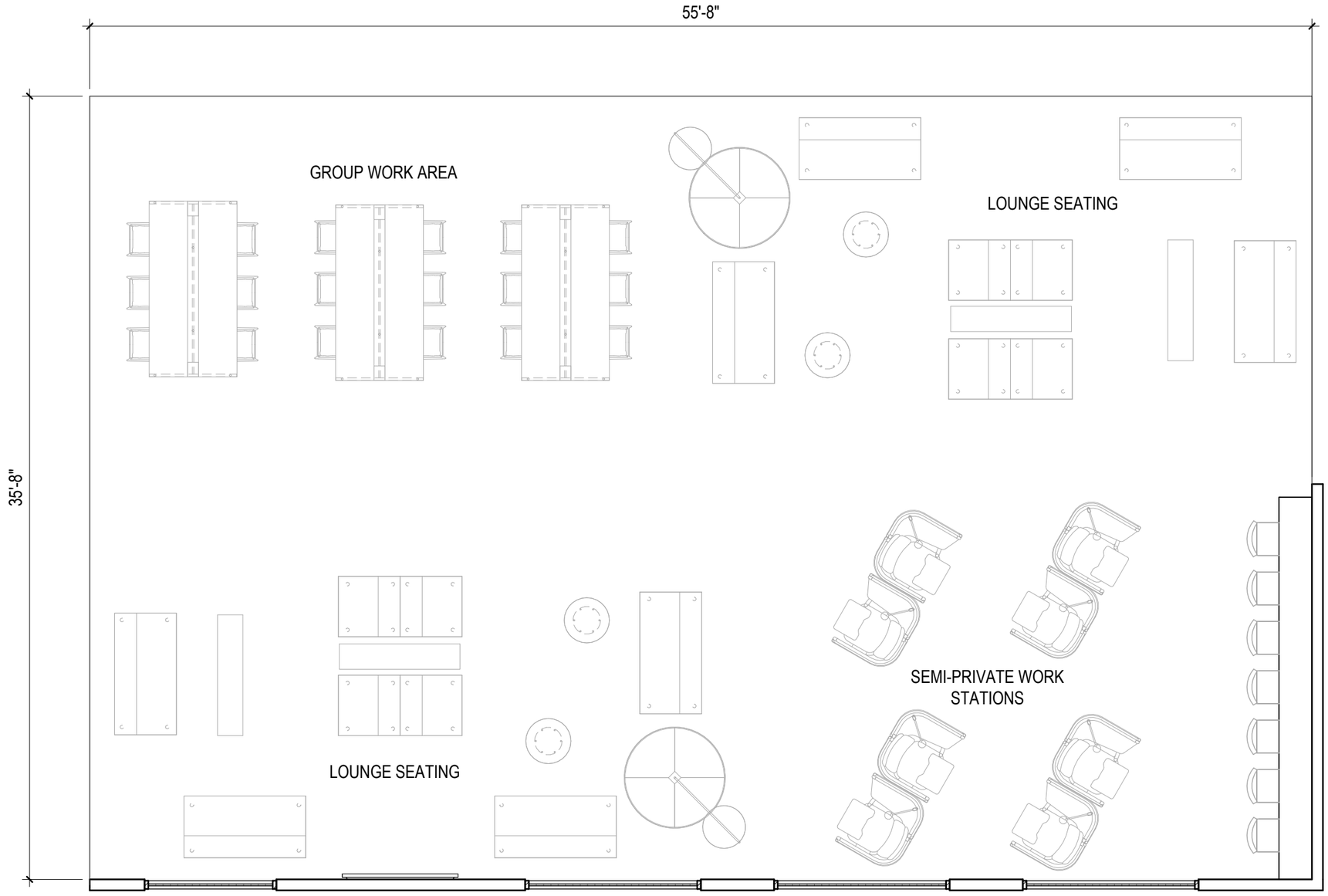
Describe the function of the space:

Open student-centered space for collaboration, study, gathering, and more.

Adjacencies: Near Primary Circulation

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

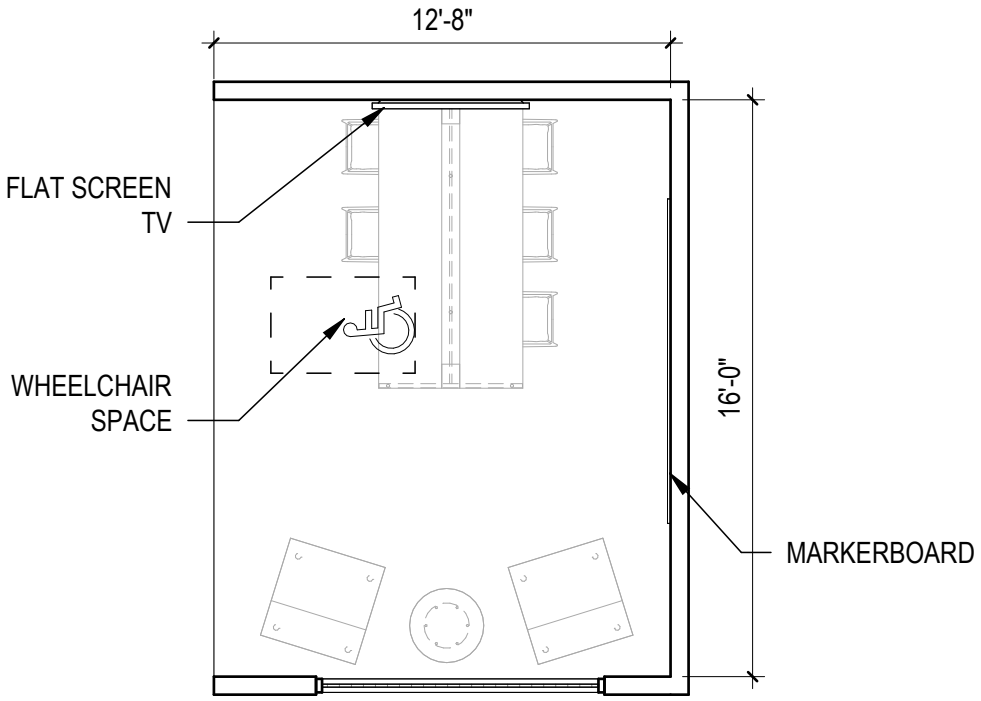
SHARED SPACES - COLLABORATION HUB

DEPARTMENT: Shared Spaces	# of Faculty/Staff: -	# OF SPACES: 3	SPACE ID NO: 5.3
SPACE NAME: Breakout Space	# of Students: 8	NSF: 600	

Describe the function of the space:
Collaboration space for student or faculty use.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SHARED SPACES - BREAKOUT SPACE

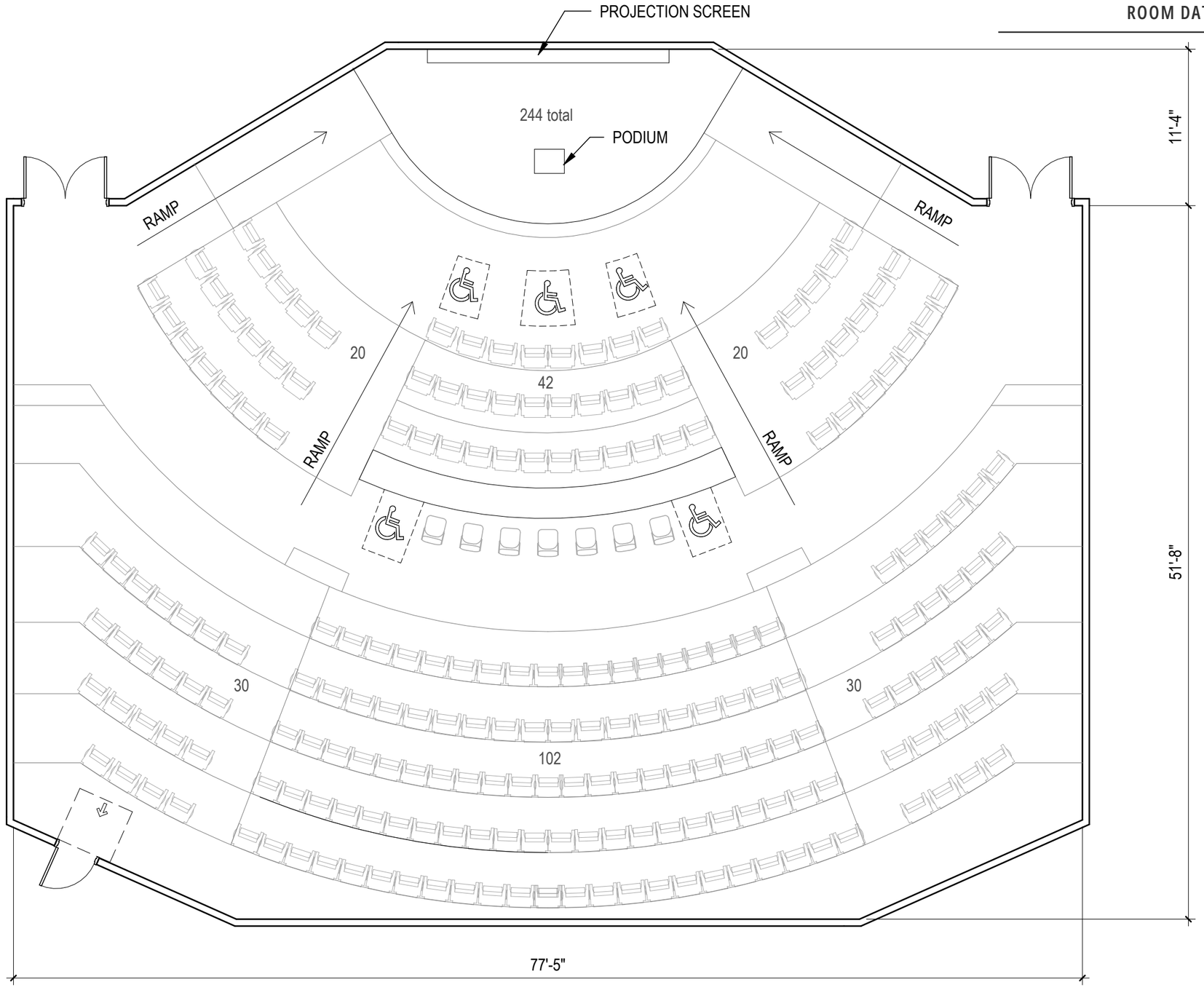
DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 5.5
SPACE NAME: Lecture Hall	**# of Students:** 240	**NSF:** 5,000	

Describe the function of the space:
Auditorium for use by entire campus for lectures and presentations.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet & Polished Concrete	Shades - Dual Motorized	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - LECTURE HALL 240

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** 1	**# OF SPACES:** 2	**SPACE ID NO:** 5.6
SPACE NAME: Lecture Hall	**# of Students:** 80	**NSF:** 3,200	

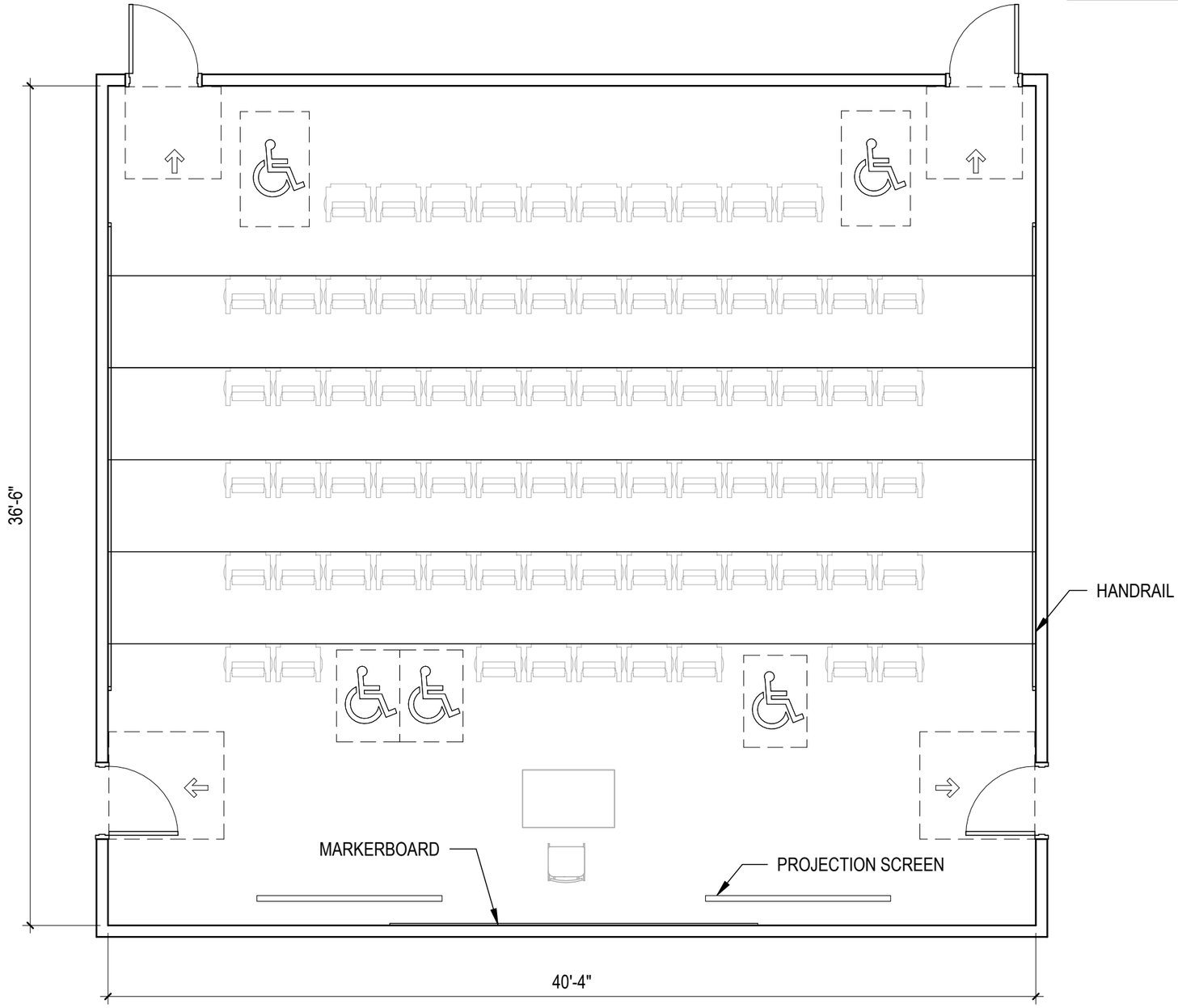
Describe the function of the space:

Auditorium for use by entire campus for lectures and presentations.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - LECTURE HALL 80

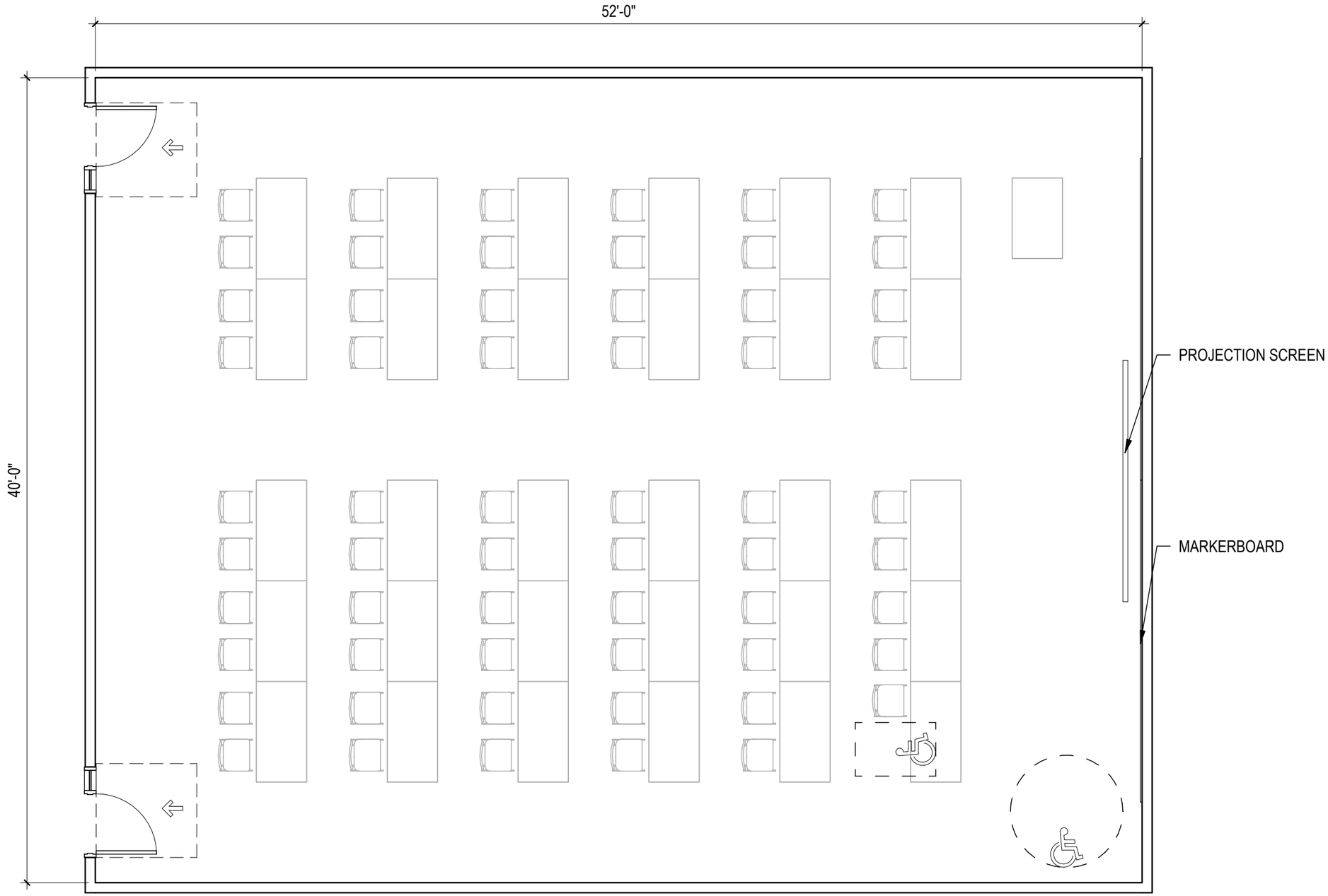
DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** 1	**# OF SPACES:** 4	**SPACE ID NO:** 5.16
SPACE NAME: Classroom	**# of Students:** 60	**NSF:** 8,160	

Describe the function of the space:
Classroom to support lecture, presentation, and group work.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - CLASSROOM 60

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 5.2
SPACE NAME: Multi-Use Classroom	**# of Students:** 40	**NSF:** 1,350	

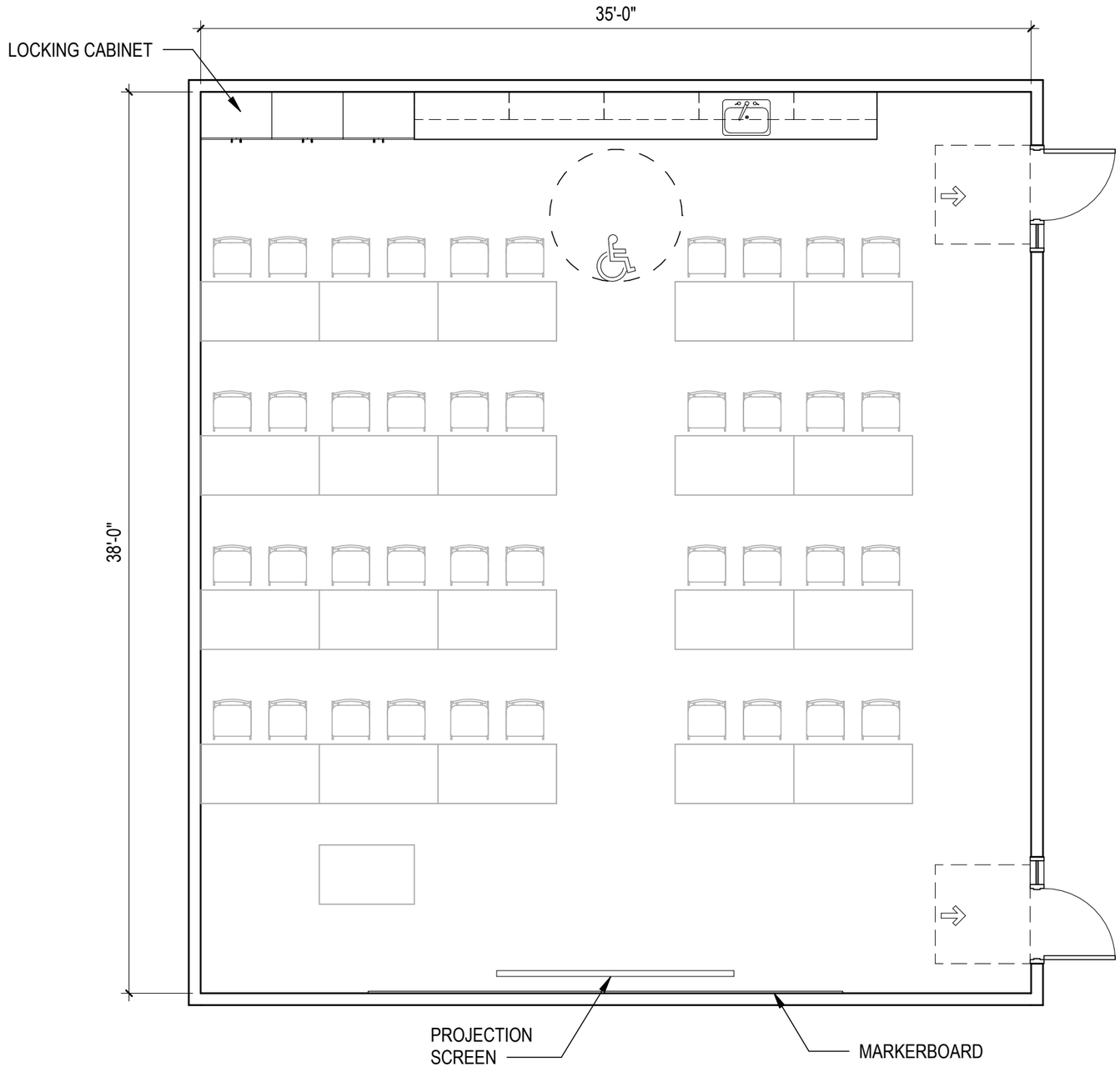
Describe the function of the space:

Flexible classroom to support lecture, presentation, workshops, and group work.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Polished Concrete	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - MULTI-USE CLASSROOM 40

DEPARTMENT: Shared Spaces	# of Faculty/Staff: -	# OF SPACES: 4	SPACE ID NO: 5.7
SPACE NAME: Classroom	# of Students: 25	NSF: 4,400	

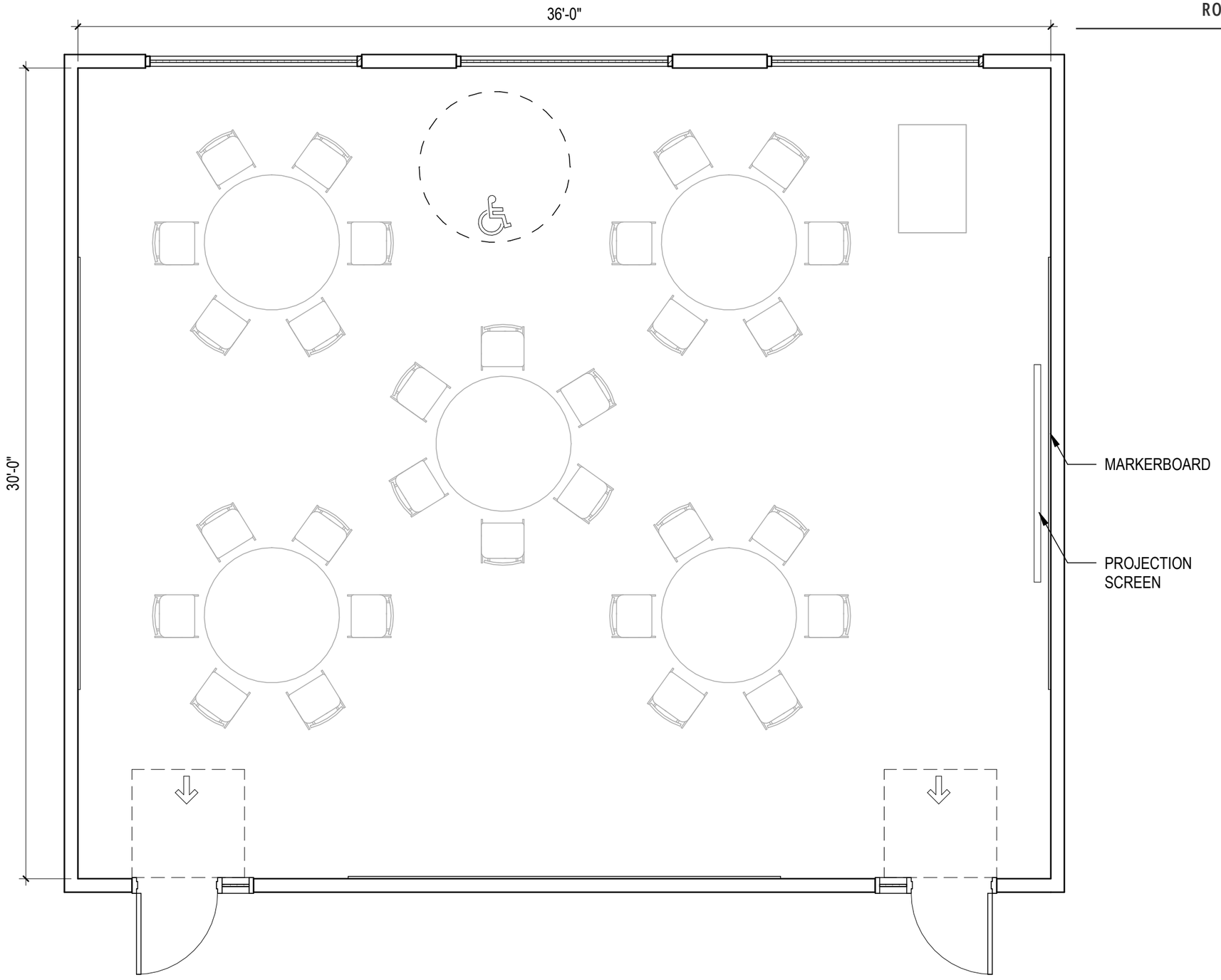
Describe the function of the space:

Active learning classroom with flexible furnishings and technology to support collaborative learning.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - CLASSROOM 25

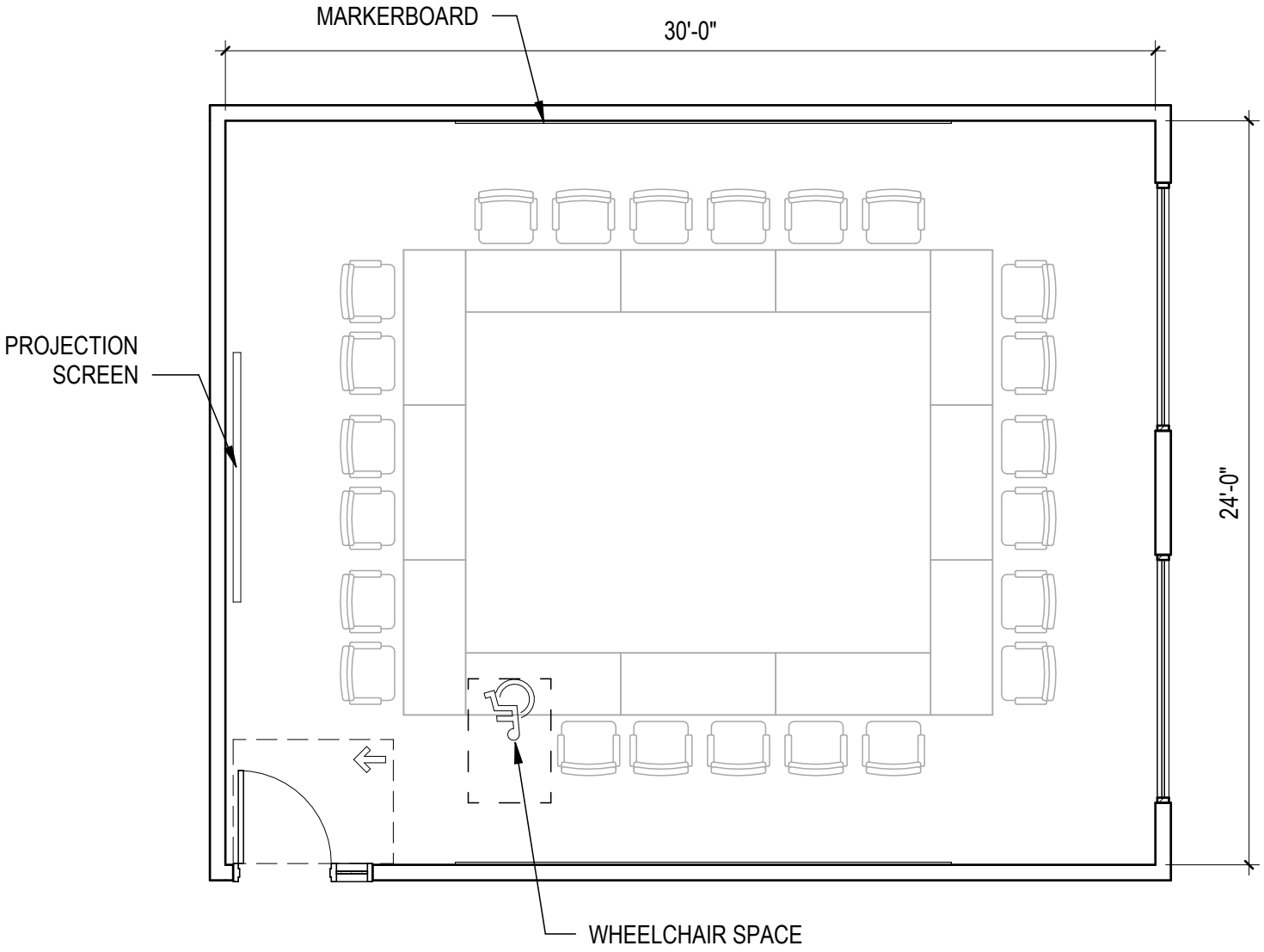
DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** -	**# OF SPACES:** 2	**SPACE ID NO:** 5.10
SPACE NAME: Seminar Room	**# of Students:** 24	**NSF:** 1,440	

Describe the function of the space:
Seminar space for Psychology and Education programs.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - SEMINAR ROOM 24

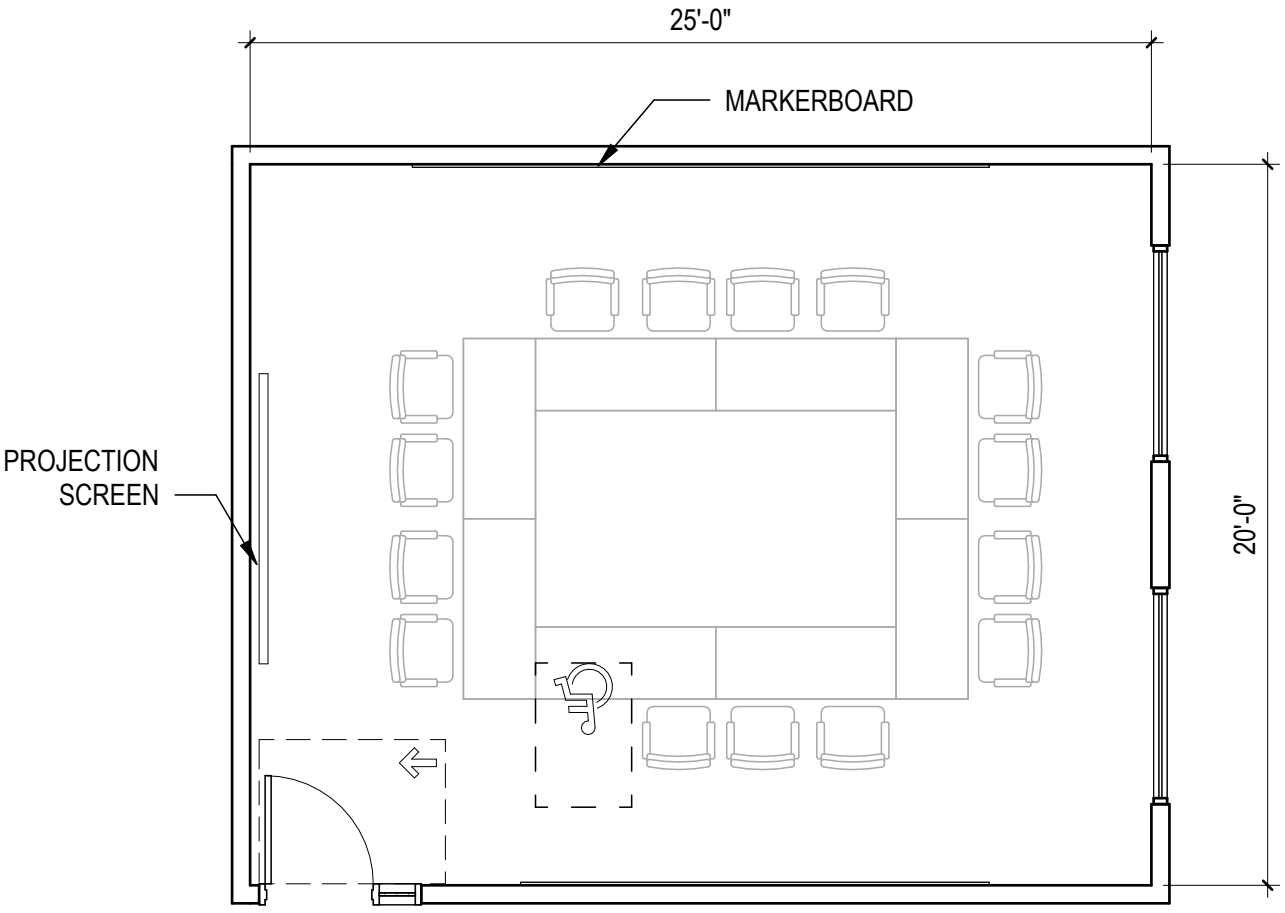
DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 5.17
SPACE NAME: Seminar Room	**# of Students:** 16	**NSF:** 500	

Describe the function of the space:

Seminar space for Psychology and Education programs.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SHARED SPACES - SEMINAR ROOM 16

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 5.11
SPACE NAME: Meeting Room	**# of Students:** 40	**NSF:** 1,575	

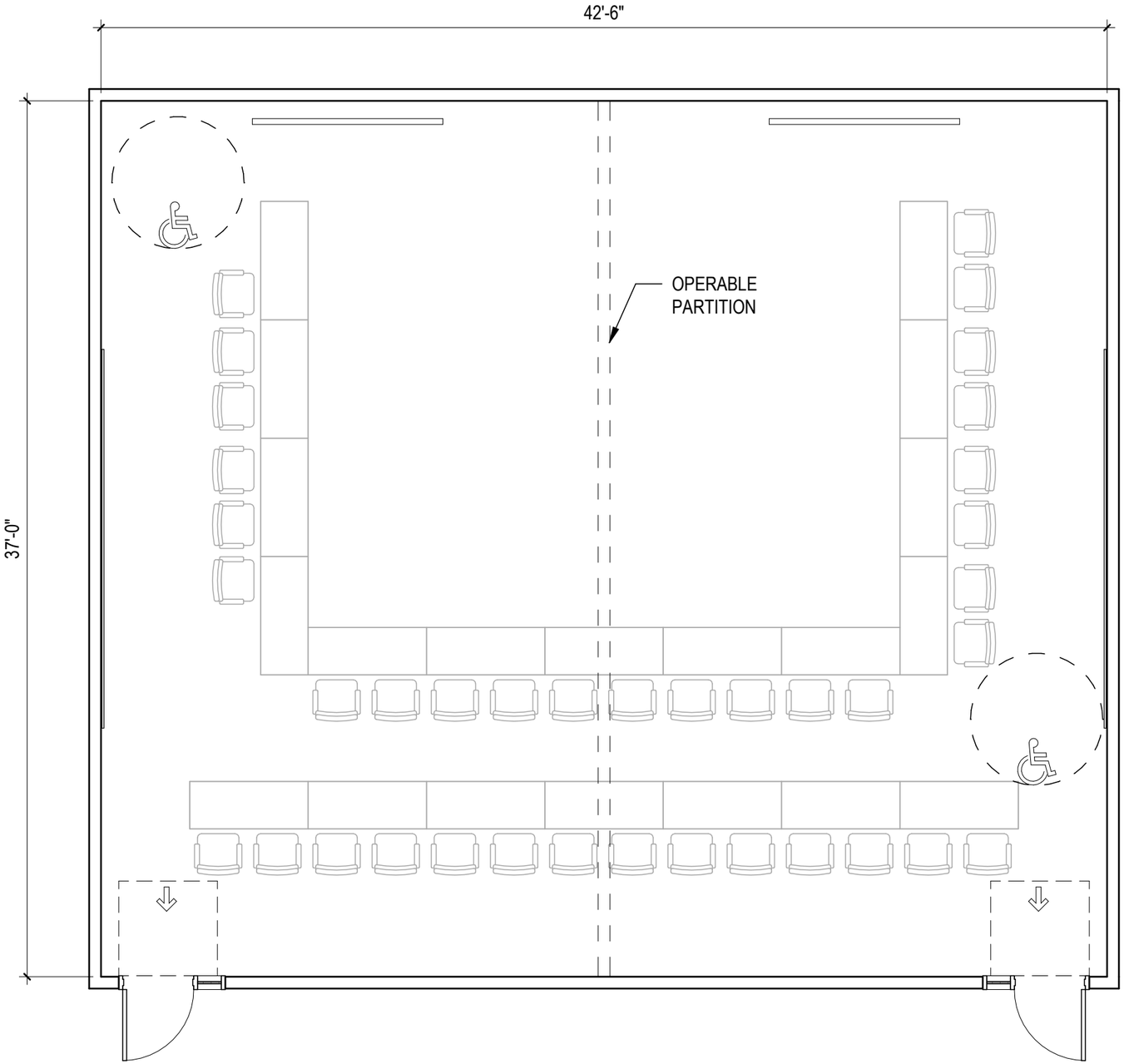
Describe the function of the space:

Flexible divisible meeting space to support a variety of meeting types and group sizes.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	Operable Partition

ROOM DIAGRAM ON FOLLOWING PAGE



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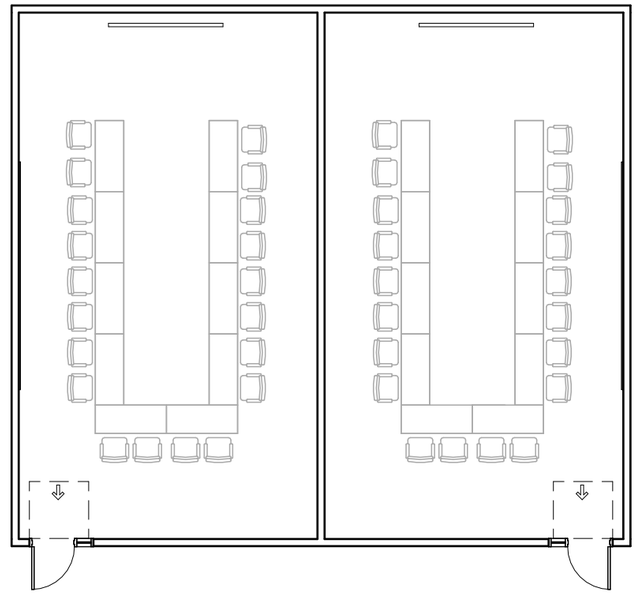
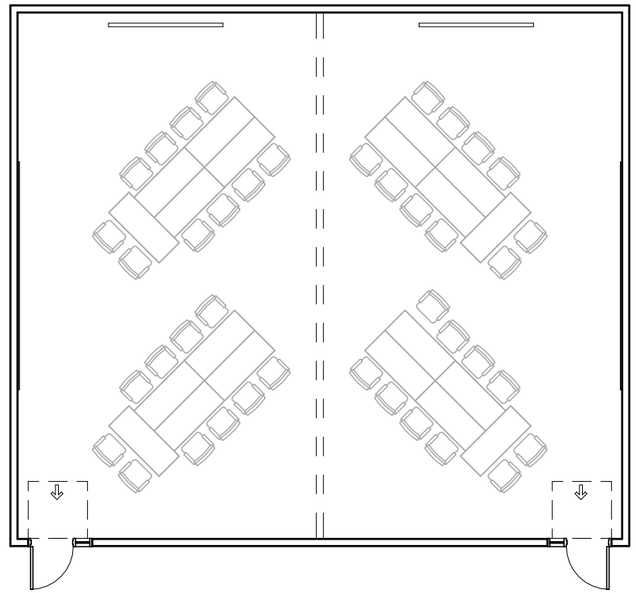
SCALE : 3/16" = 1'-0"

SHARED SPACES - MEETING ROOM 40

ALTERNATIVE LAYOUTS SHOWN FOR REFERENCE (NTS)





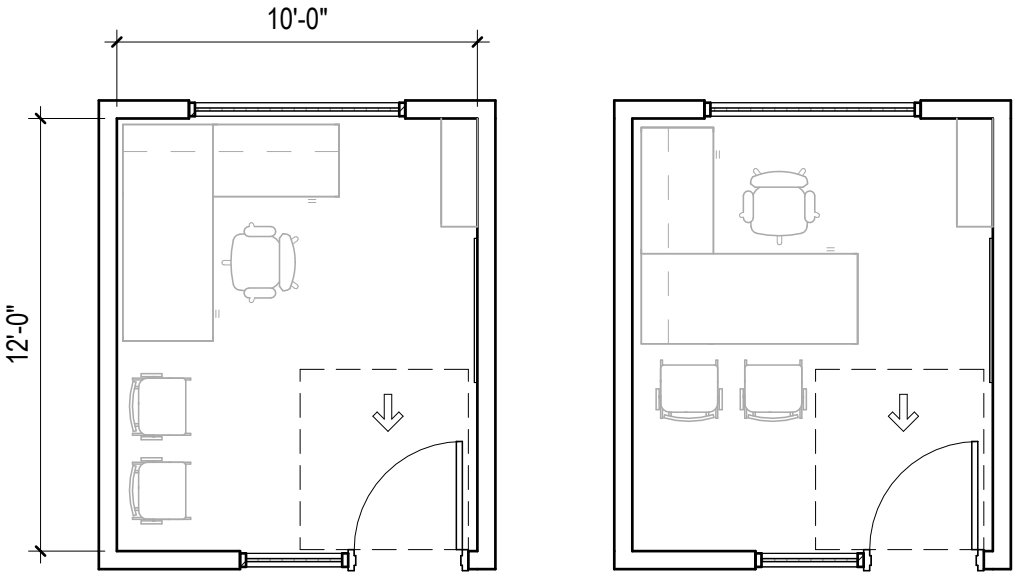
OFFICES

DEPARTMENT: Offices	# of Faculty/Staff: 1	# OF SPACES: -	SPACE ID NO: 7.1
SPACE NAME: Typical	# of Students: -	NSF: 120	

Describe the function of the space:
Standard faculty and staff offices.

Adjacencies: Varies

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic tile	-



0 1 2 4 8 16
SCALE : 3/16" = 1'-0"

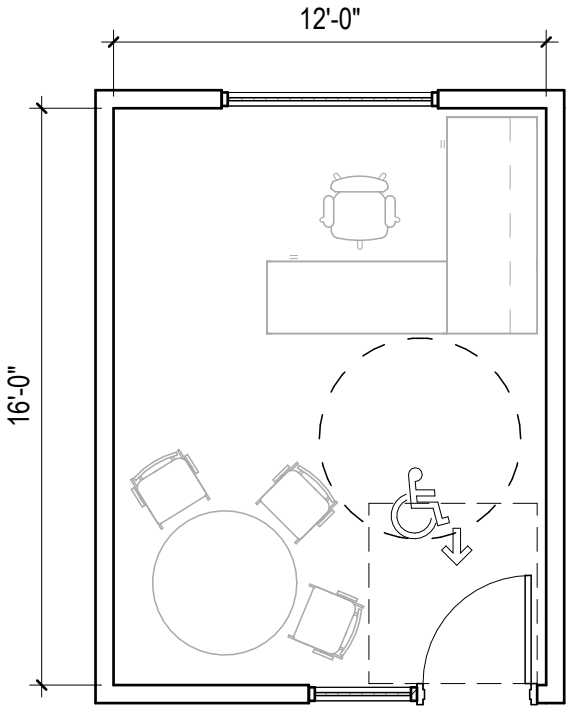
OFFICES - TYPICAL

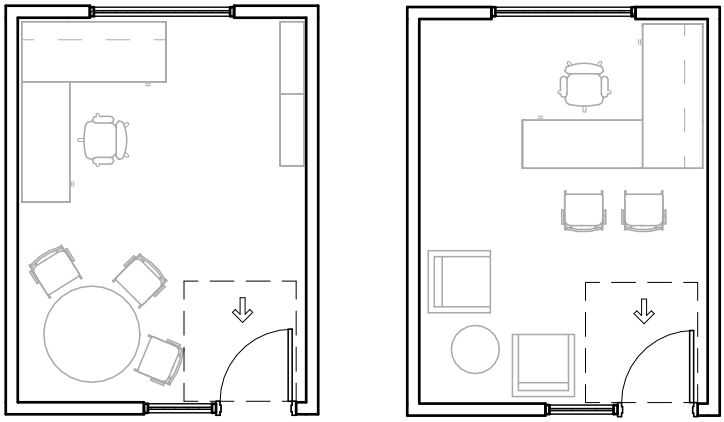
DEPARTMENT: Offices	# of Faculty/Staff: 1	# OF SPACES: -	SPACE ID NO: 7.2
SPACE NAME: Chair / Director	# of Students: -	NSF: 200	

Describe the function of the space:
Standard offices for Chair and Director positions.

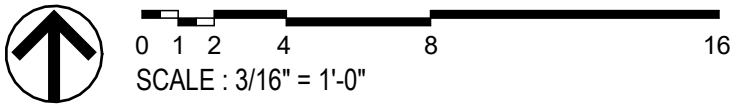
Adjacencies: Varies

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





ALTERNATIVE LAYOUTS SHOWN FOR REFERENCE (NTS)



SCALE : 3/16" = 1'-0"

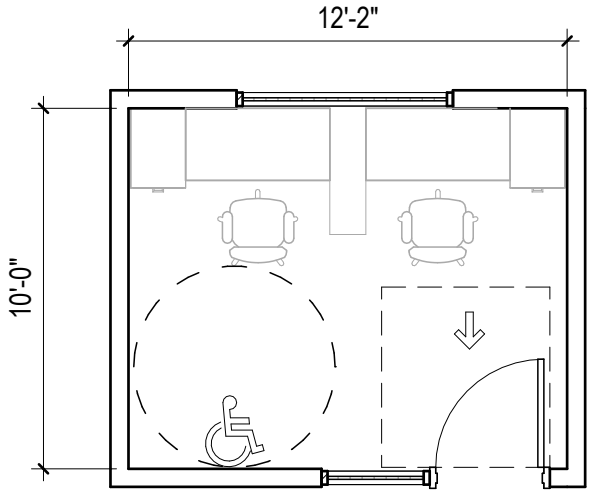
OFFICES - CHAIR/DIRECTOR

DEPARTMENT: Offices	# of Faculty/Staff: 2	# OF SPACES: -	SPACE ID NO: 7.3
SPACE NAME: Quarterly Faculty / Adjunct	# of Students: -	NSF: 120	

Describe the function of the space:
Standard shared offices for quarterly or adjunct faculty.

Adjacencies: Varies

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems - Translucent
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



0 1 2 4 8 16
SCALE : 3/16" = 1'-0"

OFFICES - QUARTERLY FACULTY / ADJUNCT

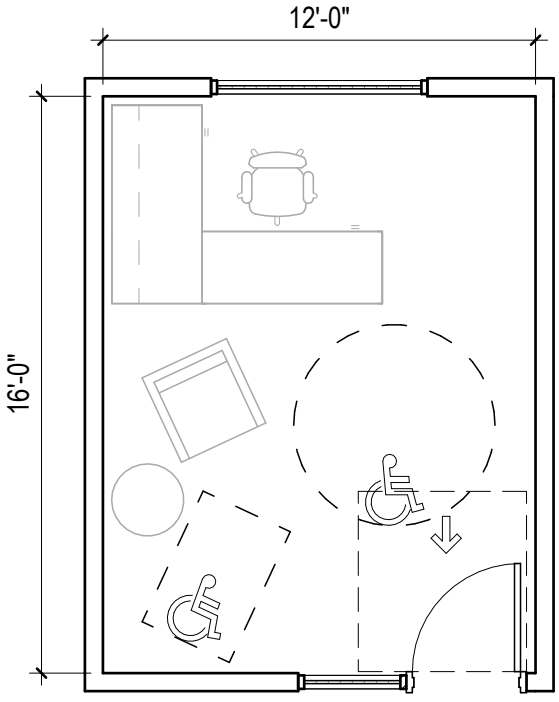
DEPARTMENT: Offices	# of Faculty/Staff: 2	# OF SPACES: -	SPACE ID NO: 7.4
SPACE NAME: Counselor	# of Students: -	NSF: 200	

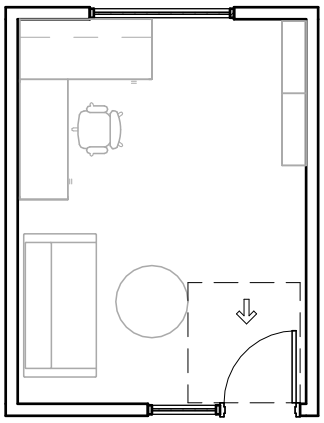
Describe the function of the space:

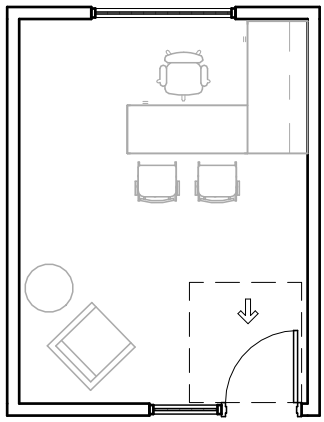
Standard offices for Counselor, Case Manager, and Coach positions.

Adjacencies: Varies

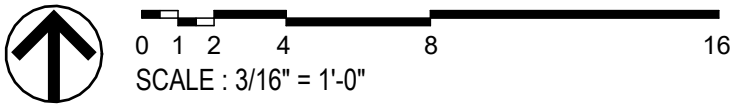
SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Louvered Blinds, Roller	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate Casework	Full Height Walls
wall surface	ceiling finish	miscellaneous
Dry Erase Wall Covering	tbd	Outdoor Access







ALTERNATIVE LAYOUTS SHOWN FOR REFERENCE (NTS)



OFFICES - COUNSELOR

SECTION 6

APPENDICES

6.3 COMPLETED LIFE CYCLE COST MODEL

Project and Existing Facility Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Agency**	Eastern Washington University
*	**Project Title**	Martin Williamson Hall
*	**Date of Analysis:**	**5/7/2024**
	Analysis Period	
*	Years of Analysis (If not 30 or 50)	

Existing Facility Description	

Existing Lease Information	**Lease 1**	**Lease 2**	**Lease 3**	**Lease 4**	**Lease 5**	**Lease 6**	**Total**
Existing Square Feet							-
Lease Start Date / Last Lease Increase							
Lease End Date							
Lease Rate per Month							$ -
Lease Rate per SF per Year at End Date							
Additional Operating Costs per Month	$ -						$ -
Total Lease Costs per Month							$ -
* Persons Relocating							-
SF per Person Calculated							
Estimated Lease Renewal Rate - 5 Year							$ -

Lease Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

* **New Lease Option 1 Description**	

	New Lease Information		
*	Lease Location		Market Area:
*	Lease Square Feet Type		
*	New Facility Square Feet		
*	New Lease Start Date		
	SF per Person Calculated		

	New Lease Costs	Years of Term	Rate / SF / Year	Rate / Month	Adjusted to FS Rate	Total FS Rate / Month	Estimated FSG Market Rate	Estimated FSG Rate / Month	Real Estate Transaction Fees for Term
*	Year				$ -	$ -	$ -		
	Years				$ -	$ -			
	Years				$ -	$ -			
	Years				$ -	$ -			
	Years				$ -	$ -			
	Total Length of Lease	0							$ -
	Transaction Fee for first 5 Years	2.50%	*of total rent for first 5 years of term*						
	Transaction Fee for Additional Years	1.25%	*of total rent for term beyond 5 years*						

Note: Real estate transaction fees calculated on base lease - not full service rate including added services and utilities.

Added Services	New Lease Operating Costs (Starting in current year)	Known Cost / SF / Year	Estimated Cost / SF / Year	Total Cost / Year	Cost / Month
☐	Energy (Electricity, Natural Gas)	$ -	$ -	$ -	$ -
☐	Janitorial Services	$ -	$ -	$ -	$ -
☐	Utilities (Water, Sewer, & Garbage)	$ -	$ -	$ -	$ -
☐	Grounds	$ -	$ -	$ -	$ -
☐	Pest Control	$ -	$ -	$ -	$ -
☐	Security	$ -	$ -	$ -	$ -
☐	Maintenance and Repair	$ -	$ -	$ -	$ -
☐	Management	$ -	$ -	$ -	$ -
☐	Road Clearance	$ -	$ -	$ -	$ -
☐	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ -**	**$ -**	**$ -**

Escalated to lease start date

	New Lease One Time Costs	Current Estimate	Calculated (for reference)	
*	Real Estate Transaction Fees		$ -	*Per Std %*
*	Tenant Improvements		$ -	*$150 per SF*
*	IT Infrastructure		$ -	*$1500 per Person*
*	Furniture Costs		$ -	*$7000 per Person*
*	Building Security and Access Systems			*$450 per person*
*	Moving Vendor and Supplies		$ -	*$300 per Person*
	Other / Incentive			
	Total	$ -	$ -	

Biennium Budget Impacts for New Lease	Biennium Time Period Start	Biennium Time Period Finish	Existing Lease Option	New Lease Option 1	Biennium Impact:
21-23 Biennium Lease Expenditure	7/1/2021	6/30/2023	$ -	$ -	$ -
23-25 Biennium Lease Expenditure	7/1/2023	6/30/2025	$ -	$ -	$ -
25-27 Biennium Lease Expenditure	7/1/2025	6/30/2027	$ -	$ -	$ -
27-29 Biennium Lease Expenditure	7/1/2027	6/30/2029	$ -	$ -	$ -
29-31 Biennium Lease Expenditure	7/1/2029	6/30/2031	$ -	$ -	$ -

Lease Option 2 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

*	**New Lease Option 2 Description**	

New Lease Information		
Lease Location		Market Area:
Lease Square Feet Type		
New Facility Square Feet		
New Lease Start Date		
SF per Person Calculated		

New Lease Costs	**Years of Term**	**Rate / SF / Year**	**Rate / Month**	**Adjusted to FS Rate**	**Total FS Rate / Month**	**Estimated FSG Market Rate**	**Estimated FSG Rate / Month**	**Real Estate Transaction Fees for Term**
Year				$ -	$ -	$ -		
Years				$ -	$ -			
Years				$ -	$ -			
Years				$ -	$ -			
Years				$ -	$ -			
Total Length of Lease	0							$ -
Transaction Fee for first 5 Years	2.50%	*of total rent for first 5 years of term*						
Transaction Fee for Additional Years	1.25%	*of total rent for term beyond 5 years*						

Note: Real estate transaction fees calculated on base lease - not including added services and utilities.

Added Services	New Lease Operating Costs (Starting in current year)	Known Cost / SF / Year	Estimated Cost / SF / Year	Total Cost / Year	Cost / Month
☐	Energy (Electricity, Natural Gas)	$ -	$ -	$ -	$ -
☑	Janitorial Services	$ -	$ -	$ -	$ -
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ -	$ -	$ -
☐	Grounds	$ -	$ -	$ -	$ -
☐	Pest Control	$ -	$ -	$ -	$ -
☐	Security	$ -	$ -	$ -	$ -
☐	Maintenance and Repair	$ -	$ -	$ -	$ -
☐	Management	$ -	$ -	$ -	$ -
☐	Road Clearance	$ -	$ -	$ -	$ -
☐	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ -**	**$ -**	**$ -**

Escalated to lease start date

New Lease One Time Costs	Current Estimate	Calculated (for reference)	
Real Estate Transaction Fees		$ -	*Per Std %*
Tenant Improvements		$ -	*$150 / RSF*
IT Infrastructure		$ -	*$1500 / Person*
Furniture Costs		$ -	*$7000 / Person*
Building Security and Access Systems			*$450 / Person*
Moving Vendor and Supplies		$ -	*$300 / Person*
Other / Incentive			
Total	$ -	$ -	

Biennium Budget Impacts for New Lease	Biennium Time Period Start	Finish	Existing Lease Option	New Lease Option 2	Biennium Impact:
21-23 Biennium Lease Expenditure	7/1/2021	6/30/2023	$ -	$ -	$ -
23-25 Biennium Lease Expenditure	7/1/2023	6/30/2025	$ -	$ -	$ -
25-27 Biennium Lease Expenditure	7/1/2025	6/30/2027	$ -	$ -	$ -
27-29 Biennium Lease Expenditure	7/1/2027	6/30/2029	$ -	$ -	$ -
29-31 Biennium Lease Expenditure	7/1/2029	6/30/2031	$ -	$ -	$ -

Ownership Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Martin Williamson - No Action
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	91,500
*	Usable Sq Ft	49,275
	Space Efficiency	54%
	Estimated Acres Needed	4.00
	MACC Cost per Sq Ft	$361.88
	Estimated Total Project Costs per Sq Ft	$395.79
	Escalated MACC Cost per Sq Ft	$361.88
	Escalated Total Project Costs per Sq Ft	$395.79

*	**Move In Date**	7/1/2024

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total	$ -	$ 1,000,000	$ 1,000,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	0.00%	6.46% Std	6.46%
	Pre-Schematic Design services	$ 281,446		
	Construction Documents	$ -		
	Extra Services	$ -		
	Other Services	$ -		
	Design Services Contingency	$ -		
	Consultant Services Total	$ 281,446	$ 1,780,101	$ 281,446
MACC	**Construction Contracts**			
	Site Work	$ -		
	Related Project Costs	$ -		
	Facility Construction	$ -		
	MACC SubTotal	$ -	$ 33,112,020	$ 33,112,020
	Construction Contingency (5% default)	$ -	$ 1,655,601	$ 1,655,601
	Non Taxable Items	$ -		$ -
	Sales Tax	$ -		
	Construction Additional Items Total	$ -	$ 1,655,601	$ 1,655,601
	Equipment			
	Equipment	$ -		
	Non Taxable Items	$ -		
	Sales Tax	$ -		
	Equipment Total	$ -		$ -
	Art Work Total	$ -	$ 165,560	$ 165,560
	Other Costs			
		$ -		
		$ -		
		$ -		
	Other Costs Total	$ -		$ -
	Project Management Total	$ -		$ -
	Grand Total Project Cost	**$ 281,446**	**$ 37,713,282**	**$ 36,214,627**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies	$ -	$ -	*$300 / Person in FY24*
Other (not covered in construction)	$ -		
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2024	Estimated Cost /GSF/ 2024	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ 0.87	$ 1.06	$ 79,605	$ 6,634
☑	Janitorial Services	$ 1.50	$ 1.55	$ 137,250	$ 11,438
☑	Utilities (Water, Sewer, & Garbage)	$ 3.25	$ 0.40	$ 297,375	$ 24,781
☑	Grounds	$ 0.50	$ 0.06	$ 45,750	$ 3,813
☑	Pest Control	$ 0.50	$ 0.10	$ 45,750	$ 3,813
☑	Security	$ 1.00	$ 0.10	$ 91,500	$ 7,625
☑	Maintenance and Repair	$ 7.00	$ 6.09	$ 640,500	$ 53,375
☑	Management	$ 1.00	$ 0.91	$ 91,500	$ 7,625
☑	Road Clearance	$ 0.38	$ 0.14	$ 34,770	$ 2,898
☑	Telecom	$ 0.50	$ -	$ 45,750	$ 3,813
	Additional Parking	$ 0.50	$ -	$ 45,750	$ 3,813
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 17.00**	**$ 10.43**	**$ 1,555,500**	**$ 129,625**

Ownership Option 2 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Martin Williamson - Renovate and Replace (ALT B Phase 1 & 2)
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	133,000
*	Usable Sq Ft	87,062
	Space Efficiency	65%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$631.12
	Estimated Total Project Costs per Sq Ft	$931.25
	Escalated MACC Cost per Sq Ft	$762.16
	Escalated Total Project Costs per Sq Ft	$1,124.60

*	**Move In Date**	6/1/2031

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total	$ -	$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.38% Std	5.38%
	Pre-Schematic Design services	$ 281,446		
	Construction Documents	$ 5,721,114		
	Extra Services	$ 2,199,000		
	Other Services	$ 2,730,356		
	Design Services Contingency	$ 1,093,192		
	Consultant Services Total	$ 12,025,108	$ 4,512,543	$ 12,025,108
MACC	**Construction Contracts**			
	Site Work	$ 2,665,426		
	Related Project Costs	$ 576,000		
	Facility Construction	$ 80,697,325		
	MACC SubTotal	$ 83,938,751	$ 48,130,040	$ 83,938,751
	Construction Contingency (5% default)	$ 8,393,875	$ 8,393,875	$ 8,393,875
	Non Taxable Items	$ 419,694		$ 419,694
	Sales Tax	$ 8,255,013		$ 8,255,013
	Construction Additional Items Total	$ 17,068,582	$ 17,068,582	$ 17,068,582
	Equipment			
	Equipment	$ 5,285,937		
	Non Taxable Items	$ -		
	Sales Tax	$ 470,448		
	Equipment Total	$ 5,756,385		$ 5,756,385
	Art Work Total	$ 707,227	$ 419,694	$ 707,227
	Other Costs			
		$ -		
	Other Costs Total	$ -		$ -
	Project Management Total	$ 3,109,860		$ 3,109,860
	Grand Total Project Cost		**$ 71,380,859**	**$ 123,855,913**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2031	Estimated Cost /GSF/ 2031	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.67	$ 1.28	$ 89,110	$ 7,426
☑	**Janitorial Services**	$ 1.50	$ 1.87	$ 199,500	$ 16,625
☑	**Utilities (Water, Sewer, & Garbage)**	$ 3.25	$ 0.48	$ 432,250	$ 36,021
☑	**Grounds**	$ 0.50	$ 0.07	$ 66,500	$ 5,542
☑	**Pest Control**	$ 0.50	$ 0.12	$ 66,500	$ 5,542
☑	**Security**	$ 1.00	$ 0.12	$ 133,000	$ 11,083
☑	**Maintenance and Repair**	$ 7.00	$ 7.36	$ 931,000	$ 77,583
☑	**Management**	$ 1.00	$ 1.10	$ 133,000	$ 11,083
☑	**Road Clearance**	$ 0.38	$ 0.17	$ 50,540	$ 4,212
☑	**Telecom**	$ 0.50	$ -	$ 66,500	$ 5,542
	Additional Parking	$ 0.50	$ -	$ 66,500	$ 5,542
	Other		$ -	$ -	$ -
	Total Operating Costs	**$ 16.80**	**$ 12.59**	**$ 2,234,400**	**$ 186,200**

Ownership Option 3 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Martin Williamson - Historic Screen (ALT C Phase 1 & 2)
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	124,375
*	Usable Sq Ft	87,062
	Space Efficiency	70%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$728.47
	Estimated Total Project Costs per Sq Ft	$1,079.76
	Escalated MACC Cost per Sq Ft	$879.73
	Escalated Total Project Costs per Sq Ft	$1,303.95

*	**Move In Date**	6/1/2031

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total	$ -	$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.29% Std	5.29%
	Pre-Schematic Design services	$ 281,465		
	Construction Documents	$ 6,660,848		
	Extra Services	$ 2,199,000		
	Other Services	$ 3,152,555		
	Design Services Contingency	$ 1,229,385		
	Consultant Services Total	$ 13,523,253	$ 4,791,424	$ 13,523,253
MACC	**Construction Contracts**			
	Site Work	$ 2,879,401		
	Related Project Costs	$ 3,020,000		
	Facility Construction	$ 84,704,506		
	MACC SubTotal	$ 90,603,907	$ 45,008,825	$ 90,603,907
	Construction Contingency (5% default)	$ 9,060,391	$ 9,060,391	$ 9,060,391
	Non Taxable Items	$ 267,684		$ 267,684
	Sales Tax	$ 8,894,075		$ 8,894,075
	Construction Additional Items Total	$ 18,222,150	$ 18,222,150	$ 18,222,150
	Equipment			
	Equipment	$ 5,285,937		
	Non Taxable Items	$ -		
	Sales Tax	$ 470,449		
	Equipment Total	$ 5,756,386		$ 5,756,386
	Art Work Total	$ 767,595	$ 453,020	$ 767,595
	Other Costs			
		$ -		
	Other Costs Total	$ -		$ -
	Project Management Total	$ 4,171,718		$ 4,171,718
	Grand Total Project Cost		**$ 69,725,419**	**$ 134,295,009**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2031	Estimated Cost /GSF/ 2031	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.47	$ 1.28	$ 58,456	$ 4,871
☑	**Janitorial Services**	$ 1.50	$ 1.87	$ 186,563	$ 15,547
☑	**Utilities (Water, Sewer, & Garbage)**	$ 3.25	$ 0.48	$ 404,219	$ 33,685
☑	**Grounds**	$ 0.50	$ 0.07	$ 62,188	$ 5,182
☑	**Pest Control**	$ 0.50	$ 0.12	$ 62,188	$ 5,182
☑	**Security**	$ 1.00	$ 0.12	$ 124,375	$ 10,365
☑	**Maintenance and Repair**	$ 7.00	$ 7.36	$ 870,625	$ 72,552
☑	**Management**	$ 1.00	$ 1.10	$ 124,375	$ 10,365
☑	**Road Clearance**	$ 0.38	$ 0.17	$ 47,263	$ 3,939
☑	**Telecom**	$ 0.50	$ -	$ 62,188	$ 5,182
	Additional Parking	$ 0.50	$ -	$ 62,188	$ 5,182
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 16.60**	**$ 12.59**	**$ 2,064,625**	**$ 172,052**

Life Cycle Cost Analysis - Project Summary

Agency	Eastern Washington University
Project Title	Martin Williamson Hall

Existing Description	

Lease Option 1 Description	

Lease Option 2 Description	

Ownership Option 1 Description	Martin Williamson - No Action

Ownership Option 2 Description	Martin Williamson - Renovate and Replace (ALT B Phase 1 & 2)

Ownership Option 3 Description	Martin Williamson - Historic Screen (ALT C Phase 1 & 2)

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	-	-
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	$ -	$ -
Occupancy Date	n/a		
Project Initial Costs	n/a	$ -	$ -
Persons Relocating	-	-	-
RSF/Person Calculated			

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	91,500	133,000	124,375
Total Rentable Square Feet	49,275	87,062	87,062
Occupancy Date	7/1/2024	6/1/2031	6/1/2031
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 396	$ 1,125	$ 1,304
RSF/Person Calculated	-	-	-

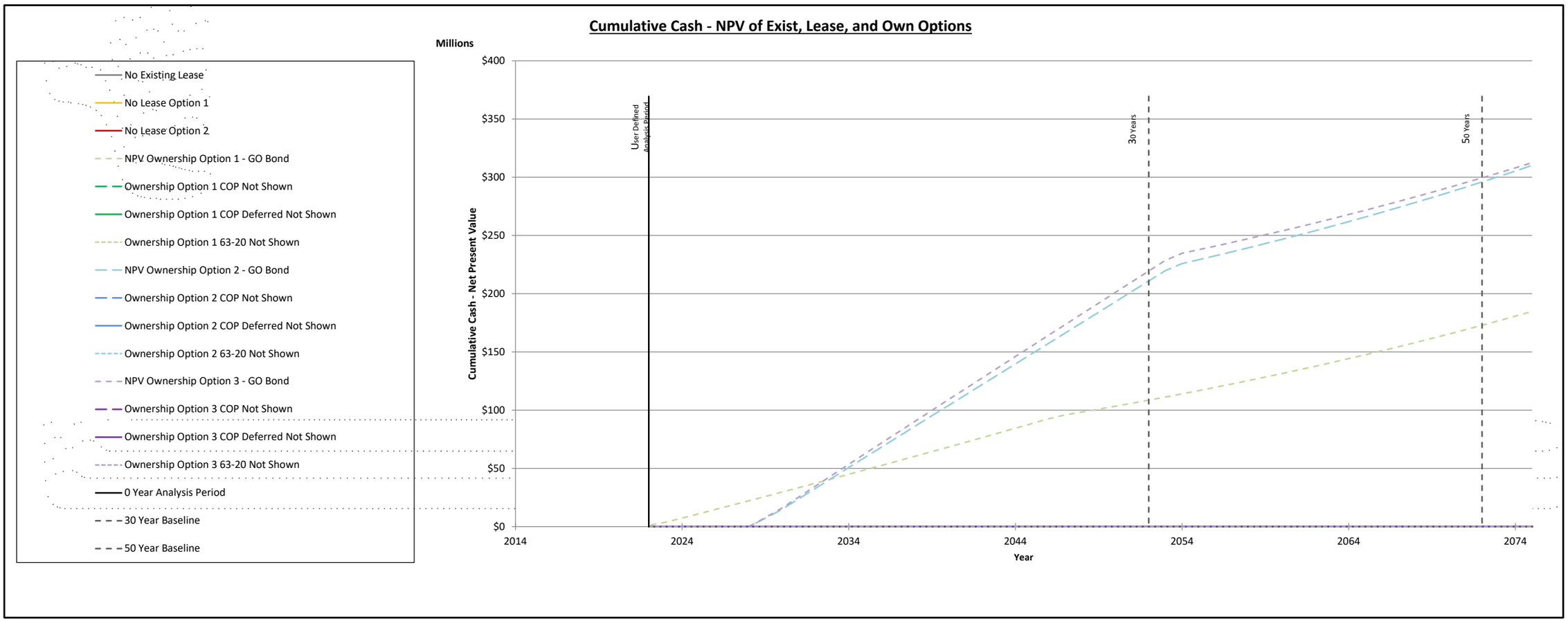
Financial Analysis of Options

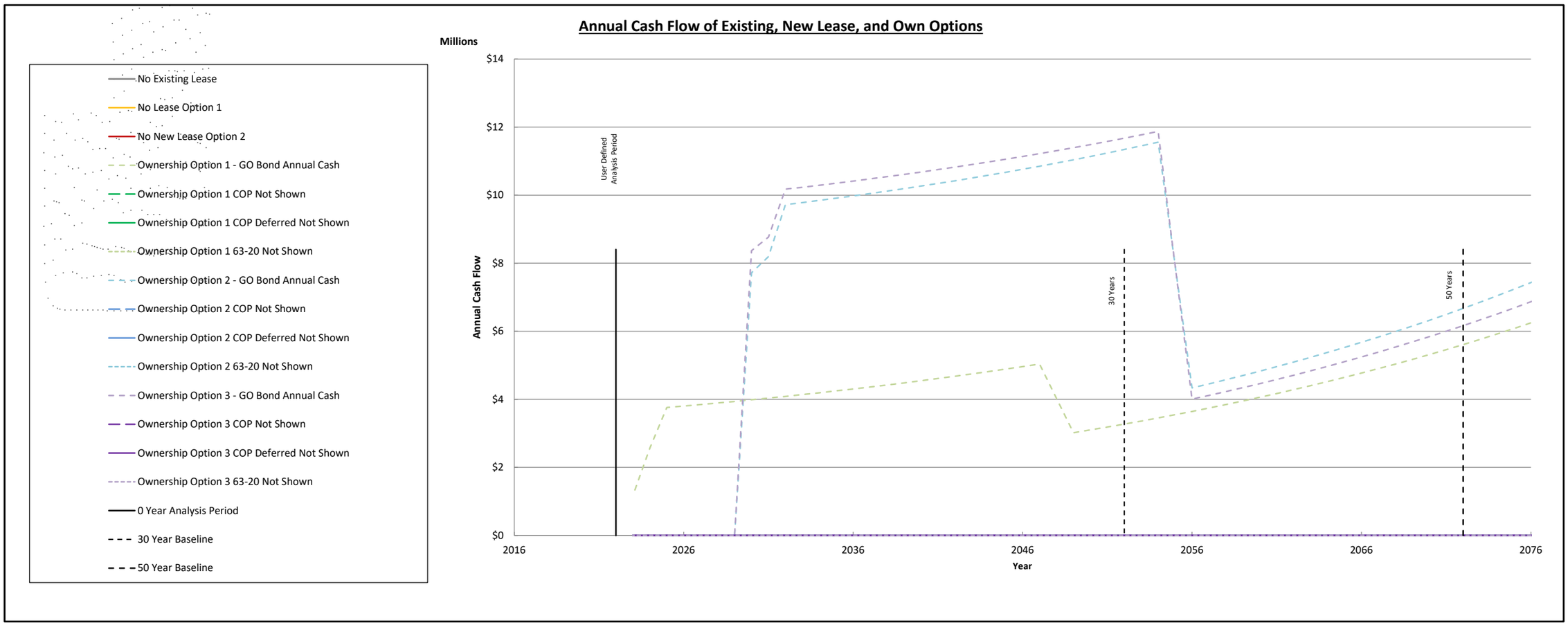
	Display Option?	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	No	No
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
0	0 Year Cumulative Cash	$ -	$ -	$ -	$ -				$ -				$ -			
	0 Year Net Present Value	$ -	$ -	$ -	$ -				$ -				$ -			
	Lowest Cost Option (Analysis Period)															

	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
30	30 Year Cumulative Cash	$ -	$ -	$ -	$ 119,835,532				$ 235,284,648				$ 244,911,681			
	30 Year Net Present Value	$ -	$ -	$ -	$ 105,789,331				$ 201,722,945				$ 210,065,797			
	Lowest Cost Option (30 Years)				**1**				**2**				**3**			

	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
50	50 Year Cumulative Cash	$ -	$ -	$ -	$ 207,527,180				$ 358,216,854				$ 361,488,155			
	50 Year Net Present Value	$ -	$ -	$ -	$ 168,770,287				$ 291,065,004				$ 294,931,694			
	Lowest Cost Option (50 Years)				**1**				**2**				**3**			

** - Defers payment on principle for 2 years while the building is being constructed. See instructions on Capitalized Interest.*


Cumulative Cash - NPV of Exist, Lease, and Own Options
Millions
$400
$350
$300
$250
$200
$150
$100
$50
$0
Cumulative Cash - Net Present Value
2014
2024
2034
2044
2054
2064
2074
Year
User Defined Analysis Period
30 Years
50 Years
No Existing Lease
No Lease Option 1
No Lease Option 2
NPV Ownership Option 1 - GO Bond
Ownership Option 1 COP Not Shown
Ownership Option 1 COP Deferred Not Shown
Ownership Option 1 63-20 Not Shown
NPV Ownership Option 2 - GO Bond
Ownership Option 2 COP Not Shown
Ownership Option 2 COP Deferred Not Shown
Ownership Option 2 63-20 Not Shown
NPV Ownership Option 3 - GO Bond
Ownership Option 3 COP Not Shown
Ownership Option 3 COP Deferred Not Shown
Ownership Option 3 63-20 Not Shown
0 Year Analysis Period
30 Year Baseline
50 Year Baseline


Annual Cash Flow of Existing, New Lease, and Own Options
Millions
$14
$12
$10
$8
$6
$4
$2
$0
Annual Cash Flow
2016
2026
2036
2046
2056
2066
2076
Year
User Defined Analysis Period
30 Years
50 Years
No Existing Lease
No Lease Option 1
No New Lease Option 2
Ownership Option 1 - GO Bond Annual Cash
Ownership Option 1 COP Not Shown
Ownership Option 1 COP Deferred Not Shown
Ownership Option 1 63-20 Not Shown
Ownership Option 2 - GO Bond Annual Cash
Ownership Option 2 COP Not Shown
Ownership Option 2 COP Deferred Not Shown
Ownership Option 2 63-20 Not Shown
Ownership Option 3 - GO Bond Annual Cash
Ownership Option 3 COP Not Shown
Ownership Option 3 COP Deferred Not Shown
Ownership Option 3 63-20 Not Shown
0 Year Analysis Period
30 Year Baseline
50 Year Baseline

SECTION 6

APPENDICES

6.4 COST ESTIMATE REPORT

ROEN ASSOCIATES

PROJECT INFORMATION

EWU Martin & Williamson Hall

June 27, 2024

EXECUTIVE SUMMARY

Owner:	Eastern Washington University	Estimate Date:	June 27, 2024
Name:	EWU Martin & Williamson Hall	Building Area:	133,000
Location:	Cheney, WA	Site Area:	98,800

Seattle Office:	Roen Associates 500 Union Street, Suite 927 Seattle, WA 98101	Contact Name: Telephone: E-mail:	Dan Deymonaz Jovelyn Limbag (206) 343-1003 dan@roenassociates.com jovelyn@roenassociates.com
Spokane Office:	Roen Associates 121 South Wall Spokane, WA 99201	Contact Name: Telephone: E-mail:	- (509) 838-8688 -

Project Type:	University			
Estimate Level:	PreDesign Estimate			
Project Start:	Q3, 2027	Project Duration:	40	months

DOCUMENTS REVIEWED

	Document	A / E / C Firm	Date
Drawings:	2023-25Predesign	Integrus Architecture	2023
Reports:			

Construction Cost Summary

Owner: **Eastern Washington University**

Project: **EWU Martin & Williamson Hall**

Alternate A Cost Summary

June 27, 2024

- No Action

Alternate B Cost Summary

Item	Description	QTY	UOM	$ / UOM	Cost
1	Phase 1 - Renovation & Restoration of Martin Hall	59,200	BGSF	$ 563.04	$ 33,331,761
2	Phase 1 - Sitework	72,070	SGA	$ 27.51	$ 1,982,742
3	Williamson Hall Full Bldg. Demolition & Abatement	32,000	BGSF	$ 18.00	$ 576,000
4	General Conditions & Support Services	20	MO	$ 75,000.00	$ 1,500,000
Total Estimated Construction Cost (Today's Dollars)					**$ 37,390,503**
5	Phase 2 - Replacement of Williamson Hall	73,800	BGSF	$ 601.16	$ 44,365,564
6	Phase 2 - Sitework	26,730	SGA	$ 25.54	$ 682,684
7	General Conditions & Support Services	20	MO	$ 75,000.00	$ 1,500,000
Total Estimated Construction Cost (Today's Dollars)					**$ 46,548,248**

ALT B PHASE 1 & PHASE 2 Combined Construction Cost (Today's Dollars)	**$ 83,938,751**

Alternate C Cost Summary

Item	Description	QTY	UOM	$ / UOM	Cost
1	Phase 1 - New Construction of Williamson Hall	71,478	BGSF	$ 662.60	$ 47,361,526
2	Phase 1 - Sitework	43,740	SGA	$ 37.84	$ 1,655,294
3	Full Building Demolition & Abatement	95,000	BGSF	$ 24.00	$ 2,280,000
4	Shoring of Existing Historic Façade	1	LS	$ 740,000	$ 740,000
5	General Conditions & Support Services	20	MO	$ 75,000.00	$ 1,500,000
Total Estimated Construction Cost (Today's Dollars)					**$ 53,536,820**
6	Phase 2 - New Construction of Martin Hall	52,897	BGSF	$ 649.25	$ 34,342,980
7	Phase 2 - Sitework	55,060	SGA	$ 22.23	$ 1,224,107
8	General Conditions & Support Services	20	MO	$ 75,000.00	$ 1,500,000
Total Estimated Construction Cost (Today's Dollars)					**$ 37,067,087**

ALT C PHASE 1 & PHASE 2 Combined Construction Cost (Today's Dollars)	**$ 90,603,907**

COMMENTS:

Design, Bid, Build delivery method is assumed

Assumes a Q3, 2027 start and a 40 month schedule

Escalation is predicted to be 4% in 2024 and 4% through 2027.

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	71,478
Project Start Date:	Q3, 2027	**Site GSF:**	43,740
Estimate Date:	June 27, 2024		

FF&E ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
PHASE 1 FFE COST							
EWU FFE Cost							
	Furnishings	1	ls	$	1,624,695	$	1,624,695
	Equipment (Fixed)	1	ls	$	341,665	$	341,665
	Equipment (Movable)	1	ls	$	355,246	$	355,246
	Telecom / Networking	1	ls	$	436,016	$	436,016
	Custodial Equip / Supplies	1	ls	$	280,194	$	280,194
	Subtotal					$	3,037,815
	Installation (Including Delivery, & Distribution)						Incl.
PHASE 1 - FFE GRAND TOTAL						**$**	**3,037,815**
PHASE 2 FFE COST							
EWU FFE Cost							
	Furnishings	1	ls	$	1,202,349	$	1,202,349
	Equipment (Fixed)	1	ls	$	252,848	$	252,848
	Equipment (Movable)	1	ls	$	262,898	$	262,898
	Telecom / Networking	1	ls	$	322,672	$	322,672
	Custodial Equip / Supplies	1	ls	$	207,356	$	207,356
	Subtotal					$	2,248,123
	Installation (Including Delivery, & Distribution)						Incl.
PHASE 2 - FFE GRAND TOTAL						**$**	**2,248,123**

Estimate excludes soft costs such as design fees, permits, testing / inspections, sales tax and construction change order contingencies.

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	59,200
Project Start Date:	Q1, 2026	**Site GSF:**	72,070
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	59,200	BGSF	$ 2.13	$ 126,100
A20	Basement Construction	59,200	BGSF	$ -	$ -
B10	Superstructure	59,200	BGSF	$ 24.07	$ 1,425,200
B20	Exterior Enclosure	59,200	BGSF	$ 36.07	$ 2,135,275
B30	Roofing	59,200	BGSF	$ 2.07	$ 122,786
C10	Interior Construction	59,200	BGSF	$ 61.57	$ 3,644,835
C20	Stairs	59,200	BGSF	$ 0.58	$ 34,500
C30	Interior Finishes	59,200	BGSF	$ 36.46	$ 2,158,300
D10	Conveying Systems	59,200	BGSF	$ 2.87	$ 170,000
D20	Plumbing	59,200	BGSF	$ 31.43	$ 1,860,712
D30	HVAC	59,200	BGSF	$ 100.90	$ 5,973,229
D40	Fire Protection	59,200	BGSF	$ 6.39	$ 378,084
D50	Electrical	59,200	BGSF	$ 78.97	$ 4,675,004
E10	Equipment	59,200	BGSF	$ 0.35	$ 21,000
E20	Casework & Furnishings	59,200	BGSF	$ 11.53	$ 682,580
F10	Special Construction	59,200	BGSF	$ 24.31	$ 1,439,400
F20	Selective Demolition	59,200	BGSF	$ 22.93	$ 1,357,210
BUILDING CONSTRUCTION SUBTOTAL					**$ 26,204,215**
	Design Contingency			20.00%	$ 5,240,843
	Subtotal				$ 31,445,058
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 1,886,703
	Subtotal				$ 33,331,761
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**59,200**	**BGSF**	**$ 563.04**	**$ 33,331,761**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**						
	Foundation Earthwork						
	Footing Excavation and Backfill (Native Soil)	1	ls	$	10,500.00	$	10,500
	Footing Drains with Gravel	240	lf	$	30.00	$	7,200
	Foundations						
	Spread Footings, Continuous Footings & Perimeter Stem Wall (includes reinforcing)	3,200	sf	$	8.00	$	25,600
	Slab-on-Grade						
	New Addition Slab on Grade (includes reinforcing, base course and vapor barrier)	3,200	sf	$	11.50	$	36,800
	Slab on Grade (includes reinforcing, base course and vapor barrier) - Transition to New Addition & Misc. Slab Repair Allowance	1	ls	$	15,000.00	$	15,000
	Misc. Concrete						
	Mech. & Elect. Housekeeping Pads	500	sf	$	25.00	$	12,500
	Set Column Anchor Bolts & Grout Baseplates - Allowance	1	ls	$	6,500.00	$	6,500
	Perimeter Insulation / Waterproofing						
	2" Rigid Polystyrene	960	sf	$	4.00	$	3,840
	Stem Wall Dampproofing	960	sf	$	8.50	$	8,160
	SUBTOTAL FOUNDATIONS	**59,200**	**BGSF**	**$**	**2.13**	**$**	**126,100**
A20	**BASEMENT CONSTRUCTION**						
	Basement Construction						
	SUBTOTAL BASEMENT CONSTRUCTION	**59,200**	**BGSF**	**$**	**-**	**$**	**-**
B10	**SUPERSTRUCTURE**						
	CIP Structural Concrete						
	Horizontal Structure						
	Topping Slabs						
	4.5" Avg. Slab with Reinforcing	3,200	sf	$	8.00	$	25,600
	Structural Steel						
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)						
	New Addition Structural Framing (12 psf Allowance for Floor)	74,400	lbs	$	3.50	$	260,400
	Renovation Structural Seismic Framing Allowance	238,500	lbs	$	4.00	$	954,000
	Metal Decking						
	Floor Decking - 3"	3,200	sf	$	9.00	$	28,800
	Roofing Decking - 1.5"	3,200	sf	$	6.50	$	20,800
	Miscellaneous Metals						
	Allowance	59,200	gsf	$	0.50	$	29,600
	Building Canopies - Allowance	1,500	sf	$	50.00	$	75,000

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Fireproofing						
	Structural Steel Fireproofing						
	Sprayed Cementitious Fireproofing (Metal Deck Area)	6,200	sf	$	5.00	$	31,000
	Firestopping - See Interior Partitions						
	SUBTOTAL SUPERSTRUCTURE	**59,200**	**BGSF**	**$**	**24.07**	**$**	**1,425,200**
B20	**EXTERIOR ENCLOSURE**						
	Exterior Wall Construction						
	Exterior Wall Assembly - Allowance	3,072	sf	$	37.00	$	113,664
	Loadbearing CMU or Concrete Walls - In B10 Superstructure Above						
	Exterior Wall Finish						
	Masonry Veneer						
	Brick Veneer @ New Façade	3,072	sf	$	45.00	$	138,240
	Brick Veneer Repair & Repointing Allowance	22,771	sf	$	20.00	$	455,424
	Miscellaneous						
	Galvanized Steel Lintels	1	ls	$	10,000.00	$	10,000
	Sill Flashing	1	ls	$	7,500.00	$	7,500
	Exterior Windows						
	Storefront / Windows, Standard Clear Anodized with Flashing	5,669	sf	$	110.00	$	623,589
	Curtain Wall, Standard Clear Anodized with Flashing	3,456	sf	$	150.00	$	518,400
	Expansion/Seismic Joints						
	Roof Joints	90	lf	$	500.00	$	45,000
	Exterior Wall Joints	64	lf	$	500.00	$	32,000
	Exterior Doors						
	Storefront Entry Doors, Hardware, per leaf	4	ea	$	7,500.00	$	30,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	6	ea	$	4,200.00	$	25,200
	Push Button ADA Auto Operators (per entrance)	2	ea	$	10,000.00	$	20,000
	Premium for Electronic Hardware at Card Readers (Reader Devices included with Electrical)	6	ea	$	1,000.00	$	6,000
	Exterior Paint & Sealants						
	Masonry Water Repellants / Anti-Graffiti Coating	25,843	sf	$	2.50	$	64,608
	Paint to HM Doors and Frames	6	ea	$	175.00	$	1,050
	Exterior - Control Joints, Caulking and Joint Sealants	59,200	gsf	$	0.50	$	29,600
	Building Graphics						
	Allowance for Building Signage	1	ls	$	15,000.00	$	15,000
	SUBTOTAL EXTERIOR ENCLOSURE	**59,200**	**BGSF**	**$**	**36.07**	**$**	**2,135,275**
B30	**ROOFING**						
	Roof Coverings						
	Membrane Roofing System w/ Rigid Insulation	3,200	sf	$	24.00	$	76,800
	Membrane Roofing Lapping up Backside of Parapets	720	sf	$	18.00	$	12,960

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Flashing and Sheet Metal						
	Parapet Caps and Copings	240	lf	$	35.00	$	8,400
	Fascia	90	lf	$	30.00	$	2,700
	Miscellaneous Roof Flashing and Rough Carpentry	10%	on	$	89,760.00	$	8,976
	Downspouts	2	ea	$	350.00	$	700
	Conductor Heads	2	ea	$	375.00	$	750
	Roof Accessories						
	Walk Pads	1	ls	$	2,500.00	$	2,500
	Fall Protection Anchors	4	ea	$	750.00	$	3,000
	Access Ladders	1	ea	$	3,500.00	$	3,500
	Roof Hatches	1	ea	$	2,500.00	$	2,500
	SUBTOTAL ROOFING	**59,200**	**BGSF**	**$**	**2.07**	**$**	**122,786**
C10	**INTERIOR CONSTRUCTION**						
	Partitions						
	GWB Partition (GWB - Finish 2 Sides, metal studs 6", 3 1/2" sound batts) - Renovation	89,600	sf	$	18.00	$	1,612,800
	GWB Partition (GWB - Finish 2 Sides, metal studs 6", 3 1/2" sound batts) - New Addition	5,120	sf	$	18.00	$	92,160
	Fire Caulking at Penetrations	59,200	gsf	$	0.50	$	29,600
	Interior - Caulking and Joint Sealants	59,200	gsf	$	0.45	$	26,640
	Miscellaneous Carpentry - Allowance	59,200	gsf	$	1.50	$	88,800
	Concrete & CMU Walls - See B10 Superstructure Above						
	Interior Glazing						
	Interior Storefront with 1/4" tempered glazing	9,472	sf	$	65.00	$	615,680
	HM Sidelights/Relites with 1/4" tempered glazing	1	ls	$	20,000.00	$	20,000
	HM Door Lite Glazing	1	ls	$	10,000.00	$	10,000
	Interior Doors, Frames, Hardware						
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	169	ea	$	4,200.00	$	710,400
	Premium for Hardware at Card Readers (Reader Devices included with Electrical) - Allowance	1	ls	$	30,000.00	$	30,000
	Premium for 90 Minute Door - Allowance	1	ls		10,000.00	$	10,000
	Aluminum Storefront Doors, HW, Complete - per leaf	4	ea		6,500.00	$	26,000
	Access Doors and Panels	59,200	gsf	$	0.15	$	8,880
	Interior Railings						
	Balcony Rails, Glazed - Allowance	125	lf	$	375.00	$	46,875
	Sloping Stair Rails and Grabs - Included with Stairs Below						
	Fittings / Specialties - Allowances						
	Visual Display Specialties						
101100	Marker Boards (12' x 5') - Allowance	40	ea	$	1,800.00	$	72,000
	Marker Boards (6' x 5') - Allowance	21	ea	$	1,000.00	$	21,000
	Signage (Code and Wayfinding)	59,200	gsf	$	0.75	$	44,400

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Toilet Compartments (Metal) (Stainless Steel) (Solid Polymer) (P-Lam) (Phenolic)						
	Small Multi-user Restrooms (Incl. Toilet Partitions)	4	ea	$	4,500.00	$	18,000
	Large Multi-user Restrooms (Incl. Toilet Partitions)	4	ea	$	5,500.00	$	22,000
	Operable Partitions						
	Folding Panel Partitions - Allowance	1	ls	$	100,000.00	$	100,000
	Header Support	1	ls	$	10,000.00	$	10,000
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	59,200	gsf	$	0.50	$	29,600
	SUBTOTAL INTERIOR CONSTRUCTION	**59,200**	**BGSF**	**$**	**61.57**	**$**	**3,644,835**
C20	**STAIRS**						
	Stair Construction (Allowance)						
	Picket Railing @ Elevated Deck - Target Value	40	lf	$	300.00	$	12,000
	New Handrails @ Existing Stairs - Allowance	180	lf	$	125.00	$	22,500
	SUBTOTAL STAIRS	**59,200**	**BGSF**	**$**	**0.58**	**$**	**34,500**
C30	**INTERIOR FINISHES**						
	Wall Finishes - Allowances						
	Paint to Walls, Doors, Frames and Miscellaneous	59,200	gsf	$	5.00	$	296,000
	Wood Wall Panels - Allowance	59,200	gsf	$	4.00	$	236,800
	Restroom Wall Tile	1,250	sf	$	30.00	$	37,500
	Lobby Entrance Wall Finishes - Allowance for TBD	1	ls	$	25,000.00	$	25,000
	Acoustical Wall Panels						
	Fabric Covered, 1.5" Thick - TBD Allowance	5,000	sf	$	34.00	$	170,000
	Miscellaneous Finish Carpentry Allowance	59,200	gsf	$	1.50	$	88,800
	Bases						
	Rubber Base - Allowance	15,000	lf	$	3.00	$	45,000
	Tile Base - Allowance	700	lf	$	30.00	$	21,000
	Floor Finishes - Allowances						
	Carpet, Walk Off Matt Luxury Vinyl Tile, Linoleum, & Sealed Concrete	58,000	sf	$	9.50	$	551,000
	Ceramic/Quarry Tile	1,200	sf	$	30.00	$	36,000
	Floor Prep & Protection	59,200	sf	$	1.00	$	59,200
	Ceiling Finishes						
	ACT Ceiling (2x4, GWB Painted Ceilings, & Open to Structure Ceilings - Allowance	59,200	sf	$	10.00	$	592,000
	SUBTOTAL INTERIOR FINISHES	**59,200**	**BGSF**	**$**	**36.46**	**$**	**2,158,300**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	Hydraulic Elevator (2) Stops - Allowance (Retrofit)	2	ea	$	85,000.00	$	170,000
	SUBTOTAL CONVEYING SYSTEMS	**59,200**	**BGSF**	**$**	**2.87**	**$**	**170,000**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D20	**PLUMBING**						
	Plumbing						
	Plumbing - High Performance (per MW Engineers)	59,200	gsf	$	31.43	$	1,860,712
	SUBTOTAL PLUMBING	**59,200**	**BGSF**	**$**	**31.43**	**$**	**1,860,712**
D30	**HVAC**						
	HVAC						
	HVAC - High Performance (per MW Engineers)	59,200	gsf	$	100.90	$	5,973,229
	SUBTOTAL HVAC	**59,200**	**BGSF**	**$**	**100.90**	**$**	**5,973,229**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Fire Protection - High Performance (per MW Engineers)	59,200	gsf	$	6.39	$	378,084
	SUBTOTAL FIRE PROTECTION	**59,200**	**BGSF**	**$**	**6.39**	**$**	**378,084**
D50	**ELECTRICAL**						
	Electrical - High Performance (per MW Engineers)						
	Power	59,200	gsf	$	39.24	$	2,322,998
	Lighting & Controls	59,200	gsf	$	16.09	$	952,524
	Telecom, AV	59,200	gsf	$	18.95	$	1,121,835
	FA, Sec	59,200	gsf	$	4.69	$	277,647
	SUBTOTAL ELECTRICAL	**59,200**	**BGSF**	**$**	**78.97**	**$**	**4,675,004**
E10	**EQUIPMENT**						
113000	**Residential Equipment - Allowance**						
	Refrigerator	4	ea	$	2,000.00	$	8,000
	Microwave	4	ea	$	450.00	$	1,800
	Dishwasher	4	ea	$	1,000.00	$	4,000
115200	**Projection Screen Equipment**						
	Surface Mounted	12	ea	$	600.00	$	7,200
	SUBTOTAL EQUIPMENT	**59,200**	**BGSF**	**$**	**0.35**	**$**	**21,000**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework - Estimated						
	Building Allowance Per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Engineered Quartz Counters / Lab and Science Phenolic Counter Tops	59,200	sf	$	8.50	$	503,200
	Entrance Casework - Allowance	1	ls	$	30,000.00	$	30,000
	Window Treatment - Allowance						
	Black Out Roller Shades at Re-Lite Sidelight Glazing	1,200	sf	$	30.00	$	36,000
	Roller Shades	5,669	sf	$	20.00	$	113,380

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**59,200**	**BGSF**	**$**	**11.53**	**$**	**682,580**
F10	**SPECIAL CONSTRUCTION**						
	Scaffolding - Target Value						
	Erect Scaffolding, Certify and Dismantle Scaffolding Incl. First Month Rent	1	ls	$	1,100,000.00		$1,100,000
	Monthly Rental	12	mo	$	10,000.00		$120,000
	Shrink Wrap Scaffolding - (ACM Stucco Removal)	1	ls	$	200,000.00		$200,000
	Maintaining Scaffolding and Screening	200	hr	$	97.00		$19,400
	SUBTOTAL SPECIAL CONSTRUCTION	**59,200**	**BGSF**	**$**	**24.31**	**$**	**1,439,400**
F20	**SELECTIVE BUILDING DEMOLITION**						
	Building Exterior Demolition						
	Exterior Wall Assembly w Openings	53,000	sf	$	3.00	$	159,000
	Doors, Frame & HW						Incl.
	Windows & Storefront						Incl.
	Building Interior Demolition						
	Partitions w Openings	53,000	sf	$	8.00	$	424,000
	Door, Frame & HW						Incl.
	Flooring	53,000	gsf	$	1.50	$	79,500
	Rubber Base	3,500	lf	$	0.50	$	1,750
	Ceilings	53,000	gsf	$	0.75	$	39,750
	Casework	2,000	lf	$	15.00	$	30,000
	Miscellaneous Demolition	240	hrs	$	110.00	$	26,400
	Temporary Partitions / Dust Control	1	ls	$	5,000.00	$	5,000
	Supervision, Hauling & Dump Fees	15%	on	$	765,400.00	$	114,810
	Mechanical, Electrical and Plumbing	In MEP Numbers Above					
	Hazardous Components Abatement						
	ACM Removal - Allowance	53,000	sf	$	9.00	$	477,000
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**59,200**	**BGSF**	**$**	**22.93**	**$**	**1,357,210**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**59,200**	**BGSF**	**$**	**-**	**$**	**-**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	59,200
Project Start Date:	Q1, 2026	**Site GSF:**	72,070
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	72,070	SGA	$ 5.27	$ 379,783
G20	Site Improvements	72,070	SGA	$ 8.10	$ 583,767
G30	Site Civil / Mech Utilities	72,070	SGA	$ 3.75	$ 270,210
G40	Site Electrical Utilities	72,070	SGA	$ 2.60	$ 187,500
G50	Other Site Construction	72,070	SGA	$ 1.91	$ 137,500
SITEWORK SUBTOTAL					**$ 1,558,760**
	Design Contingency			20.00%	$ 311,752
	Subtotal				$ 1,870,511
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 112,231
	Subtotal				$ 1,982,742
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**72,070**	**SGA**	**$ 27.51**	**$ 1,982,742**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G10	**SITE PREPARATION**						
	General Sitework Requirements						
	Mobilization	1	ls	$	30,000.00	$	30,000
	Site Layout & Potholing	1	ls	$	5,000.00	$	5,000
	Traffic Control (for entire project)	8	weeks	$	6,500.00	$	52,000
	Site Improvements Demolition & Relocation						
	Selective Site Demo & Protection of Site Items - Allowance	72,070	sf	$	0.35	$	25,225
	Demo Utilities						
	Piping (water), Piping (sewer, storm, etc.), Structures (manhole, catch basin, hydrant), Cap Utiilities (abandon pipe in place)	72,070	sf	$	1.00	$	72,070
	Misc. Site Clearing	72,070	sf	$	0.25	$	18,018
	Site Earthwork						
	Temporary Construction Fencing	680	lf	$	12.00	$	8,160
	TESC Erosion Control - Filter Fabric Fence, Catch Basin Inlet Protection, & Stabilized Construction Entry	1	ls	$	12,500	$	12,500
	Tree Protection Fencing	1	ls	$	3,500	$	3,500
	Contractor Access and Laydown Area	2,500	sf	$	2.00	$	5,000
	Clear and Grub	72,070	sf	$	0.15	$	10,811
	Excavation						
	Native Cut / Fill - Allowance	1,500	cy	$	35	$	52,500
	Export Unsuitable - Allowance	500	cy	$	75	$	37,500
	Imported Fill - Allowance	500	cy	$	55	$	27,500
	Dewatering - Allowance	1	ls	$	20,000.00	$	20,000
	Foundation Earthwork						
	Footing Excavation and Backfill	In Building Section A10					
	Footing Drains with Gravel	In Building Section A10					
	Hazardous Waste Remediation						
	None Included						
	SUBTOTAL SITE PREPARATON	**72,070**	**SGA**	**$**	**5.27**	**$**	**379,783**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving & Concrete Site Work (Base Courses Included)						
	Heavy Duty & Light Duty (HMA over Crushed Rock), Concrete Curbs, Concrete Paving and Walkways, and Pavement Markings - Allowance	72,070	sf	$	4.00	$	288,280
	Site Development						
	Concrete Retaining Walls, Seat Walls, Fencing, Bike Rack and Flag Pole	72,070	sf	$	0.75	$	54,053
	Landscaping/Irrigation						
	Irrigation - General Landscaping - Allowance	72,070	sf	$	0.50	$	36,035

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Planter Shrubs and Ground Cover - Allowance	72,070	sf	$	2.50	$	180,175
	Trees - Allowance - Allowance	72,070	ea	$	0.35	$	25,225
	SUBTOTAL SITE IMPROVEMENTS	**72,070**	**SGA**	**$**	**8.10**	**$**	**583,767**
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Water Service Utilities (Incl. Tie-in to Existing, Water/Fire Line, Water Meter, Irrigation Meter, Valve, Domestic Water, Fire Department Connection & Existing Street Surface Repair/Traffic Control) - Allowance	72,070	sga	$	1.00	$	72,070
	Sanitary Sewer Systems						
	Sanitary Sewer Systems (Incl. Tie-in to Existing, Sewer Line, Cleanouts, Manhole, Septic System & Drain Field and Associated System & Existing Street Surface Repair/Traffic Control) - Allowance	72,070	sga	$	0.75	$	54,053
	Storm Drainage						
	Storm Drainage (Incl. Tie-in to Existing, Drain Line, Cleanouts, Catch Basin, Bioretention & Existing Street Surface Repair/Traffic Control) - Allowance	72,070	sga	$	1.25	$	90,088
	Storm Water Swale - Allowance	3,000	sf	$	18.00	$	54,000
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**72,070**	**SGA**	**$**	**3.75**	**$**	**270,210**
G40	**SITE ELECTRICAL UTILITIES**						
	Electrical Utility - Allowance	1	ls	$	75,000	$	75,000
	Tele/Data Utility - Allowance	1	ls	$	15,000	$	15,000
	Site Lighting LED (Branch and Pole Bases) - Allowance	1	ls	$	30,000	$	30,000
	Site Power - Allowance	1	ls	$	15,000	$	15,000
	Site Cameras (Rough-in) - Allowance	1	ls	$	7,500	$	7,500
	Site Cameras (Install) - Allowance	1	ls	$	30,000	$	30,000
	Car Charger - Allowance	1	ls	$	15,000	$	15,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**72,070**	**SGA**	**$**	**2.60**	**$**	**187,500**
G50	**OTHER SITE CONSTRUCTION**						
	Service Tunnels - Allowance						
	Utilidor Tunnel extended to beyond site footprint for future buildir	25	lf	$	4,500	$	112,500
	Utilidor Tunnel - Excavation Allowance	1	ls	$	20,000	$	20,000
	Landscaping Repair - Allowance	1	ls	$	5,000	$	5,000
	SUBTOTAL OTHER SITE CONSTRUCTION	**72,070**	**SGA**	**$**	**1.91**	**$**	**137,500**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**72,070**	**SGA**	**$ -**	**$ -**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	73,800
Project Start Date:	Q1, 2026	**Site GSF:**	26,730
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	73,800	BGSF	$ 16.44	$ 1,213,140
A20	Basement Construction	73,800	BGSF	$ -	$ -
B10	Superstructure	73,800	BGSF	$ 69.85	$ 5,154,900
B20	Exterior Enclosure	73,800	BGSF	$ 55.35	$ 4,084,553
B30	Roofing	73,800	BGSF	$ 10.44	$ 770,639
C10	Interior Construction	73,800	BGSF	$ 67.11	$ 4,952,962
C20	Stairs	73,800	BGSF	$ 2.91	$ 215,000
C30	Interior Finishes	73,800	BGSF	$ 44.79	$ 3,305,300
D10	Conveying Systems	73,800	BGSF	$ 3.05	$ 225,000
D20	Plumbing	73,800	BGSF	$ 27.15	$ 2,003,314
D30	HVAC	73,800	BGSF	$ 83.35	$ 6,151,402
D40	Fire Protection	73,800	BGSF	$ 5.52	$ 407,060
D50	Electrical	73,800	BGSF	$ 75.47	$ 5,569,718
E10	Equipment	73,800	BGSF	$ 0.61	$ 45,000
E20	Casework & Furnishings	73,800	BGSF	$ 10.58	$ 780,600
F10	Special Construction	73,800	BGSF	$ -	$ -
F20	Selective Demolition	73,800	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 34,878,588**
	Design Contingency			20.00%	$ 6,975,718
	Subtotal				$ 41,854,306
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 2,511,258
	Subtotal				$ 44,365,564
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**73,800**	**BGSF**	**$ 601.16**	**$ 44,365,564**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
A10	**FOUNDATIONS**				
	Foundation Earthwork				
	Footing Excavation and Backfill (Native Soil)	4,456	cy	$ 45.00	$ 200,520
	Footing Drains with Gravel	620	lf	$ 35.00	$ 21,700
	Foundations				
	Spread Footings (includes reinforcing)	214	cy	$ 900.00	$ 192,600
	Continuous Footings (includes reinforcing)	101	cy	$ 800.00	$ 80,800
	Brace Frame Footings (includes reinforcing)	212	cy	$ 750.00	$ 159,000
	Perimeter Stem Wall (includes reinforcing)	30	cy	$ 2,660.00	$ 79,800
	Reinforce Existing Foundations / Drills & Epoxy - Allowance	90	lf	$ 350.00	$ 31,500
	Slab-on-Grade				
	Slab on Grade (includes reinforcing, base course and vapor barrier)	24,600	sf	$ 11.50	$ 282,900
	Slab on Grade (includes reinforcing, base course and vapor barrier) - Transition to Phase 1 Allowance	1	ls	$ 15,000.00	$ 15,000
	Misc. Concrete				
	Roof Conc. Mechanical House Keeping Pads	1,000	sf	$ 25.00	$ 25,000
	Mechanical and Electrical Conc. House Keeping Pads	1,500	sf	$ 25.00	$ 37,500
	Elevator Pits (includes ladder, hoist beam, sump & waterproofing	1	ea	$ 30,000.00	$ 30,000
	Set Column Anchor Bolts	52	set	$ 350.00	$ 18,200
	Grout Baseplates	52	ea	$ 75.00	$ 3,900
	Perimeter Insulation / Waterproofing				
	2" Rigid Polystyrene	2,480	sf	$ 4.00	$ 9,920
	Stem Wall Dampproofing	2,480	sf	$ 10.00	$ 24,800
	SUBTOTAL FOUNDATIONS	**73,800**	**BGSF**	**$ 16.44**	**$ 1,213,140**
A20	**BASEMENT CONSTRUCTION**				
	Basement Construction				
	SUBTOTAL BASEMENT CONSTRUCTION	**73,800**	**BGSF**	**$ -**	**$ -**
B10	**SUPERSTRUCTURE**				
	CIP Structural Concrete				
	Horizontal Structure				
	Topping Slabs				
	4.5" Avg. Slab with Reinforcing	49,200	sf	7.50	$ 369,000
	Structural Steel				
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)				
	Structural Framing (12 psf Allowance for Roof)	295,200	lbs	$ 3.50	$ 1,033,200
	Structural Framing (15 psf Allowance for Floors)	738,000	lbs	$ 3.50	$ 2,583,000
	Metal Decking				
	Floor Decking - 3"	49,200	sf	$ 9.50	$ 467,400
	Roof Decking - 3" 18GA	24,600	sf	$ 7.50	$ 184,500

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Metals						
	Allowance	73,800	gsf	$	1.00	$	73,800
	Building Canopies - Allowance	1,500	sf	$	50.00	$	75,000
	Fireproofing						
	Structural Steel Fireproofing						
	Sprayed Cementitious Fireproofing (Metal Deck Area)	73,800	sf	$	5.00	$	369,000
	Firestopping - See Interior Partitions						
	SUBTOTAL SUPERSTRUCTURE	**73,800**	**BGSF**	**$**	**69.85**	**$**	**5,154,900**
B20	**EXTERIOR ENCLOSURE**						
	Exterior Wall Construction						
	Exterior Wall Assembly - Allowance	27,523	sf	$	37.00	$	1,018,358
	Loadbearing CMU or Concrete Walls - In B10 Superstructure Above						
	Exterior Wall Finish						
	Masonry Veneer						
	Brick Veneer @ New Façade	29,610	sf	$	45.00	$	1,332,450
	Exterior Windows						
	Storefront / Windows, Standard Clear Anodized with Flashing	6,345	sf		110.00	$	697,950
	Curtain Wall, Standard Clear Anodized with Flashing	5,471	sf		150.00	$	820,620
	Exterior Doors						
	Storefront Entry Doors, Hardware, per leaf	4	ea		7,500.00	$	30,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	6	ea		4,200.00	$	25,200
	Push Button ADA Auto Operators (per entrance)	2	ea		10,000.00	$	20,000
	Premium for Electronic Hardware at Card Readers (Reader Devices included with Electrical)	8	ea		1,000.00	$	8,000
	Exterior Paint & Sealants						
	Masonry Water Repellants / Anti-Graffiti Coating	29,610	sf		2.50	$	74,025
	Paint to HM Doors and Frames	6	ea	$	175.00	$	1,050
	Exterior - Control Joints, Caulking and Joint Sealants	73,800	gsf	$	0.50	$	36,900
	Building Graphics						
	Allowance for Building Signage	1	ls	$	20,000.00	$	20,000
	SUBTOTAL EXTERIOR ENCLOSURE	**73,800**	**BGSF**	**$**	**55.35**	**$**	**4,084,553**
B30	**ROOFING**						
	Roof Coverings						
	Membrane Roofing System w/ Rigid Insulation	24,600	sf	$	24.00	$	590,400
	Membrane Roofing Lapping up Backside of Parapets	1,755	sf	$	18.00	$	31,590
	Flashing and Sheet Metal						
	Parapet Caps and Copings	585	lf	$	35.00	$	20,475
	Fascia	585	lf	$	30.00	$	17,550
	Miscellaneous Roof Flashing and Rough Carpentry	10%	on	$	621,990.00	$	62,199
	Downspouts	9	ea	$	450.00	$	4,050
	Conductor Heads	9	ea	$	375.00	$	3,375

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
	Roof Accessories				
	Walk Pads	2,500	sf	$ 8.00	$ 20,000
	Fall Protection Anchors	20	ea	$ 750.00	$ 15,000
	Access Ladders	1	ea	$ 3,500.00	$ 3,500
	Roof Hatches	1	ea	$ 2,500.00	$ 2,500
	SUBTOTAL ROOFING	**73,800**	**BGSF**	**$ 10.44**	**$ 770,639**
C10	**INTERIOR CONSTRUCTION**				
	Partitions				
	GWB Wall Partition - Allowance	82,656	sf	$ 18.00	$ 1,487,808
	Glass Wall Partitions - Allowance	35,424	sf	$ 50.00	$ 1,771,200
	Fire Caulking at Penetrations	73,800	gsf	$ 0.35	$ 25,830
	Interior - Caulking and Joint Sealants	73,800	gsf	$ 0.30	$ 22,140
	Miscellaneous Carpentry - Allowance	73,800	gsf	$ 1.00	$ 73,800
	Concrete & CMU Walls - See B10 Superstructure Above				
	Interior Glazing				
	Interior Storefront with 1/4" tempered glazing	8,266	sf	$ 65.00	$ 537,264
	HM Sidelights/Relites with 1/4" tempered glazing	880	sf	$ 35.00	$ 30,800
	Interior Doors, Frames, Hardware				
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	174	ea	$ 4,200.00	$ 730,800
	Premium for Relite Frame - per leaf	55	ea	$ 400.00	$ 22,000
	Aluminum Storefront Doors, HW, Complete - per leaf	12	ea	$ 7,500.00	$ 90,000
	Access Doors and Panels	73,800	gsf	$ 0.15	$ 11,070
	Interior Railings				
	Sloping Stair Rails and Grabs - Included with Stairs Below				
	Fittings / Specialties				
	Visual Display Specialties				
	Visual Display Specialties / Mark Boards - Allowance	1	ls	$ 20,000.00	$ 20,000
	Signage (Code and Wayfinding)	73,800	gsf	$ 0.75	$ 55,350
	Toilet Compartments (Metal) (Stainless Steel) (Solid Polymer) (P-Lam) (Phenolic)				
	Small Multi-user Restrooms (Incl. Toilet Partitions)	6	ea	$ 4,500.00	$ 27,000
	Large Multi-user Restrooms (Incl. Toilet Partitions)	2	ea	$ 5,500.00	$ 11,000
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	73,800	gsf	$ 0.50	$ 36,900
	SUBTOTAL INTERIOR CONSTRUCTION	**73,800**	**BGSF**	**$ 67.11**	**$ 4,952,962**
C20	**STAIRS**				
	Stair Construction (includes concrete, finishes and guard/hand rails)				
	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	4	ea	$ 35,000.00	$ 140,000
	Feature Stair	1	ea	$ 75,000.00	$ 75,000
	SUBTOTAL STAIRS	**73,800**	**BGSF**	**$ 2.91**	**$ 215,000**

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
C30	**INTERIOR FINISHES**				
	Wall Finishes				
	Paint to Walls, Doors, Frames and Miscellaneous	73,800	gsf	$ 5.00	$ 369,000
	Restroom Wall Tile	1,500	sf	$ 30.00	$ 45,000
	Lobby Entrance Wall Finishes (TBD) - Allowance	1	ls	$ 30,000.00	$ 30,000
	Wood Wall Panels - Allowance	73,800	gsf	$ 6.00	$ 442,800
	Vinyl Wallcovering (TBD) - Allowance	73,800	gsf	$ 3.00	$ 221,400
	Fiberglass Reinforced Panel - Allowance	1	ls	$ 20,000.00	$ 20,000
	Miscellaneous Finish Carpentry Allowance	73,800	gsf	$ 1.50	$ 110,700
	Bases				
	Floor Base (TBD) - Allowance	73,800	gsf	$ 3.00	$ 221,400
	Floor Finishes				
	Floor Finishes (Carpet, Sealed Concrete, VCT, LVT & Ceramic Tile) - Allowance	73,800	sf	$ 10.50	$ 774,900
	Floor Prep & Protection	73,800	sf	$ 1.00	$ 73,800
	Ceiling Finishes				
	Ceiling Finishes (ACT, GWB - Painted & Exposed Ceiling - Painted) - Allowance	73,800	gsf	$ 5.00	$ 369,000
	Acoustic Wood Panels Ceiling - Allowance	73,800	gsf	$ 8.50	$ 627,300
	SUBTOTAL INTERIOR FINISHES	**73,800**	**BGSF**	**$ 44.79**	**$ 3,305,300**
D10	**CONVEYING SYSTEMS**				
	Elevators & Lifts				
	Hydraulic Elevator (3) Stops	3	ea	$ 75,000.00	$ 225,000
	SUBTOTAL CONVEYING SYSTEMS	**73,800**	**BGSF**	**$ 3.05**	**$ 225,000**
D20	**PLUMBING**				
	Plumbing				
	Plumbing - High Performance (per MW Engineers)	73,800	gsf	$ 27.15	$ 2,003,314
	SUBTOTAL PLUMBING	**73,800**	**BGSF**	**$ 27.15**	**$ 2,003,314**
D30	**HVAC**				
	HVAC				
	HVAC - High Performance (per MW Engineers)	73,800	gsf	$ 83.35	$ 6,151,402
	SUBTOTAL HVAC	**73,800**	**BGSF**	**$ 83.35**	**$ 6,151,402**
D40	**FIRE PROTECTION**				
	Fire Protection				
	Fire Protection - High Performance (per MW Engineers)	73,800	gsf	$ 5.52	$ 407,060
	SUBTOTAL FIRE PROTECTION	**73,800**	**BGSF**	**$ 5.52**	**$ 407,060**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D50	**ELECTRICAL**						
	Electrical - High Performance (per MW Engineers)						
	Power	73,800	gsf	$	36.24	$	2,674,527
	Lighting & Controls	73,800	gsf	$	16.09	$	1,187,449
	Telecom, AV	73,800	gsf	$	18.95	$	1,398,518
	FA, Sec	73,800	gsf	$	4.19	$	309,223
	SUBTOTAL ELECTRICAL	**73,800**	**BGSF**	**$**	**75.47**	**$**	**5,569,718**
E10	**EQUIPMENT**						
	Residential Equipment						
	Residential Equipment - Allowance	1	ls	$	20,000.00	$	20,000
	Projection Screen Equipment						
	Projection Screen Equipment Ceiling Recessed - Allowance	1	ls	$	25,000.00	$	25,000
	SUBTOTAL EQUIPMENT	**73,800**	**BGSF**	**$**	**0.61**	**$**	**45,000**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	73,800	gsf	$	8.50	$	627,300
	Window Treatment						
	Blackout Shades - Sidelites/Relites	880	sf	$	30.00	$	26,400
	Roller Shades	6,345	sf	$	20.00	$	126,900
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**73,800**	**BGSF**	**$**	**10.58**	**$**	**780,600**
F10	**SPECIAL CONSTRUCTION**						
	Special Construction						
	SUBTOTAL SPECIAL CONSTRUCTION	**73,800**	**BGSF**	**$**	**-**	**$**	**-**
F20	**SELECTIVE BUILDING DEMOLITION**						
	Selective Building Demolition						
	Hazardous Components Abatement						
	None						
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**73,800**	**BGSF**	**$**	**-**	**$**	**-**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**73,800**	**BGSF**	**$ -**	**$ -**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	73,800
Project Start Date:	Q1, 2026	**Site GSF:**	26,730
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY							
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**		**Total Estimated Cost**	
G10	Site Preparation	26,730	SGA	$	7.74	$	206,949
G20	Site Improvements	26,730	SGA	$	5.75	$	153,698
G30	Site Civil / Mech Utilities	26,730	SGA	$	3.50	$	93,555
G40	Site Electrical Utilities	26,730	SGA	$	3.09	$	82,500
G50	Other Site Construction	26,730	SGA	$	-	$	-
SITEWORK SUBTOTAL						**$**	**536,702**
	Design Contingency				20.00%	$	107,340
	Subtotal					$	644,042
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)				6.00%	$	38,643
	Subtotal					$	682,684
	Escalation to Mid-Point (See Summary)					$	-
SITE GRAND TOTAL		**26,730**	**SGA**	**$**	**25.54**	**$**	**682,684**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G10	**SITE PREPARATION**						
	General Sitework Requirements						
	Mobilization	1	ls	$	25,000.00	$	25,000
	Site Layout & Potholing	1	ls	$	2,500.00	$	2,500
	Traffic Control (for entire project)	4	weeks	$	6,500.00	$	26,000
	Site Improvements Demolition & Relocation						
	Selective Site Demo & Protection of Site Items - Allowance	26,730	sf	$	0.25	$	6,683
	Demo Utilities						
	Piping (water), Piping (sewer, storm, etc.), Structures (manhole, catch basin, hydrant), Cap Utiilities (abandon pipe in place)	26,730	sf	$	0.75	$	20,048
	Misc. Site Clearing	26,730	sf	$	0.15	$	4,010
	Site Earthwork						
	Temporary Construction Fencing	600	lf	$	12.00	$	7,200
	TESC Erosion Control - Filter Fabric Fence, Catch Basin Inlet Protection, & Stabilized Construction Entry	1	ls	$	12,500	$	12,500
	Tree Protection Fencing	1	ls	$	3,500	$	3,500
	Contractor Access and Laydown Area	1,500	sf	$	2.00	$	3,000
	Clear and Grub	26,730	sf	$	0.15	$	4,010
	Excavation						
	Native Cut / Fill - Allowance	500	cy	$	35.00	$	17,500
	Export Unsuitable - Allowance	500	cy	$	75.00	$	37,500
	Imported Fill - Allowance	500	cy	$	55.00	$	27,500
	Dewatering - Allowance	1	ls	$	10,000.00	$	10,000
	Foundation Earthwork						
	Footing Excavation and Backfill	In Building Section A10					
	Footing Drains with Gravel	In Building Section A10					
	Hazardous Waste Remediation						
	None Included						
	SUBTOTAL SITE PREPARATON	**26,730**	**SGA**	**$**	**7.74**	**$**	**206,949**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving & Concrete Site Work (Base Courses Included)						
	Concrete Curbs, Concrete Paving and Walkways - Allowance	26,730	sf	$	2.00	$	53,460
	Site Development						
	Concrete Retaining Walls, Seat Walls, Fencing, Bike Rack and Flag Pole - Allowance	26,730	sf	$	0.75	$	20,048
	Landscaping/Irrigation						
	Irrigation - General Landscaping - Allowance	26,730	sf	$	0.50	$	13,365
	Planter Shrubs and Ground Cover - Allowance	26,730	sf	$	2.50	$	66,825
	SUBTOTAL SITE IMPROVEMENTS	**26,730**	**SGA**	**$**	**5.75**	**$**	**153,698**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Water Service Utilities (Incl. Tie-in to Existing, Water/Fire Line, Water Meter, Irrigation Meter, Valve, Domestic Water, Fire Department Connection & Existing Street Surface Repair/Traffic Control) - Allowance	26,730	sga	$	1.25	$	33,413
	Sanitary Sewer Systems						
	Sanitary Sewer Systems (Incl. Tie-in to Existing, Sewer Line, Cleanouts, Manhole, Septic System & Drain Field and Associated System & Existing Street Surface Repair/Traffic Control) - Allowance	26,730	sga	$	0.75	$	20,048
	Storm Drainage						
	Storm Drainage (Incl. Tie-in to Existing, Drain Line, Cleanouts, Catch Basin, Bioretention & Existing Street Surface Repair/Traffic Control) - Allowance	26,730	sga	$	1.50	$	40,095
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**26,730**	**SGA**	**$**	**3.50**	**$**	**93,555**
G40	**SITE ELECTRICAL UTILITIES**						
	Electrical Utility - Allowance	1	ls	$	35,000	$	35,000
	Tele/Data Utility - Allowance	1	ls	$	5,000	$	5,000
	Site Lighting LED (Branch and Pole Bases) - Allowance	1	ls	$	15,000	$	15,000
	Site Power - Allowance	1	ls	$	7,500	$	7,500
	Site Cameras (Rough-in) - Allowance	1	ls	$	5,000	$	5,000
	Site Cameras (Install) - Allowance	1	ls	$	15,000	$	15,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**26,730**	**SGA**	**$**	**3.09**	**$**	**82,500**
G50	**OTHER SITE CONSTRUCTION**						
	Other Site Construction						
	SUBTOTAL OTHER SITE CONSTRUCTION	**26,730**	**SGA**	**$**	**-**	**$**	**-**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**26,730**	**SGA**	**$**	**-**	**$**	**-**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	71,478
Project Start Date:	Q3, 2027	**Site GSF:**	43,740
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	71,478	BGSF	$ 21.10	$ 1,508,137
A20	Basement Construction	71,478	BGSF	$ -	$ -
B10	Superstructure	71,478	BGSF	$ 62.88	$ 4,494,742
B20	Exterior Enclosure	71,478	BGSF	$ 64.59	$ 4,616,977
B30	Roofing	71,478	BGSF	$ 10.74	$ 767,624
C10	Interior Construction	71,478	BGSF	$ 68.86	$ 4,921,975
C20	Stairs	71,478	BGSF	$ 1.96	$ 140,000
C30	Interior Finishes	71,478	BGSF	$ 44.51	$ 3,181,807
D10	Conveying Systems	71,478	BGSF	$ 3.15	$ 225,000
D20	Plumbing	71,478	BGSF	$ 31.43	$ 2,246,631
D30	HVAC	71,478	BGSF	$ 100.90	$ 7,212,100
D40	Fire Protection	71,478	BGSF	$ 6.39	$ 456,500
D50	Electrical	71,478	BGSF	$ 80.48	$ 5,752,498
E10	Equipment	71,478	BGSF	$ 0.63	$ 45,000
E20	Casework & Furnishings	71,478	BGSF	$ 11.70	$ 836,163
F10	Special Construction	71,478	BGSF	$ 11.59	$ 828,750
F20	Selective Demolition	71,478	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 37,233,904**
	Design Contingency			20.00%	$ 7,446,781
	Subtotal				$ 44,680,685
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 2,680,841
	Subtotal				$ 47,361,526
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**71,478**	**BGSF**	**$ 662.60**	**$ 47,361,526**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
A10	**FOUNDATIONS**				
	Foundation Earthwork				
	Footing Excavation and Backfill (Native Soil)	5,989	cy	$ 45.00	$ 269,500
	Footing Drains with Gravel	870	lf	$ 35.00	$ 30,450
	Foundations				
	Spread Footings (includes reinforcing)	313	cy	$ 900.00	$ 282,000
	Continuous Footings (includes reinforcing)	145	cy	$ 800.00	$ 116,000
	Brace Frame Footings (includes reinforcing)	250	cy	$ 750.00	$ 187,500
	Perimeter Stem Wall (includes reinforcing)	40	cy	$ 2,650.00	$ 106,736
	Reinforce Existing Foundations / Drills & Epoxy - Allowance	150	lf	$ 350.00	$ 52,500
	Slab-on-Grade				
	Slab on Grade (includes reinforcing, base course and vapor barrier)	23,826	sf	$ 11.50	$ 274,000
	Slab on Grade (includes reinforcing, base course and vapor barrier) - Transition to Phase 2 Allowance	1	ls	$ 25,000.00	$ 25,000
	Misc. Concrete				
	Roof Conc. Mechanical House Keeping Pads	1,000	sf	$ 25.00	$ 25,000
	Mechanical and Electrical Conc. House Keeping Pads	1,500	sf	$ 25.00	$ 37,500
	Elevator Pits (includes ladder, hoist beam, sump & waterproofin	1	ea	$ 30,000.00	$ 30,000
	Set Column Anchor Bolts	60	set	$ 340.00	$ 20,252
	Grout Baseplates	60	ea	$ 50.00	$ 2,978
	Perimeter Insulation / Waterproofing				
	2" Rigid Polystyrene	3,480	sf	$ 4.00	$ 13,920
	Stem Wall Dampproofing	3,480	sf	$ 10.00	$ 34,800
	SUBTOTAL FOUNDATIONS	**71,478**	**BGSF**	**$ 21.10**	**$ 1,508,137**
A20	**BASEMENT CONSTRUCTION**				
	Basement Construction				
	SUBTOTAL BASEMENT CONSTRUCTION	**71,478**	**BGSF**	**$ -**	**$ -**
B10	**SUPERSTRUCTURE**				
	CIP Structural Concrete				
	Horizontal Structure				
	Topping Slabs				
	4.5" Avg. Slab with Reinforcing	47,652	sf	$ 7.50	$ 357,392
	Structural Steel				
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)				
	Structural Framing (12 psf Allowance for Floor & Roof)	857,740	lbs	$ 3.50	$ 3,002,089
	Metal Decking				
	Floor Decking - 3"	47,652	sf	$ 9.50	$ 452,696
	Roof Decking - 3" 18GA	23,826	sf	$ 7.50	$ 178,696

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Metals						
	Allowance	71,478	gsf	$	1.00	$	71,478
	Building Canopies - Allowance	1,500	sf	$	50.00	$	75,000
	Fireproofing						
	Structural Steel Fireproofing						
	Sprayed Cementitious Fireproofing (Metal Deck Area)	71,478	sf	$	5.00	$	357,392
	Firestopping - See Interior Partitions						
	SUBTOTAL SUPERSTRUCTURE	**71,478**	**BGSF**	**$**	**62.88**	**$**	**4,494,742**
B20	**EXTERIOR ENCLOSURE**						
	Exterior Wall Construction						
	Exterior Wall Assembly - Allowance	36,886	sf	$	37.00	$	1,364,767
	Loadbearing CMU or Concrete Walls - In B10 Superstructure Above						
	Exterior Wall Finish						
	Masonry Veneer						
	Brick Veneer @ New Façade	24,713	sf	$	45.00	$	1,112,076
	Brick Veneer Repair & Repointing Allowance	12,173	sf	$	20.00	$	243,456
	Exterior Windows						
	Storefront / Windows, Standard Clear Anodized with Flashing	9,966	sf	$	110.00	$	1,096,247
	Curtain Wall, Standard Clear Anodized with Flashing	4,004	sf	$	150.00	$	600,660
	Exterior Doors						
	Storefront Entry Doors, Hardware, per leaf	4	ea	$	7,500.00	$	30,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	6	ea	$	4,200.00	$	25,200
	Push Button ADA Auto Operators (per entrance)	2	ea	$	10,000.00	$	20,000
	Premium for Electronic Hardware at Card Readers (Reader Devices included with Electrical)	6	ea	$	1,000.00	$	6,000
	Exterior Paint & Sealants						
	Masonry Water Repellants / Anti-Graffiti Coating	24,713	sf	$	2.50	$	61,782
	Paint to HM Doors and Frames	6	ea	$	175.00	$	1,050
	Exterior - Control Joints, Caulking and Joint Sealants	71,478	gsf	$	0.50	$	35,739
	Building Graphics						
	Allowance for Building Signage	1	ls	$	20,000.00	$	20,000
	SUBTOTAL EXTERIOR ENCLOSURE	**71,478**	**BGSF**	**$**	**64.59**	**$**	**4,616,977**
B30	**ROOFING**						
	Roof Coverings						
	Membrane Roofing System w/ Rigid Insulation	23,826	sf	$	24.00	$	571,827
	Membrane Roofing Lapping up Backside of Parapets	2,175	sf	$	18.00	$	39,150
	Flashing and Sheet Metal						
	Parapet Caps and Copings	725	lf	$	35.00	$	25,375
	Fascia	725	lf	$	30.00	$	21,750

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Roof Flashing and Rough Carpentry	10%	on	$	610,976.50	$	61,098
	Downspouts	9	ea	$	450.00	$	4,050
	Conductor Heads	9	ea	$	375.00	$	3,375
	Roof Accessories						
	Walk Pads	2,500	sf	$	8.00	$	20,000
	Fall Protection Anchors	20	ea	$	750.00	$	15,000
	Access Ladders	1	ea	$	3,500.00	$	3,500
	Roof Hatches	1	ea	$	2,500.00	$	2,500
	SUBTOTAL ROOFING	**71,478**	**BGSF**	**$**	**10.74**	**$**	**767,624**
C10	**INTERIOR CONSTRUCTION**						
	Partitions						
	GWB Wall Partition - Allowance	80,056	sf	$	18.00	$	1,441,003
	Glass Wall Partitions - Allowance	34,310	sf	$	50.00	$	1,715,480
	Fire Caulking at Penetrations	71,478	gsf	$	0.35	$	25,017
	Interior - Caulking and Joint Sealants	71,478	gsf	$	0.30	$	21,443
	Miscellaneous Carpentry - Allowance	43,740	gsf	$	1.00	$	43,740
	Concrete & CMU Walls - See B10 Superstructure Above						
	Interior Glazing						
	Interior Storefront with 1/4" tempered glazing	8,006	sf	$	65.00	$	520,362
	HM Sidelights/Relites with 1/4" tempered glazing	976	sf	$	35.00	$	34,160
	Interior Doors, Frames, Hardware						
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	204	ea	$	4,200.00	$	856,800
	Premium for Relite Frame - per leaf	61	ea	$	400.00	$	24,400
	Aluminum Storefront Doors, HW, Complete - per leaf	12	ea		7,500.00	$	90,000
	Access Doors and Panels	71,478	gsf	$	0.15	$	10,722
	Interior Railings						
	Sloping Stair Rails and Grabs - Included with Stairs Below						
	Fittings / Specialties						
	Visual Display Specialties						
	Visual Display Specialties / Mark Boards - Allowance	1	ls	$	25,000.00	$	25,000
	Signage (Code and Wayfinding)	71,478	gsf	$	0.75	$	53,609
	Toilet Compartments (Metal) (Stainless Steel) (Solid Polymer) (P-Lam) (Phenolic)						
	Small Multi-user Restrooms (Incl. Toilet Partitions)	3	ea	$	4,500.00	$	13,500
	Large Multi-user Restrooms (Incl. Toilet Partitions)	2	ea	$	5,500.00	$	11,000
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	71,478	gsf	$	0.50	$	35,739
	SUBTOTAL INTERIOR CONSTRUCTION	**71,478**	**BGSF**	**$**	**68.86**	**$**	**4,921,975**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
C20	**STAIRS**						
	Stair Construction (includes concrete, finishes and guard/hand rails)						
	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	4	ea	$	35,000.00	$	140,000
	SUBTOTAL STAIRS	**71,478**	**BGSF**	**$**	**1.96**	**$**	**140,000**
C30	**INTERIOR FINISHES**						
	Wall Finishes						
	Paint to Walls, Doors, Frames and Miscellaneous	71,478	gsf	$	5.00	$	357,392
	Restroom Wall Tile	750	sf	$	30.00	$	22,500
	Lobby Entrance Wall Finishes (TBD) - Allowance	1	ls	$	30,000.00	$	30,000
	Wood Wall Panels - Allowance	71,478	gsf	$	6.00	$	428,870
	Vinyl Wallcovering (TBD) - Allowance	71,478	gsf	$	3.00	$	214,435
	Fiberglass Reinforced Panel - Allowance	1	ls	$	20,000.00	$	20,000
	Miscellaneous Finish Carpentry Allowance	71,478	gsf	$	1.50	$	107,217
	Bases						
	Floor Base (TBD) - Allowance	71,478	gsf	$	3.00	$	214,435
	Floor Finishes						
	Floor Finishes (Carpet, Sealed Concrete, VCT, LVT & Ceramic Tile) - Allowance	71,478	gsf	$	10.50	$	750,522
	Floor Prep & Protection	71,478	gsf	$	1.00	$	71,478
	Ceiling Finishes						
	Ceiling Finishes (ACT, GWB - Painted & Exposed Ceiling - Painted) - Allowance	71,478	gsf	$	5.00	$	357,392
	Acoustic Wood Panels Ceiling - Allowance	71,478	gsf	$	8.50	$	607,566
	SUBTOTAL INTERIOR FINISHES	**71,478**	**BGSF**	**$**	**44.51**	**$**	**3,181,807**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	Hydraulic Elevator (3) Stops	3	ea	$	75,000.00	$	225,000
	SUBTOTAL CONVEYING SYSTEMS	**71,478**	**BGSF**	**$**	**3.15**	**$**	**225,000**
D20	**PLUMBING**						
	Plumbing						
	Plumbing - High Performance (per MW Engineers)	71,478	gsf	$	31.43	$	2,246,631
	SUBTOTAL PLUMBING	**71,478**	**BGSF**	**$**	**31.43**	**$**	**2,246,631**
D30	**HVAC**						
	HVAC						
	HVAC - High Performance (per MW Engineers)	71,478	gsf	$	100.90	$	7,212,100
	SUBTOTAL HVAC	**71,478**	**BGSF**	**$**	**100.90**	**$**	**7,212,100**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D40	**FIRE PROTECTION**						
	Fire Protection						
	Fire Protection - High Performance (per MW Engineers)	71,478	gsf	$	6.39	$	456,500
	SUBTOTAL FIRE PROTECTION	**71,478**	**BGSF**	**$**	**6.39**	**$**	**456,500**
D50	**ELECTRICAL**						
	Electrical - High Performance (per MW Engineers)						
	Power	71,478	gsf	$	39.24	$	2,804,797
	Lighting & Controls	71,478	gsf	$	16.09	$	1,150,081
	Telecom, AV	71,478	gsf	$	18.95	$	1,354,508
	FA, Sec	71,478	gsf	$	4.69	$	335,232
	Solar PV Array	1	ls	$	107,880	$	107,880
	SUBTOTAL ELECTRICAL	**71,478**	**BGSF**	**$**	**80.48**	**$**	**5,752,498**
E10	**EQUIPMENT**						
	Residential Equipment						
	Residential Equipment - Allowance	1	ls	$	20,000.00	$	20,000
	Projection Screen Equipment						
	Projection Screen Equipment Ceiling Recessed - Allowance	1	ls	$	25,000.00	$	25,000
	SUBTOTAL EQUIPMENT	**71,478**	**BGSF**	**$**	**0.63**	**$**	**45,000**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	71,478	gsf	$	8.50	$	607,566
	Window Treatment						
	Blackout Shades - Sidelites/Relites	976	sf	$	30.00	$	29,280
	Roller Shades	9,966	sf	$	20.00	$	199,318
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**71,478**	**BGSF**	**$**	**11.70**	**$**	**836,163**
F10	**SPECIAL CONSTRUCTION**						
	Scaffolding - Target Value						
	Erect Scaffolding, Certify and Dismantle Scaffolding Incl. First Month Rent	1	ls	$	632,170.00	$	632,170
	Monthly Rental	7	mo	$	10,000.00	$	70,000
	Shrink Wrap Scaffolding - (ACM Stucco Removal)	1	ls	$	114,940.00	$	114,940
	Maintaining Scaffolding and Screening	120	hr	$	97.00	$	11,640
	SUBTOTAL SPECIAL CONSTRUCTION	**71,478**	**BGSF**	**$**	**11.59**	**$**	**828,750**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
F20	**SELECTIVE BUILDING DEMOLITION**				
	Selective Building Demolition				
	Hazardous Components Abatement				
	None				
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**71,478**	**BGSF**	**$ -**	**$ -**
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**71,478**	**BGSF**	**$ -**	**$ -**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	71,478
Project Start Date:	Q3, 2027	**Site GSF:**	43,740
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	43,740	SGA	$ 6.76	$ 295,497
G20	Site Improvements	43,740	SGA	$ 6.75	$ 295,245
G30	Site Civil / Mech Utilities	43,740	SGA	$ 3.50	$ 153,090
G40	Site Electrical Utilities	43,740	SGA	$ 9.60	$ 420,000
G50	Other Site Construction	43,740	SGA	$ 3.14	$ 137,500
SITEWORK SUBTOTAL					**$ 1,301,332**
	Design Contingency			20.00%	$ 260,266
	Subtotal				$ 1,561,598
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 93,696
	Subtotal				$ 1,655,294
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**43,740**	**SGA**	**$ 37.84**	**$ 1,655,294**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G10	**SITE PREPARATION**						
	General Sitework Requirements						
	Mobilization	1	ls	$	30,000.00	$	30,000
	Site Layout & Potholing	1	ls	$	5,000.00	$	5,000
	Traffic Control (for entire project)	6	weeks	$	6,500.00	$	39,000
	Site Improvements Demolition & Relocation						
	Selective Site Demo & Protection of Site Items - Allowance	43,740	sf	$	0.35	$	15,309
	Demo Utilities						
	Piping (water), Piping (sewer, storm, etc.), Structures (manhole, catch basin, hydrant), Cap Utiilities (abandon pipe in place)	43,740	sf	$	0.75	$	32,805
	Misc. Site Clearing	43,740	sf	$	0.25	$	10,935
	Site Earthwork						
	Temporary Construction Fencing	600	lf	$	12.00	$	7,200
	TESC Erosion Control - Filter Fabric Fence, Catch Basin Inlet Protection, & Stabilized Construction Entry	1	ls	$	12,500	$	12,500
	Tree Protection Fencing	1	ls	$	3,500	$	3,500
	Contractor Access and Laydown Area	1,500	sf	$	2.00	$	3,000
	Clear and Grub	43,740	sf	$	0.20	$	8,748
	Excavation						
	Native Cut / Fill - Allowance	1,500	cy	$	35.00	$	52,500
	Export Unsuitable - Allowance	500	cy	$	75.00	$	37,500
	Imported Fill - Allowance	500	cy	$	55.00	$	27,500
	Dewatering - Allowance	1	ls	$	10,000.00	$	10,000
	Foundation Earthwork						
	Footing Excavation and Backfill	In Building Section A10					
	Footing Drains with Gravel	In Building Section A10					
	Hazardous Waste Remediation						
	None Included						
	SUBTOTAL SITE PREPARATON	**43,740**	**SGA**	**$**	**6.76**	**$**	**295,497**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving & Concrete Site Work (Base Courses Included)						
	Heavy Duty & Light Duty (HMA over Crushed Rock), Concrete Curbs, Concrete Paving and Walkways, and Pavement Markings - Allowance	43,740	sf	$	3.00	$	131,220
	Site Development						
	Concrete Retaining Walls, Seat Walls, Fencing, Bike Rack and Flag Pole - Allowance	43,740	sf	$	0.75	$	32,805

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Landscaping/Irrigation						
	Irrigation - General Landscaping - Allowance	43,740	sf	$	0.50	$	21,870
	Planter Shrubs and Ground Cover - Allowance	43,740	sf	$	2.50	$	109,350
	SUBTOTAL SITE IMPROVEMENTS	**43,740**	**SGA**	**$**	**6.75**	**$**	**295,245**
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Water Service Utilities (Incl. Tie-in to Existing, Water/Fire Line, Water Meter, Irrigation Meter, Valve, Domestic Water, Fire Department Connection & Existing Street Surface Repair/Traffic Control) - Allowance	43,740	sga	$	1.25	$	54,675
	Sanitary Sewer Systems						
	Sanitary Sewer Systems (Incl. Tie-in to Existing, Sewer Line, Cleanouts, Manhole, Septic System & Drain Field and Associated System & Existing Street Surface Repair/Traffic Control) - Allowance	43,740	sga	$	0.75	$	32,805
	Storm Drainage						
	Storm Drainage (Incl. Tie-in to Existing, Drain Line, Cleanouts, Catch Basin, Bioretention & Existing Street Surface Repair/Traffic Control) - Allowance	43,740	sga	$	1.50	$	65,610
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**43,740**	**SGA**	**$**	**3.50**	**$**	**153,090**
G40	**SITE ELECTRICAL UTILITIES**						
	Site Electrical Utilities - High Performance (per MW Engineers)						
	Site Utilities	1	ls	$	350,000	$	350,000
	Site Lighting	1	ls	$	70,000	$	70,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**43,740**	**SGA**	**$**	**9.60**	**$**	**420,000**
G50	**OTHER SITE CONSTRUCTION**						
	Service Tunnels - Allowance						
	Utilidor Tunnel extended to beyond site footprint for future buildir	25	lf	$	4,500	$	112,500
	Utilidor Tunnel - Excavation Allowance	1	ls	$	20,000	$	20,000
	Landscaping Repair - Allowance	1	ls	$	5,000	$	5,000
	SUBTOTAL OTHER SITE CONSTRUCTION	**43,740**	**SGA**	**$**	**3.14**	**$**	**137,500**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**43,740**	**SGA**	**$**	**-**	**$**	**-**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	52,897
Project Start Date:	Q3, 2027	**Site GSF:**	55,060
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	52,897	BGSF	$ 21.81	$ 1,153,504
A20	Basement Construction	52,897	BGSF	$ -	$ -
B10	Superstructure	52,897	BGSF	$ 62.78	$ 3,320,779
B20	Exterior Enclosure	52,897	BGSF	$ 74.16	$ 3,923,050
B30	Roofing	52,897	BGSF	$ 10.74	$ 568,314
C10	Interior Construction	52,897	BGSF	$ 70.30	$ 3,718,501
C20	Stairs	52,897	BGSF	$ 4.06	$ 215,000
C30	Interior Finishes	52,897	BGSF	$ 45.30	$ 2,396,006
D10	Conveying Systems	52,897	BGSF	$ 4.25	$ 225,000
D20	Plumbing	52,897	BGSF	$ 27.15	$ 1,435,890
D30	HVAC	52,897	BGSF	$ 83.35	$ 4,409,062
D40	Fire Protection	52,897	BGSF	$ 5.52	$ 291,763
D50	Electrical	52,897	BGSF	$ 76.95	$ 4,070,256
E10	Equipment	52,897	BGSF	$ 0.66	$ 35,000
E20	Casework & Furnishings	52,897	BGSF	$ 11.84	$ 626,425
F10	Special Construction	52,897	BGSF	$ 11.54	$ 610,650
F20	Selective Demolition	52,897	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 26,999,198**
	Design Contingency			20.00%	$ 5,399,840
	Subtotal				$ 32,399,038
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 1,943,942
	Subtotal				$ 34,342,980
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**52,897**	**BGSF**	**$ 649.25**	**$ 34,342,980**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**						
	Foundation Earthwork						
	Footing Excavation and Backfill (Native Soil)	4,443	cy	$	45.00	$	199,940
	Footing Drains with Gravel	714	lf	$	35.00	$	24,990
	Foundations						
	Spread Footings (includes reinforcing)	253	cy	$	900.00	$	228,000
	Continuous Footings (includes reinforcing)	119	cy	$	800.00	$	95,200
	Brace Frame Footings (includes reinforcing)	150	cy	$	750.00	$	112,500
	Perimeter Stem Wall (includes reinforcing)	33	cy	$	2,660.00	$	87,928
	Reinforce Existing Foundations / Drills & Epoxy - Allowance	150	lf	$	350.00	$	52,500
	Slab-on-Grade						
	Slab on Grade (includes reinforcing, base course and vapor barrier)	17,632	sf	$	11.50	$	202,771
	Slab on Grade (includes reinforcing, base course and vapor barrier) - Transition to Phase 1 Allowance	1	ls	$	25,000.00	$	25,000
	Misc. Concrete						
	Roof Conc. Mechanical House Keeping Pads	500	sf	$	25.00	$	12,500
	Mechanical and Electrical Conc. House Keeping Pads	1,000	sf	$	25.00	$	25,000
	Elevator Pits (includes ladder, hoist beam, sump & waterproofing	1	ea	$	30,000.00	$	30,000
	Set Column Anchor Bolts	44	set	$	340.00	$	14,987
	Grout Baseplates	44	ea	$	50.00	$	2,204
	Perimeter Insulation / Waterproofing						
	2" Rigid Polystyrene	2,856	sf	$	4.00	$	11,424
	Stem Wall Dampproofing	2,856	sf	$	10.00	$	28,560
	SUBTOTAL FOUNDATIONS	**52,897**	**BGSF**	**$**	**21.81**	**$**	**1,153,504**
A20	**BASEMENT CONSTRUCTION**						
	Basement Construction						
	SUBTOTAL BASEMENT CONSTRUCTION	**52,897**	**BGSF**	**$**	**-**	**$**	**-**
B10	**SUPERSTRUCTURE**						
	CIP Structural Concrete						
	Horizontal Structure						
	Topping Slabs						
	4.5" Avg. Slab with Reinforcing	35,264	sf	$	7.50	$	264,483
	Structural Steel						
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)						
	Structural Framing (12 psf Allowance for Floor & Roof)	634,760	lbs	$	3.50	$	2,221,661
	Metal Decking						
	Floor Decking - 3"	35,264	sf	$	9.50	$	335,012
	Roof Decking - 3" 18GA	17,632	sf	$	7.50	$	132,242

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Metals						
	Allowance	52,897	gsf	$	1.00	$	52,897
	Building Canopies - Allowance	1,000	sf	$	50.00	$	50,000
	Fireproofing						
	Structural Steel Fireproofing						
	Sprayed Cementitious Fireproofing (Metal Deck Area)	52,897	sf	$	5.00	$	264,483
	Firestopping - See Interior Partitions						
	SUBTOTAL SUPERSTRUCTURE	**52,897**	**BGSF**	**$**	**62.78**	**$**	**3,320,779**
B20	**EXTERIOR ENCLOSURE**						
	Exterior Wall Construction						
	Exterior Wall Assembly - Allowance	25,493	sf	$	37.00	$	943,234
	Loadbearing CMU or Concrete Walls - In B10 Superstructure Above						
	Exterior Wall Finish						
	Masonry Veneer						
	Brick Veneer @ New Façade	16,051	sf	$	45.00	$	722,304
	Brick Veneer Repair & Repointing Allowance	5,606	sf	$	20.00	$	112,128
	Exterior Windows						
	Storefront / Windows, Standard Clear Anodized with Flashing	7,016	sf	$	110.00	$	771,778
	Curtain Wall, Standard Clear Anodized with Flashing	8,065	sf	$	150.00	$	1,209,780
	Exterior Doors						
	Storefront Entry Doors, Hardware, per leaf	4	ea	$	7,500.00	$	30,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	6	ea	$	4,200.00	$	25,200
	Push Button ADA Auto Operators (per entrance)	2	ea	$	10,000.00	$	20,000
	Premium for Electronic Hardware at Card Readers (Reader Devices included with Electrical)	6	ea	$	1,000.00	$	6,000
	Exterior Paint & Sealants						
	Masonry Water Repellants / Anti-Graffiti Coating	16,051	sf	$	2.50	$	40,128
	Paint to HM Doors and Frames	6	ea	$	175.00	$	1,050
	Exterior - Control Joints, Caulking and Joint Sealants	52,897	gsf	$	0.50	$	26,448
	Building Graphics						
	Allowance for Building Signage	1	ls	$	15,000.00	$	15,000
	SUBTOTAL EXTERIOR ENCLOSURE	**52,897**	**BGSF**	**$**	**74.16**	**$**	**3,923,050**
B30	**ROOFING**						
	Roof Coverings						
	Membrane Roofing System w/ Rigid Insulation	17,632	sf	$	24.00	$	423,174
	Membrane Roofing Lapping up Backside of Parapets	1,635	sf	$	18.00	$	29,430
	Flashing and Sheet Metal						
	Parapet Caps and Copings	545	lf	$	35.00	$	19,075
	Fascia	545	lf	$	30.00	$	16,350

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Roof Flashing and Rough Carpentry	10%	on	$	452,603.50	$	45,260
	Downspouts	7	ea	$	450.00	$	3,150
	Conductor Heads	7	ea	$	375.00	$	2,625
	Roof Accessories						
	Walk Pads	1,500	sf	$	8.00	$	12,000
	Fall Protection Anchors	15	ea	$	750.00	$	11,250
	Access Ladders	1	ea	$	3,500.00	$	3,500
	Roof Hatches	1	ea	$	2,500.00	$	2,500
	SUBTOTAL ROOFING	**52,897**	**BGSF**	**$**	**10.74**	**$**	**568,314**
C10	**INTERIOR CONSTRUCTION**						
	Partitions						
	GWB Wall Partition - Allowance	59,244	sf	$	18.00	$	1,066,397
	Glass Wall Partitions - Allowance	25,390	sf	$	50.00	$	1,269,521
	Fire Caulking at Penetrations	52,897	gsf	$	0.35	$	18,514
	Interior - Caulking and Joint Sealants	52,897	gsf	$	0.30	$	15,869
	Miscellaneous Carpentry - Allowance	52,897	gsf	$	1.00	$	52,897
	Concrete & CMU Walls - See B10 Superstructure Above						
	Interior Glazing						
	Interior Storefront with 1/4" tempered glazing	5,924	sf	$	65.00	$	385,088
	HM Sidelights/Relites with 1/4" tempered glazing	1,216	sf	$	35.00	$	42,560
	Interior Doors, Frames, Hardware						
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	151	ea	$	4,200.00	$	634,200
	Premium for Relite Frame - per leaf	76	ea	$	400.00	$	30,400
	Aluminum Storefront Doors, HW, Complete - per leaf	12	ea	$	7,500.00	$	90,000
	Access Doors and Panels	52,897	gsf	$	0.15	$	7,935
	Interior Railings						
	Sloping Stair Rails and Grabs - Included with Stairs Below						
	Fittings / Specialties						
	Visual Display Specialties						
	Visual Display Specialties / Mark Boards - Allowance	1	ls	$	20,000.00	$	20,000
	Signage (Code and Wayfinding)	52,897	gsf	$	0.75	$	39,673
	Toilet Compartments (Metal) (Stainless Steel) (Solid Polymer) (P-Lam) (Phenolic)						
	Small Multi-user Restrooms (Incl. Toilet Partitions)	3	ea	$	4,500.00	$	13,500
	Large Multi-user Restrooms (Incl. Toilet Partitions)	1	ea	$	5,500.00	$	5,500
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	52,897	gsf	$	0.50	$	26,448
	SUBTOTAL INTERIOR CONSTRUCTION	**52,897**	**BGSF**	**$**	**70.30**	**$**	**3,718,501**

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
C20	**STAIRS**				
	Stair Construction (includes concrete, finishes and guard/hand rails)				
	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	4	ea	$ 35,000.00	$ 140,000
	Feature Stair	1	ea	$ 75,000.00	$ 75,000
	SUBTOTAL STAIRS	**52,897**	**BGSF**	**$ 4.06**	**$ 215,000**
C30	**INTERIOR FINISHES**				
	Wall Finishes				
	Paint to Walls, Doors, Frames and Miscellaneous	52,897	gsf	$ 5.00	$ 264,483
	Restroom Wall Tile	1,500	sf	$ 30.00	$ 45,000
	Lobby Entrance Wall Finishes (TBD) - Allowance	1	ls	$ 30,000.00	$ 30,000
	Wood Wall Panels - Allowance	52,897	gsf	$ 6.00	$ 317,380
	Vinyl Wallcovering (TBD) - Allowance	52,897	gsf	$ 3.00	$ 158,690
	Fiberglass Reinforced Panel - Allowance	1	ls	$ 20,000.00	$ 20,000
	Miscellaneous Finish Carpentry Allowance	52,897	gsf	$ 1.50	$ 79,345
	Bases				
	Floor Base (TBD) - Allowance	52,897	gsf	$ 3.00	$ 158,690
	Floor Finishes				
	Floor Finishes (Carpet, Sealed Concrete, VCT, LVT & Ceramic Tile) - Allowance	52,897	gsf	$ 10.50	$ 555,415
	Floor Prep & Protection	52,897	gsf	$ 1.00	$ 52,897
	Ceiling Finishes				
	Ceiling Finishes (ACT, GWB - Painted & Exposed Ceiling - Painted) - Allowance	52,897	gsf	$ 5.00	$ 264,483
	Acoustic Wood Panels Ceiling - Allowance	52,897	gsf	$ 8.50	$ 449,622
	SUBTOTAL INTERIOR FINISHES	**52,897**	**BGSF**	**$ 45.30**	**$ 2,396,006**
D10	**CONVEYING SYSTEMS**				
	Elevators & Lifts				
	Hydraulic Elevator (3) Stops	3	ea	$ 75,000.00	$ 225,000
	SUBTOTAL CONVEYING SYSTEMS	**52,897**	**BGSF**	**$ 4.25**	**$ 225,000**
D20	**PLUMBING**				
	Plumbing				
	Plumbing - High Performance (per MW Engineers)	52,897	gsf	$ 27.15	$ 1,435,890
	SUBTOTAL PLUMBING	**52,897**	**BGSF**	**$ 27.15**	**$ 1,435,890**
D30	**HVAC**				
	HVAC				
	HVAC - High Performance (per MW Engineers)	52,897	gsf	$ 83.35	$ 4,409,062
	SUBTOTAL HVAC	**52,897**	**BGSF**	**$ 83.35**	**$ 4,409,062**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D40	**FIRE PROTECTION**						
	Fire Protection						
	Fire Protection - High Performance (per MW Engineers)	52,897	gsf	$	5.52	$	291,763
	SUBTOTAL FIRE PROTECTION	**52,897**	**BGSF**	**$**	**5.52**	**$**	**291,763**
D50	**ELECTRICAL**						
	Electrical - High Performance (per MW Engineers)						
	Power	52,897	gsf	$	36.24	$	1,916,987
	Lighting & Controls	52,897	gsf	$	16.09	$	851,113
	Telecom, AV	52,897	gsf	$	18.95	$	1,002,398
	FA, Sec	52,897	gsf	$	4.19	$	221,638
	Solar PV Array	1	ls	$	78,120	$	78,120
	SUBTOTAL ELECTRICAL	**52,897**	**BGSF**	**$**	**76.95**	**$**	**4,070,256**
E10	**EQUIPMENT**						
	Residential Equipment						
	Residential Equipment - Allowance	1	ls	$	15,000.00	$	15,000
	Projection Screen Equipment						
	Projection Screen Equipment Ceiling Recessed - Allowance	1	ls	$	20,000.00	$	20,000
	SUBTOTAL EQUIPMENT	**52,897**	**BGSF**	**$**	**0.66**	**$**	**35,000**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	52,897	gsf	$	8.50	$	449,622
	Window Treatment						
	Blackout Shades - Sidelites/Relites	1,216	sf	$	30.00	$	36,480
	Roller Shades	7,016	sf	$	20.00	$	140,323
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**52,897**	**BGSF**	**$**	**11.84**	**$**	**626,425**
F10	**SPECIAL CONSTRUCTION**						
	Scaffolding - Target Value						
	Erect Scaffolding, Certify and Dismantle Scaffolding Incl. First Month Rent	1	ls	$	467,830.00	$	467,830
	Monthly Rental	5	mo	$	10,000.00	$	50,000
	Shrink Wrap Scaffolding - (ACM Stucco Removal)	1	ls	$	85,060.00	$	85,060
	Maintaining Scaffolding and Screening	80	hr	$	97.00	$	7,760
	SUBTOTAL SPECIAL CONSTRUCTION	**52,897**	**BGSF**	**$**	**11.54**	**$**	**610,650**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
F20	**SELECTIVE BUILDING DEMOLITION**				
	Selective Building Demolition				
	Hazardous Components Abatement				
	None				
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**52,897**	**BGSF**	**$ -**	**$ -**
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**52,897**	**BGSF**	**$ -**	**$ -**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	52,897
Project Start Date:	Q3, 2027	**Site GSF:**	55,060
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	55,060	SGA	$ 5.69	$ 313,043
G20	Site Improvements	55,060	SGA	$ 5.75	$ 316,595
G30	Site Civil / Mech Utilities	55,060	SGA	$ 3.50	$ 192,710
G40	Site Electrical Utilities	55,060	SGA	$ 2.54	$ 140,000
G50	Other Site Construction	55,060	SGA	$ -	$ -
SITEWORK SUBTOTAL					**$ 962,348**
	Design Contingency			20.00%	$ 192,470
	Subtotal				$ 1,154,818
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 69,289
	Subtotal				$ 1,224,107
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**55,060**	**SGA**	**$ 22.23**	**$ 1,224,107**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
G10	**SITE PREPARATION**				
	General Sitework Requirements				
	Mobilization	1	ls	$ 30,000.00	$ 30,000
	Site Layout & Potholing	1	ls	$ 5,000.00	$ 5,000
	Traffic Control (for entire project)	6	weeks	$ 6,500.00	$ 39,000
	Site Improvements Demolition & Relocation				
	Selective Site Demo & Protection of Site Items - Allowance	55,060	sf	$ 0.35	$ 19,271
	Demo Utilities				
	Piping (water), Piping (sewer, storm, etc.), Structures (manhole, catch basin, hydrant), Cap Utiilities (abandon pipe in place)	55,060	sf	$ 0.75	$ 41,295
	Misc. Site Clearing	55,060	sf	$ 0.25	$ 13,765
	Site Earthwork				
	Temporary Construction Fencing	600	lf	$ 12.00	$ 7,200
	TESC Erosion Control - Filter Fabric Fence, Catch Basin Inlet Protection, & Stabilized Construction Entry	1	ls	$ 12,500	$ 12,500
	Tree Protection Fencing	1	ls	$ 3,500	$ 3,500
	Contractor Access and Laydown Area	1,500	sf	$ 2.00	$ 3,000
	Clear and Grub	55,060	sf	$ 0.20	$ 11,012
	Excavation				
	Native Cut / Fill - Allowance	1,500	cy	$ 35.00	$ 52,500
	Export Unsuitable - Allowance	500	cy	$ 75.00	$ 37,500
	Imported Fill - Allowance	500	cy	$ 55.00	$ 27,500
	Dewatering - Allowance	1	ls	$ 10,000.00	$ 10,000
	Foundation Earthwork				
	Footing Excavation and Backfill	In Building Section A10			
	Footing Drains with Gravel	In Building Section A10			
	Hazardous Waste Remediation				
	None Included				
	SUBTOTAL SITE PREPARATON	**55,060**	**SGA**	**$ 5.69**	**$ 313,043**
G20	**SITE IMPROVEMENTS**				
	Asphalt Paving & Concrete Site Work (Base Courses Included)				
	Concrete Curbs, Concrete Paving and Walkways - Allowance	55,060	sf	$ 2.00	$ 110,120
	Site Development				
	Concrete Retaining Walls, Seat Walls, Fencing, Bike Rack and Flag Pole - Allowance	55,060	sf	$ 0.75	$ 41,295

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Landscaping/Irrigation						
	Irrigation - General Landscaping - Allowance	55,060	sf	$	0.50	$	27,530
	Planter Shrubs and Ground Cover - Allowance	55,060	sf	$	2.50	$	137,650
	SUBTOTAL SITE IMPROVEMENTS	**55,060**	**SGA**	**$**	**5.75**	**$**	**316,595**
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Water Service Utilities (Incl. Tie-in to Existing, Water/Fire Line, Water Meter, Irrigation Meter, Valve, Domestic Water, Fire Department Connection & Existing Street Surface Repair/Traffic Control) - Allowance	55,060	sga	$	1.25	$	68,825
	Sanitary Sewer Systems						
	Sanitary Sewer Systems (Incl. Tie-in to Existing, Sewer Line, Cleanouts, Manhole, Septic System & Drain Field and Associated System & Existing Street Surface Repair/Traffic Control) - Allowance	55,060	sga	$	0.75	$	41,295
	Storm Drainage						
	Storm Drainage (Incl. Tie-in to Existing, Drain Line, Cleanouts, Catch Basin, Bioretention & Existing Street Surface Repair/Traffic Control) - Allowance	55,060	sga	$	1.50	$	82,590
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**55,060**	**SGA**	**$**	**3.50**	**$**	**192,710**
G40	**SITE ELECTRICAL UTILITIES**						
	Site Electrical Utilities - High Performance (per MW Engineers)						
	Site Utilities	1	ls	$	100,000	$	100,000
	Site Lighting	1	ls	$	40,000	$	40,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**55,060**	**SGA**	**$**	**2.54**	**$**	**140,000**
G50	**OTHER SITE CONSTRUCTION**						
	Other Site Construction						
	SUBTOTAL OTHER SITE CONSTRUCTION	**55,060**	**SGA**	**$**	**-**	**$**	**-**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**55,060**	**SGA**	**$**	**-**	**$**	**-**

SECTION 6

APPENDICES

6.5 C-100 (PHASE 1 & PHASE 2)

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Martin Williamson - Phase 1 (Alternate C)
OFM Project Number	40000113

Contact Information	
Name	Kris Jeske - EWU Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	71,478	MACC per Gross Square Foot	$749
Usable Square Feet	50,034	Escalated MACC per Gross Square Foot	$850
Alt Gross Unit of Measure			
Space Efficiency	70.0%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	9.51%
Remodel	Yes	Projected Life of Asset (Years)	50
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney
Contingency Rate	10%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	September-23	Predesign End	May-24
Design Start	October-25	Design End	June-27
Construction Start	August-27	Construction End	April-29
Construction Duration	20 Months		

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Project Cost Summary

Total Project	$78,579,317	Total Project Escalated	$88,770,743
		Rounded Escalated Total	$88,771,000

Amount funded in Prior Biennia	**$281,000**
Amount in current Biennium	**$8,071,000**
Next Biennium	**$79,985,000**
Out Years	**$434,000**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$281,446		
Design Phase Services	$3,864,336		
Extra Services	$1,362,000		
Other Services	$1,816,151		
Design Services Contingency	$732,393		
Consultant Services Subtotal	**$8,056,326**	**Consultant Services Subtotal Escalated**	**$8,788,384**

Construction			
Maximum Allowable Construction Cost (MACC)	$53,536,820	Maximum Allowable Construction Cost (MACC) Escalated	$60,739,009
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$5,353,682		$6,088,208
Non-Taxable Items	$267,684		$304,411
Sales Tax	$5,265,145	Sales Tax Escalated	$5,974,791
Construction Subtotal	**$64,423,332**	**Construction Subtotal Escalated**	**$73,106,419**

Equipment			
Equipment	$3,037,815		
Sales Tax	$270,366		
Non-Taxable Items	$0		
Equipment Subtotal	**$3,308,181**	**Equipment Subtotal Escalated**	**$3,762,064**

Artwork			
Artwork Subtotal	**$441,645**	**Artwork Subtotal Escalated**	**$441,645**

Agency Project Administration			
Agency Project Administration Subtotal	$2,349,834		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$2,349,834**	**Project Administration Subtotal Escalated**	**$2,672,231**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$78,579,317**	Total Project Escalated	**$88,770,743**
		Rounded Escalated Total	**$88,771,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$8,788,384	$281,446	$6,442,235	$2,065,327	**-$624**
Construction					
Construction Subtotal	$73,106,419			$73,112,861	**-$6,442**
Equipment					
Equipment Subtotal	$3,762,064			$3,762,394	**-$330**
Artwork					
Artwork Subtotal	$441,645				**$441,645**
Agency Project Administration					
Project Administration Subtotal	$2,672,231		$1,628,320	$1,044,146	**-$235**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$88,770,743**	**$281,446**	**$8,070,555**	**$79,984,728**	**$434,014**
	$88,771,000	**$281,000**	**$8,071,000**	**$79,985,000**	**$434,000**
	Percentage requested as a new appropriation		**9%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Full Building Design Services (Phase 1 and Phase 2 Consultant Services)
(Note: Phase 2 design services is included in Phase 2 -C100)

What has been completed or is underway with a previous appropriation?
Predesign Services were retained in 2023-2025 Biennium

What is planned with a future appropriation?
2027-2029 Phase 1 Construction/Closeout Services
2029-2031 Phase 2 Construction - (See Phase 2 - C100)

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$0				
Appraisal and Closing	$0				
Right of Way	$0				
Demolition	$0				
Pre-Site Development	$0				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$281,446			
Other				
Insert Row Here				
Sub TOTAL	**$281,446**	**1.0421**	**$293,295**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$3,864,336			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$3,864,336**	**1.0709**	**$4,138,318**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$150,000			
Geotechnical Investigation	$50,000			
Commissioning	$150,000			
Site Survey	$30,000			
Testing	$150,000			
LEED Services	$90,000			
Voice/Data Consultant	$75,000			
Value Engineering	$90,000			
Constructability Review	$80,000			
Environmental Mitigation (EIS)	$35,000			
Landscape Consultant	$50,000			
NREC (Third Party Certification)	$12,000			3rd Party Req by local AHJ
Experiential Graphics	$150,000			
Acoustical Engineering	$25,000			
ELCCA	$35,000			
LCCA	$40,000			
Historical Consultant	$50,000			Assumed Significance
Haz Mat Assesment	$60,000			Under Owner
Record/Phase 1 Update	$40,000			
Sub TOTAL	**$1,362,000**	**1.0709**	**$1,458,566**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,736,151			31% of A/E Basic Services
HVAC Balancing	$80,000			
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$1,816,151**	**1.1372**	**$2,065,327**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$732,393			
Other				
Insert Row Here				
Sub TOTAL	**$732,393**	**1.1372**	**$832,878**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$8,056,326**		**$8,788,384**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$295,497			
G20 - Site Improvements	$295,245			
G30 - Site Mechanical Utilities	$153,090			
G40 - Site Electrical Utilities	$420,000			
G60 - Other Site Construction	$137,500			
Design Contingency	$260,266			
Contractor Mark-Up	$93,696			
Sub TOTAL	**$1,655,294**	**1.1066**	**$1,831,749**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Full Building Demolition	$2,280,000			
Shoring Existing Historic Façade	$740,000			
Sub TOTAL	**$3,020,000**	**1.1066**	**$3,341,932**	
3) Facility Construction				
A10 - Foundations	$1,508,137			
A20 - Basement Construction	$0			
B10 - Superstructure	$4,494,742			
B20 - Exterior Closure	$4,616,977			
B30 - Roofing	$767,624			
C10 - Interior Construction	$4,921,975			
C20 - Stairs	$140,000			
C30 - Interior Finishes	$3,181,807			
D10 - Conveying	$225,000			
D20 - Plumbing Systems	$2,246,631			
D30 - HVAC Systems	$7,212,100			
D40 - Fire Protection Systems	$456,500			
D50 - Electrical Systems	$5,752,498			
F10 - Special Construction	$828,750			
F20 - Selective Demolition	$0			
General Conditions	$1,500,000			
CFCI E10 Equipment	$45,000			
CFCI E20 Casework & Furnishings	$836,163			
Design Contingency	$7,446,781			
Contractor Mark-Up	$2,680,841			
Sub TOTAL	**$48,861,526**	**1.1372**	**$55,565,328**	
4) Maximum Allowable Construction Cost				

MACC Sub TOTAL	**$53,536,820**		**$60,739,009**	
	$749		*$850 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$5,353,682			
Other				
Insert Row Here				
Sub TOTAL	**$5,353,682**	**1.1372**	**$6,088,208**	
8) Non-Taxable Items				
Building Permit 0.5%	$267,684			
Insert Row Here				
Sub TOTAL	**$267,684**	**1.1372**	**$304,411**	
9) Sales Tax				
Sub TOTAL	**$5,265,145**		**$5,974,791**	
CONSTRUCTION CONTRACTS TOTAL	**$64,423,332**		**$73,106,419**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment	$696,910				
E20 - Furnishings	$1,624,695				
F10 - Special Construction					
Telecom/ Networking	$436,016				
Custodial Equip/ Supplies	$280,194				
Insert Row Here					
Sub TOTAL	**$3,037,815**		**1.1372**	**$3,454,604**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.1372**	**$0**	
3) Sales Tax					
Sub TOTAL	**$270,366**			**$307,460**	
EQUIPMENT TOTAL	**$3,308,181**			**$3,762,064**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$441,645				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$441,645**		**NA**	**$441,645**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$2,349,834				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$2,349,834**		**1.1372**	**$2,672,231**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1066**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Building is largely replacementl; however, goal is to maintain historic façade in front of new construciton. Little building
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Martin Williamson - Phase 2 (Alternate C)
OFM Project Number	40000113

Contact Information	
Name	Kris Jeske - EWU Director Of Construction & Planning
Phone Number	509-359-6565
Email	Kjeske1@ewu.edu

Statistics			
Gross Square Feet	52,897	MACC per Gross Square Foot	$701
Usable Square Feet	37,028	Escalated MACC per Gross Square Foot	$850
Alt Gross Unit of Measure			
Space Efficiency	70.0%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	9.94%
Remodel	Yes	Projected Life of Asset (Years)	50
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney
Contingency Rate	10%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	September-23	Predesign End	May-24
Design Start	October-25	Design End	June-27
Construction Start	August-29	Construction End	April-31
Construction Duration	20 Months		

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Project Cost Summary

Total Project	$54,465,607	Total Project Escalated	$65,503,119
		Rounded Escalated Total	$65,503,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$4,495,000**
Next Biennium	**$584,000**
Out Years	**$60,424,000**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$2,796,512		
Extra Services	$837,000		
Other Services	$1,336,404		
Design Services Contingency	$496,992		
Consultant Services Subtotal	**$5,466,907**	**Consultant Services Subtotal Escalated**	**$6,117,422**

Construction			
Maximum Allowable Construction Cost (MACC)	$37,067,087	Maximum Allowable Construction Cost (MACC) Escalated	$44,970,536
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$3,706,709		$4,501,057
Non-Taxable Items	$0		$0
Sales Tax	$3,628,930	Sales Tax Escalated	$4,403,047
Construction Subtotal	**$44,402,726**	**Construction Subtotal Escalated**	**$53,874,640**

Equipment			
Equipment	$2,248,122		
Sales Tax	$200,083		
Non-Taxable Items	$0		
Equipment Subtotal	**$2,448,205**	**Equipment Subtotal Escalated**	**$2,972,856**

Artwork			
Artwork Subtotal	**$325,886**	**Artwork Subtotal Escalated**	**$325,886**

Agency Project Administration			
Agency Project Administration Subtotal	$1,821,884		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$1,821,884**	**Project Administration Subtotal Escalated**	**$2,212,314**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$54,465,607**	Total Project Escalated	**$65,503,119**
		Rounded Escalated Total	**$65,503,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$6,117,422		$4,495,038		**$1,622,384**
Construction					
Construction Subtotal	$53,874,640				**$53,874,640**
Equipment					
Equipment Subtotal	$2,972,856				**$2,972,856**
Artwork					
Artwork Subtotal	$325,886				**$325,886**
Agency Project Administration					
Project Administration Subtotal	$2,212,314			$584,176	**$1,628,138**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$65,503,119**	**$0**	**$4,495,038**	**$584,176**	**$60,423,905**
	$65,503,000	**$0**	**$4,495,000**	**$584,000**	**$60,424,000**
	Percentage requested as a new appropriation		**7%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Full Building Design Services (Phase 1 and Phase 2 Consultant Services)
(Note: Phase 1 design services is included in Phase 1 -C100)

What has been completed or is underway with a previous appropriation?
Predesign Services are reflected in Phase 1 Documentation

What is planned with a future appropriation?
2027-2029 Phase 1 Construction/Closeout Services (See Phase 1 - C100)
2029-2031 Phase 2 Construction/Closeout Services

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$0				
Appraisal and Closing	$0				
Right of Way	$0				
Demolition	$0				
Pre-Site Development	$0				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0421**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$2,796,512			69% of A/E Basic Services
Insert Row Here				
Sub TOTAL	**$2,796,512**	**1.0709**	**$2,994,785**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$150,000			
Geotechnical Investigation				
Commissioning	$150,000			
Site Survey				
Testing	$150,000			
LEED Services	$90,000			
Voice/Data Consultant	$75,000			
Value Engineering	$90,000			
Constructability Review				
Environmental Mitigation (EIS)	$35,000			
Landscape Consultant	$50,000			
NREC (Third Party Certification)	$12,000			
Historial Consultant				
Record Drawings	$35,000			
Sub TOTAL	**$837,000**	**1.0709**	**$896,344**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,256,404			31% of A/E Basic Services
HVAC Balancing	$80,000			
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$1,336,404**	**1.2143**	**$1,622,796**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$496,992			
Other				
Insert Row Here				
Sub TOTAL	**$496,992**	**1.2143**	**$603,497**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$5,466,907**		**$6,117,422**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$313,043			
G20 - Site Improvements	$316,595			
G30 - Site Mechanical Utilities	$192,710			
G40 - Site Electrical Utilities	$140,000			
G60 - Other Site Construction	$0			
Design Contingency	$192,470			
Contractor Mark-Up	$69,289			
Sub TOTAL	**$1,224,107**	**1.1816**	**$1,446,405**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1816**	**$0**	
3) Facility Construction				
A10 - Foundations	$1,153,504			
A20 - Basement Construction	$0			
B10 - Superstructure	$3,320,779			
B20 - Exterior Closure	$3,923,050			
B30 - Roofing	$568,314			
C10 - Interior Construction	$3,718,501			
C20 - Stairs	$215,000			
C30 - Interior Finishes	$2,396,006			
D10 - Conveying	$225,000			
D20 - Plumbing Systems	$1,435,890			
D30 - HVAC Systems	$4,409,062			
D40 - Fire Protection Systems	$291,763			
D50 - Electrical Systems	$4,070,256			
F10 - Special Construction	$610,650			
F20 - Selective Demolition	$0			
General Conditions	$1,500,000			
CFCI E10 Equipment	$35,000			
CFCI E20 Casework & Furnishings	$626,425			
Design Contingency	$5,399,840			
Contractor Mark-Up	$1,943,942			
Sub TOTAL	**$35,842,980**	**1.2143**	**$43,524,131**	
4) Maximum Allowable Construction Cost				

MACC Sub TOTAL	**$37,067,087**		**$44,970,536**	
	$701		*$850 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$3,706,709			
Other				
Insert Row Here				
Sub TOTAL	**$3,706,709**	**1.2143**	**$4,501,057**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.2143**	**$0**	
9) Sales Tax				
Sub TOTAL	**$3,628,930**		**$4,403,047**	
CONSTRUCTION CONTRACTS TOTAL	**$44,402,726**		**$53,874,640**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment	$515,746				
E20 - Furnishings	$1,202,348				
F10 - Special Construction					
Telecom/ Networking	$322,672				
Custodial Equip/ Supplies	$207,356				
Insert Row Here					
Sub TOTAL	**$2,248,122**		**1.2143**	**$2,729,895**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.2143**	**$0**	
3) Sales Tax					
Sub TOTAL	**$200,083**			**$242,961**	
EQUIPMENT TOTAL	**$2,448,205**			**$2,972,856**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$325,886				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$325,886**		**NA**	**$325,886**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$1,821,884				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$1,821,884**		**1.2143**	**$2,212,314**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1816**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

370 – Eastern Washington University

2025-23 Biennial Capital Budget Request

Attachments for Reference – Ref 3

EWU Martin-Williamson Predesign Report

EWU

MARTIN-WILLIAMSON

Integrus Project No. 22364.01 June 28th, 2024

PREDESIGN BOOK

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

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TABLE OF CONTENTS

INTRODUCTION

AUTHORITY:

This predesign study was authorized by and contracted through Eastern Washington University.

FORMAT:

This document has prepared by utilizing the format recommended in the 2025-2027 Pre-Design Manual developed by the Office of Financial Management, State of Washington.

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Agency Information	
Agency Name	Eastern Washington University
Agency Code	370
Project Number	40000113
Project Title	Martin Williamson Hall
Agency Contact	Kris Jeske, Director, Construction and Planning kjeske1@ewu.edu Eastern Washington University 101 Rozell Cheney, WA 99004 P: (509) 359-6323

Martin Williamson Hall - Project Site

SECTION 1

EXECUTIVE SUMMARY

1.0 EXECUTIVE SUMMARY

1.1 PROBLEM SUMMARY

Martin Williamson Hall stands as one of Eastern Washington University's largest academic buildings, encompassing approximately 90,000 gross square feet. Positioned prominently near the main campus quad, Martin Williamson creates an iconic historic backdrop for the pedestrian heart of campus life.

Martin Williamson Hall houses two of five programs within the College of Professional Programs: the School of Education and the School of Psychology. Also located within Martin Williamson Hall, and closely tied to the departments and academic success is Counseling and Wellness Services.

The current condition and configuration of Martin Williamson Hall presents significant obstacles and limitations to the departments housed within, inhibiting effective quality program instruction, administration, and student services. Addressing these challenges is paramount to fostering an environment conducive to student and departmental success at EWU.

Eastern Washington University is working to reduce its Energy Use Intensity (EUI) to meet Clean Building Performance Standard requirements and aims to switch from fossil fuel-based heating to alternative energy sources.

1.2 OPPORTUNITY AND PROGRAM REQUIREMENTS

Currently, Martin Williamson Hall houses the School of Education, School of Psychology, and Mental Health Counseling Services, but the building lacks sufficient space and amenities to support these programs effectively. There are issues with accessibility, safety, and outdated infrastructure, which impact the learning environment and research capabilities. Additionally, these shortcomings contribute to high energy usage and carbon emissions.

The proposed project is envisioned as a 124,000 gsf multi-story and multi-use facility to house the School of Education, School of Psychology, Counseling and Wellness Services, and Student Accommodations and Support Services.

Martin Hall Entry

Martin Williamson Hall Connection & Williamson Entry

Martin Williamson Hall Connection

EWU currently houses the critical student support services of Mental Health Counseling Services, Wellness Services, and Student Accommodations and Support Services spread across three different buildings on campus. Consolidating the three services of Mental Health Counseling, Wellness, and Student Accommodations into a single building at the campus core will improve access and offer streamlined and holistic wrap-around support to EWU students.

Mental Health Counseling services are presently housed in Martin Hall, where the counseling offices and treatment rooms are outdated and inadequate. These spaces lack sufficient size and amenities to accommodate the full range of services provided. Moreover, they suffer from accessibility shortcomings and fail to uphold the necessary standards for patient confidentiality.

Wellness Services currently reside within the University Recreation Center and lacks a dedicated space for its Peer Health Educators and Eagles for Recovery program. With Counseling and Wellness housed in separate buildings, it not only hinders collaboration and wrap-around student support, but challenges the Director to provide timely oversight and immediate assistance to both initiatives.

Student Accommodations and Support Services currently occupies two segmented areas in the basement level of Hargreaves Hall. This space poses challenges for individuals with mobility or vision impairments due to its remote location within the building requiring the use of ramps and elevators. Furthermore, the case manager offices located in a separate suite creates obstacles for directors to efficiently oversee activities and provide assistance when required.

The COVID-19 pandemic produced psychological hardship across the world and has created new social and academic challenges for today's youth. The World Health Organization says, "COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide in its first year;" "By the end of 2021 the situation had somewhat improved but today too many people remain unable to get the care and support they need for both pre-existing and newly developed mental health conditions."

This project will allow Eastern Washington University's Counseling and Wellness Services, Training Clinic, and Student Accommodations and Support Services to be conveniently collocated at the center of campus, where they will be able to provide high quality services to students, faculty, staff, and the broader community for free and in private spaces designed for confidentiality and comfort.

This project will result in a new functional facility that addresses modern instruction and research needs and provides a sensitive and supportive environment for all EWU students. The facility will have an expected life of 50-100 years, and will significantly increase energy efficiency, with a high-performance envelope, and all new low carbon energy efficient designs and equipment. It will be designed to a minimum LEED Silver certification by the U.S. Green Building Council and to meet the Washington State Clean Building Standards.

An energy life cycle cost analysis was conducted to explore potential energy systems for the building. This assessment revealed an energy use reduction from the existing building, which could lower the overall campus EUI by over 6%, bringing it within the Clean Building Performance Standard requirements. With these high-performing energy systems and a connection to the newly proposed all-electric geothermal heating system, this building will become one of the first all-electric buildings on campus, significantly reducing the campus' operational carbon emissions.

1.3 SUMMARY OF ALTERNATIVES

The Martin Williamson Hall Predesign considered three alternatives summarized below.

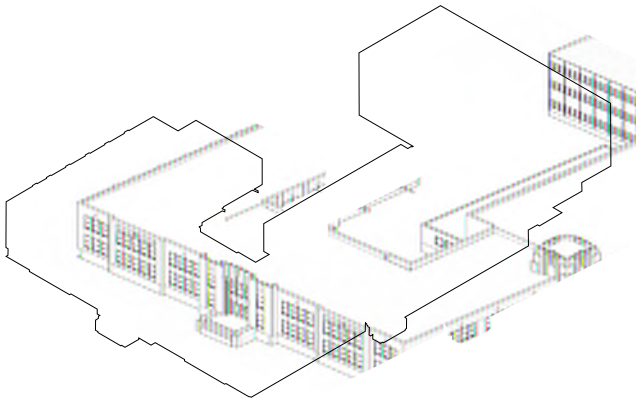
Alternative A: No Action
A no action alternative was considered.

Alternative B: Renovation & Replacement
Alternative B explored the full renovation of Martin Hall and the complete replacement of Williamson Hall.

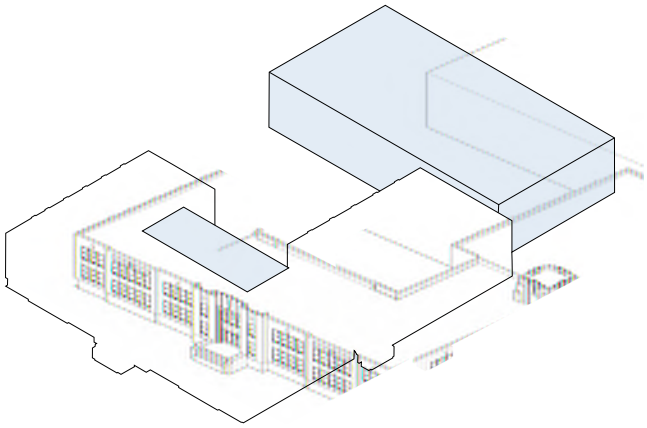
Alternative C: Historic Screen (Preferred Alternative)
Alternative C presents a comprehensive plan centered on the replacement of Martin Williamson Hall while preserving two of Martin Hall's historic facades—the northeast and southeast elevations.

1.4 SUMMARY OF PREFERRED ALTERNATIVE

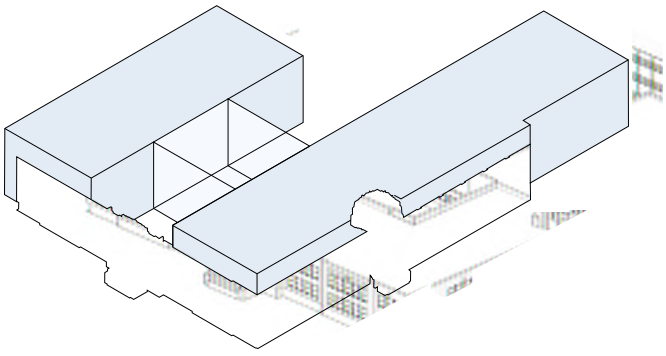
The identified institutional goals, program needs, and ability to address state mandated performance criteria can be best addressed through Alternative C: Historic Screen. This approach aligns most closely with EWU's institutional mission and overarching goals, while effectively addressing the project's Guiding Principles, and meeting the diverse needs of academic and student service programs to be housed in the facility.



Alternative A Axon - No Action



Alternative B Axon - Renovation & Replacement



Alternative C Axon - Historic Screen

1.5 SUMMARY BUDGET OF PREFERRED ALTERNATIVE

Summary Budget of Preferred Alternative						
	Phase 1 - Cost Estimate	Phase 2 - Cost Estimate	Total Cost	Phase 1 - Escalated Costs	Phase 2 - Escalated Costs	Total Cost - Escalated
Acquisition	$0	$0	$0	$0	$0	$0
Consultants	$8,056,326	$5,466,907	$13,523,233	$8,789,190	$6,117,967	$14,907,157
Construction	$64,423,332	$44,402,726	$108,826,058	$73,112,861	$53,879,081	$126,991,942
Equipment	$3,308,181	$2,448,205	$5,756,386	$3,762,394	$2,973,101	$6,735,495
Artwork	$441,683	$325,913	$767,596	$441,685	$325,913	$767,598
Project Admin	$2,349,834	$1,821,884	$4,171,718	$2,672,466	$2,212,496	$4,884,962
Other Costs	$0	$0	$0	$0	$0	$0
Total Project	**$78,579,356**	**$54,465,635**	**$133,044,991**	**$88,778,596**	**$65,508,558**	**$154,287,154**

	Cost Estimate	Cost/ SF	Escalated Cost Estimate	Cost/ SF
MACC Phase 1	$53,536,820	$749	$60,744,363	$850
MACC Phase 2	$37,067,087	$701	$44,974,243	$850
MACC	**$90,603,907**	**$728**	**$105,718,606**	**$850**

SECTION 2

PROBLEM STATEMENT

2.0 PROBLEM STATEMENT

2.1 IDENTIFY THE PROBLEM & OPPORTUNITIES

Problem

EWU seeks design funding to renovate and re-imagine Martin Williamson Hall. Constructed in 1935 and later renovated in 1977, Martin Hall's evolution reflects the changing landscape of academic pedagogy. While the renovation in '77 introduced specialized laboratory and research clinical spaces, aligned with teaching methodologies of the time, these configurations now pose barriers to modern instructional practices. In contrast, Williamson Hall, erected in 1967, awaits comprehensive renovation and crucial infrastructure upgrades, with its systems exceeding their anticipated lifespans.

The current condition and configuration of Martin Williamson Hall presents significant obstacles and limitations to the departments housed within, inhibiting effective quality program instruction, administration, and student services. Addressing these challenges is paramount to fostering an environment conducive to student and departmental success at EWU.

Opportunities

This project offers opportunities to tackle current programmatic, safety, equity, sustainability, and operational challenges facing Martin Williamson Hall. Through strategic initiatives, EWU aims to profoundly enhance the experiences of students, faculty, and staff within the School of Education, School of Psychology, Counseling and Wellness Services, Student Accommodations and Support Services, and the wider EWU community. The renovation of Martin Williamson Hall encompasses several key opportunities:

- **Quality Learning Outcomes:**

Transforming underutilized and inadequate instructional spaces into new, accessible, and supportive learning environments tailored to meet the diverse needs of the student body. This alternative proposes a reduction in classrooms from 27 to 15, which improves EWU's total campus classroom utilization.

- **High-Performance and Decarbonization:**

Implementing state-of-the-art, energy-efficient building systems to minimize energy consumption and reduce the need for ongoing maintenance. These upgrades not only benefit the environment but also ensure the long-term functionality of the facility.

Eastern Washington University is actively seeking strategies to reduce its campus Energy Use Intensity (EUI) to meet the Clean Building Performance Standard requirements, as the current EUI exceeds these standards. Additionally, the university aims to utilize alternative heating sources that do not rely on fossil fuels, compared to their existing fossil fuel-driven campus steam plant.

- **Inclusive and Equitable Environments:**

By housing C&WS and SASS within the building, implementing universal design principles will enhance the capacity of these programs to support all EWU students effectively and equitably. The inclusion of Inclusive Restrooms, designed to accommodate students of all identities, abilities, and backgrounds, will set a precedent for future models across the EWU campus.

- **Safety and Access:**

Enhancing accessibility and safety measures by ensuring all building entries are accessible, eliminating long dead-end corridors to improve emergency response, addressing accessibility deficiencies, and enhancing wayfinding and navigational features.

Auditorium

2.2 DRIVERS FOR THE PROJECT'S OPERATIONAL PROGRAMS

The existing Martin Williamson Hall is currently in non-compliance or below standard requirements of the following local, state, and federal codes:

Accessibility Requirements for People with Disabilities:

- Washington State Law Against Discrimination (RCW49.60.222)
- Washington State Building Code (WAC 52-50)
- Americans with Disabilities Act of 1990 (2 U.S.C. Part B)
- Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794)

Green Building Requirements:

- High Performance Building – LEED Silver Standard (RCW 39.35D)
- State Energy Standards for Clean Buildings, RCW 19.27A.210
- Per Executive Order 20-01 State Efficiency and Environmental Performance, New Facility Construction, dated January 23, 2020.
- Electric Car Charging Stations per RCW 19.27.540
- Greenhouse Gas Reduction Strategies per RCW 70A.45.070

Infrastructure Requirements:

- International Building Code (IBC)
- International Mechanical Code
- International Fire Code (IFC)
- Local Codes & Ordinances
- National Electric Code (NFPA 70)

Fire Protection Requirements:

- National Fire Protection Association (NFPA) Section 13
- International Fire Code (IFC)
- Regulations of the State Fire Marshall

Pedagogy, research, and technology requirements significantly differ from those of fifty years ago when the buildings were constructed and renovated. Current techniques often include more project-based work which demands group participation in a large room setup with multiple teaching and learning aids. These typically square spaces don't fit well in the old building with short spans and small column bays. The few larger classrooms in the existing building have limited technology infrastructure and difficult site lines for students sitting at the room's periphery.

Existing Mental Health Counseling Services Entrance

Existing Student Space

2.3 CONNECTION TO AGENCY MISSION, GOALS AND OBJECTIVES

The Guiding Principles and preferred alternative for this project align with Eastern Washington University's institutional goals at several levels and across several of their different campus plans and initiatives.

Guiding Principles

The proposed renovation of Martin Williamson Hall supports Eastern Washington University's commitment to expanding opportunities for personal transformation through excellence in learning through three core themes of access, learning, and completion. The Martin Williamson Hall renovation embodies each of these requirements by centering key wellness functions and departments that are feeders to our regional wellness and education systems into a single multidisciplinary and highly functional building.

An initial visioning workshop was held with the Pre-design Committee to develop a list of goals and aspirations that would guide the project. The identified goals were all centered around three themes: CONNECTIVE, SUPPORTIVE, and FUTURE FORWARD. The below Guiding Principles will be referenced throughout the design process and aid in project decision making.

CONNECTIVE

- Articulate spaces that are **WELCOMING** to all and foster **CONNECTION**.
- Encourage a **COLLABORATIVE ENVIRONMENT** for student, faculty, and departmental interactions.

SUPPORTIVE

- Create environments that are **SENSITIVE** and meet needs beyond that which is basic and required.
- Provide students and faculty with a modern space for **RESEARCH** and **APPLIED WORK** so they hone skills to **SERVE** their communities.

FUTURE FORWARD

- Build for **LONGEVITY** of infrastructure and program **ADAPTABILITY**, always considering the building's **NEXT LIFE**.
- Reduce environmental impact through **DECARBONIZATION** and improved **EFFICIENCY**.

Alignment to EWU Institutional Strategic Plan

The mission of Eastern Washington University is to provide an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence. The renovation of Martin Williamson Hall will support EWU's 2024-2029 Institutional Strategic Plan (in the process of being finalized and adopted by the board of trustees) through:

ACCESSIBILITY:
Martin Williamson Hall will convert an outdated building, no longer compliant with current codes for accessibility and safety, by improving access and inclusivity throughout to reflect the vibrant, welcoming, and supportive environment they strive to create.

ACADEMIC EXCELLENCE:
Martin Williamson Hall will transform the learning experience of EWU students creating a learning environment that is a hub of hands-on learning, collaboration, and support.

BELONGING:
Martin Williamson Hall will elevate and improve access for all EWU students to Counseling and Wellness Services and Student Accommodations and Support Services by collocating these critical support programs in a central and convenient location.

REGIONAL IMPACT:
Martin Williamson Hall will promote collaboration across the Education and Psychology departments and be a conduit for interaction between faculty, students, and administrators leading to new and unrealized opportunities to support the region.

STUDENT SUCCESS:
Martin Williamson Hall will be transformed into a student-centered hub for learning and support services. Modern functional learning environments will inspire students and ensure that success is not only measured or achieved through academics but a wholistic student experience.

SUSTAINABILITY:
Martin Williamson Hall will have high-performing energy systems and a connection to the newly proposed all-electric geothermal heating system and will become one of the first all-electric buildings on campus.

Primary Campus Pathway - Martin Hall

Arevalo Student Mall Near Martin Williamson

Secondary Campus Pathway - Williamson Hall

Alignment with EWU Campus Master Plan

Eastern Washington University plans to revisit the Campus Master Plan starting summer of 2024 and the renovation of Martin Williamson Hall will remain a critical component of their future planning.

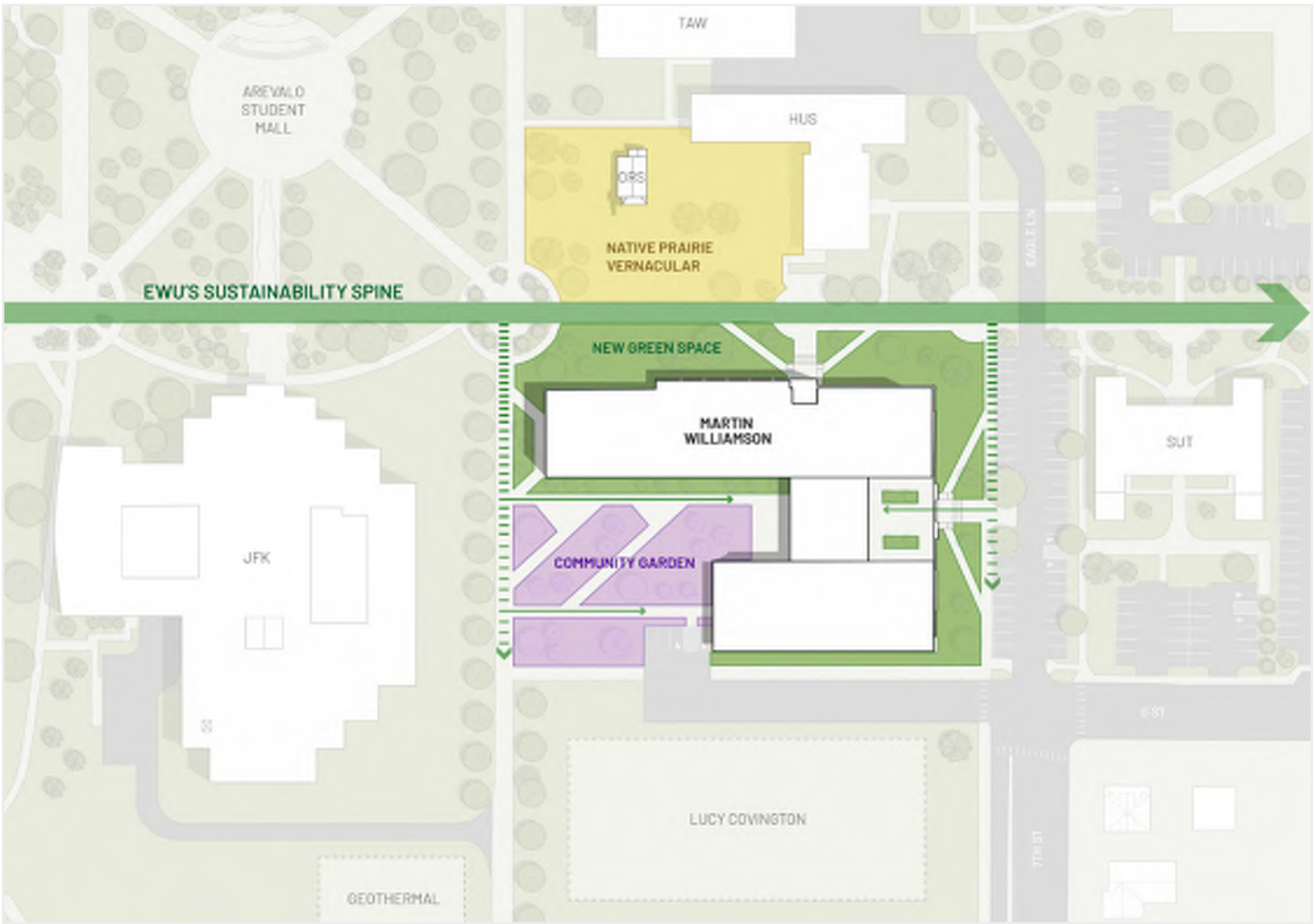
Alignment with EWU Climate Action Plan

The major renovation of Martin Williamson Hall is one of the top building priorities identified in EWU's 2022-2025 Climate Action Plan to support targeted reductions in campus energy use and greenhouse gas emissions.

By connecting this building to the newly proposed, ultra-high efficient geothermal heating and cooling system, it will become one of the first on campus to enable energy trading with existing buildings. This setup will allow the capture and utilization of previously wasted energy.

Alignment with EWU Climate Resiliency Landscape Master Plan

EWU's Climate Resiliency Landscape Master Plan establishes a 'Sustainability Spine' that seamlessly integrates sustainable landscaping into the heart of the campus. This initiative aims to showcase EWU's commitment to sustainability and climate resilience, providing students with daily exposure to these essential concepts. The 'Sustainability Spine' will span the entirety of Martin Williamson Hall's northeast facade, with extensions reaching along its northwest and southeast facades. The preferred Alternative C: Historic Screen intends to incorporate elements of the 'Sustainability Spine' into its landscape design.



Alignment with EWU Climate Resiliency Landscape Master Plan

2.4 SUMMARY OF NEEDS TO SOLVE THE PROBLEM

There are three key components necessary to solve this problem.

1. To best support EWU students with mental health, wellness, and accommodation services, the critical student affairs services such as Counseling and Wellness Services and Student Accommodations and Support Services should be consolidated and collocated at the campus core.

2. To provide quality learning outcomes and grow the region's pool of educators and mental health professionals the School of Education and School of Psychology need modern pedagogically appropriate instructional labs, research space, and classrooms to support learning and innovation.

3. To support EWU's decarbonization plan, reduce operational costs, and meet the campus EUI requirements of the Clean Building Performance Standard, this project necessitates the connection to a new all-electric heating system. This newly proposed all-electric ground source heating and cooling system, known as the Geo Eco Plant, will serve as a standalone heating and cooling central utility plant. The Geo Eco Plant will provide energy to multiple buildings on campus, including this project, enabling energy trading between connected buildings and utilizing previously wasted energy. The Geo Eco Plant will also serve as an instructional tool for the campus and local community, showcasing forward-thinking methods for providing heating and cooling to the campus using renewable energy sources.

2.5 PROJECT HISTORY

Martin Hall was constructed in 1935 to house the campus elementary training school. Williamson Hall was constructed in 1967 to house the growing School of Education. Martin Hall underwent an intensive interior renovation in 1980 to create specialized lab spaces for the School of Psychology. Williamson Hall has never been fully renovated.

2023-2025 Biennium - Predesign Funding Request
2007-2009 Biennium - Predesign Funding Request

Martin Williamson Hall Exterior Connection

Martin Williamson Hall Interior Connection

Martin Hall 1960

SECTION 3

PROGRAM ANALYSIS

3.0 ANALYSIS OF ALTERNATIVES

3.1 ALTERNATIVES CONSIDERED:

The following offers additional descriptions of the three alternatives considered for this project

3.1.1 ALTERNATIVE A: NO ACTION

A No Action alternative was considered but would involve a number of limitations and negative outcomes for EWU students, faculty, and the broader regional community.

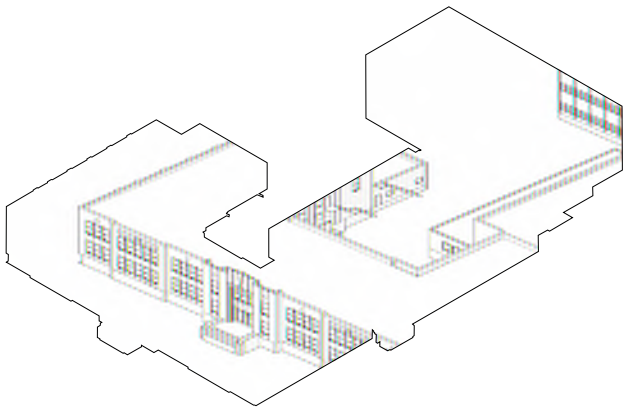
Advantages:

- There are no advantages to a No Action alternative.

Disadvantages:

- Inability to offer quality instruction and learning outcomes for Departments of Education and Psychology.
- Limits ability to grow the Education and Psychology programs and in turn the regional pool of educators and trained mental health professionals.
- Further degradation of a historic structure at the heart of EWU's campus.
- High maintenance and operational costs due to outdated and low performing infrastructure.
- The existing inefficient layout with a 54% efficiency factor remains and contributes to wayfinding and safety issues with many internal halls and corridors.

Existing Martin-Williamson



KEY

- Demolished Space
- New Space
- Existing Space

3.1.2 ALTERNATIVE B: RENOVATION & REPLACEMENT

The Renovation and Replacement alternative suggests a substantial renovation of Martin Hall, including 58,700 sf, along with the replacement of Williamson Hall with a 74,300 sf addition, resulting in a total area of 133,300 sf. The current limitations of the building's size and structural systems make it impossible to accommodate adequately sized and accessible classrooms, necessitating a significant expansion. The existing building's layout and condition are obsolete and require full replacement. Additionally, existing conditions do not support modern teaching methods, inclusivity, or student well-being. Given these considerations, a comprehensive renovation of the existing building and the addition is necessary.

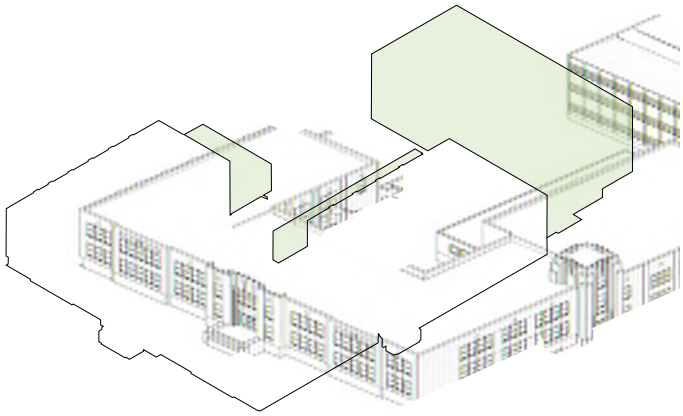
Advantages:

- Retains the historic character of Martin Hall.
- Retains a portion of the embodied carbon of Martin Hall's concrete structure.
- Can redefine the sense of welcome and building character that faces the campus mall.

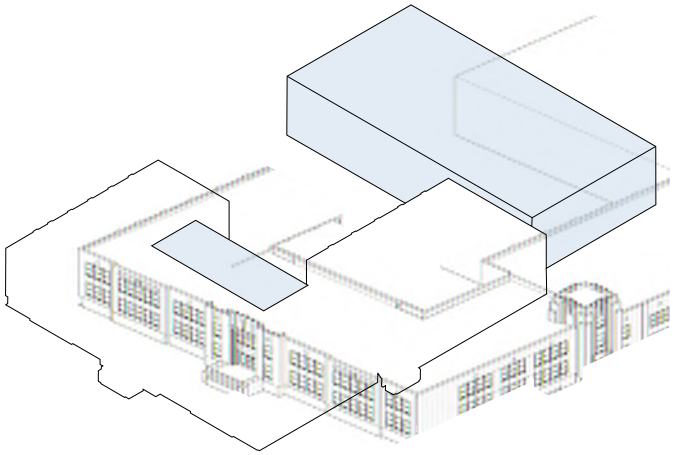
Disadvantages:

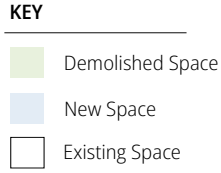
- Requires the demolition and replacement of Williamson Hall.
- Results in minimal long-term adaptability in renovated Martin Hall due to size and spacing of structural system.
- Requires about 9,000 gross square feet more to accommodate the baseline assignable program spaces due to structural grid inefficiencies.
- Larger classroom spaces would be in the new addition retaining limitations to the configuration of spaces in Martin Hall.
- Student support services, such as Counseling and Wellness Services and Student Accommodations and Support Services, remaining in Martin Hall will be either segmented or spread inefficiently along narrow portions of the building due to structural limitations.
- Maintains a mostly enclosed building courtyard with limited visibility and access by the greater EWU campus.
- Segmented and choppy program organization.
- Results in reduced operational efficiency at the renovated portion of the building due to limited envelope improvements, low floor-to-floor height, and inefficient program layout.

Demolished Area Shown in Green



New Space Shown in Blue





3.1.3 ALTERNATIVE C: HISTORIC SCREEN (PREFERRED ALTERNATIVE)

The Historic Screen alternative suggests preserving two of Martin Hall's historic facades and replacing much of the structure with an adaptable and efficient 124,000 sf building beyond.

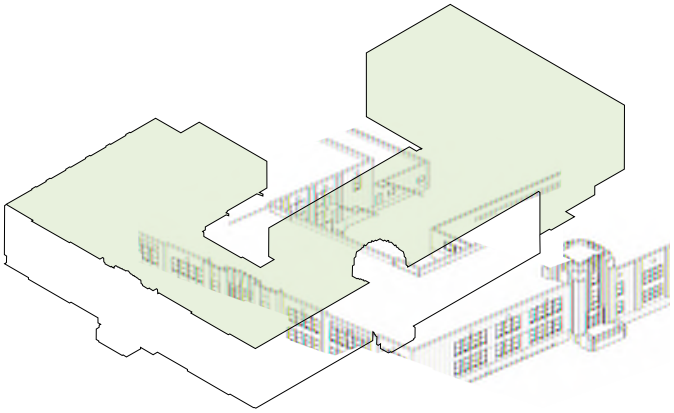
Advantages:

- Retains the historic character of Martin Hall's signature facades.
- Redefine the sense of welcoming and character that faces the campus mall.
- Implements a new structural system that supports long-term adaptability of the building.
- Results in a more cohesive program organization to improve access, wayfinding, and circulation.
- Student support services, such as Counseling and Wellness Services and Student Accommodations and Support Services, can be collocated in an area of the building that supports student access and functionality within the suite.
- Defines outdoor spaces that improve access and use, engage the surrounding campus, and reduce safety and security concerns.
- Results in better operational performance due to a primarily new envelope and more efficient plan and program organization.

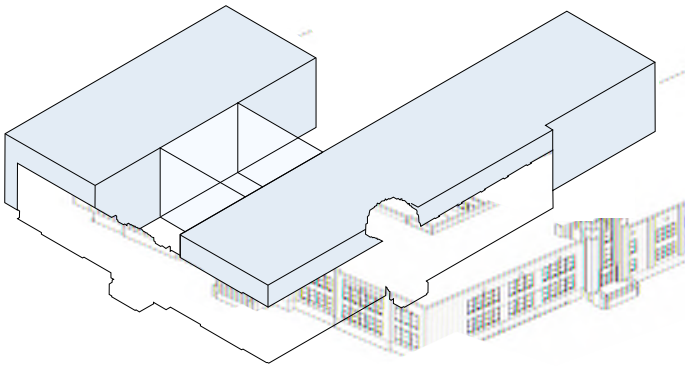
Disadvantages:

- Requires the demolition of the majority of Martin Williamson Hall.
- Lost embodied carbon in the demolition of the existing structural systems and building envelope.
- Requires temporary support to preserve the historic facades during construction and demolition.

Demolished Area Shown in Green



New Space Shown in Blue



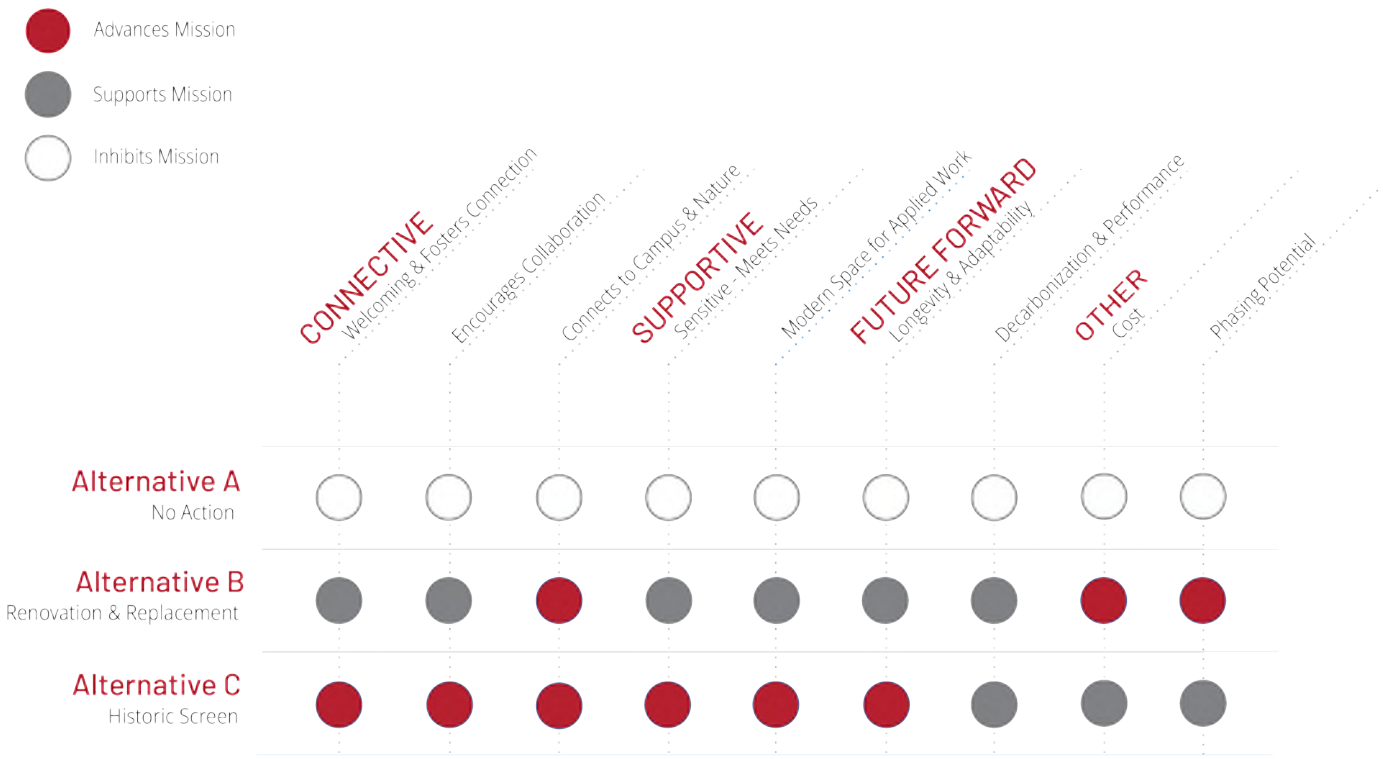
KEY

- Demolished Space
- New Space
- Existing Space

3.1.4 PREFERRED ALTERNATIVE & WHY

Alternative C: Historic Screen has been designated as the preferred option by the Pre-design Committee. This approach aligns most closely with EWU's institutional strategic goals, while effectively addressing the project Guiding Principles and meeting the diverse needs of the academic and student service programs.

The matrix provided below served as a valuable tool for the Pre-design Committee, facilitating interactive discussions and comparative analysis of the alternatives against the established Guiding Principles and other pertinent factors. Notably, Alternative C: Historic Screen emerged as the standout choice across most categories, affirming its status as the preferred alternative for the project.



3.2 COST ESTIMATE FOR EACH ALTERNATIVE

3.2.1 ESTIMATE OVERVIEW

Cost Estimates were performed for each of the two new construction options. All of the options used the same general assumptions including the delivery type, construction materials, and building systems. The estimates also used the same program areas and assignable square footages. The differences in cost reflect the variations in overall building efficiency and the different amounts of building envelope required by each layout option.

			Preferred Option
	Ownership Option 1	Ownership Option 2	Ownership Option 3
	No action	Reno & Replace	Historic Screen
ASF	49,275	87,062	87,062
GSF	91,500	133,000	124,375
Efficiency	54%	65%	70%
Construction MACC	0	83,938,751	90,603,907
Unescalated Project Cost	**0**	**122,605,913**	**133,044,991**

3.2.2 LCCM

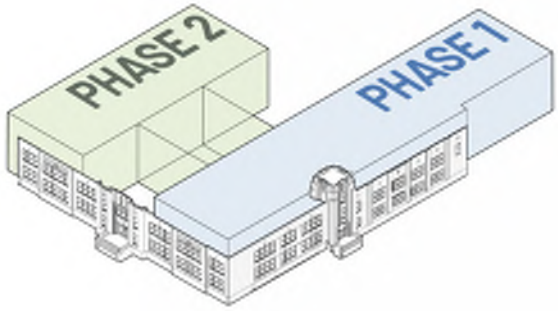
Each of the construction alternatives were analyzed using the Office of Financial Management (OFM) Life Cycle Cost Model (LCCM). The No Action alternative was not studied as it will not meet the university's needs as outlined above. As part of the analysis, energy modeling was performed to understand the energy efficiency of each layout along with the programmatic efficiency.

			Prefered Option
	Ownership Option 1	Ownership Option 2	Ownership Option 3
	No action	Reno & Replace	Historic Screen
Construction MACC	$0	$83,938,751	$90,603,907
Unescalated Total Project Cost	$0	$122,605,913	$133,044,991
Annual Energy Cost	$79,605	$89,110	$58,456
30 Year Net Present Value	$105,789,331	$201,722,945	$210,065,797
50 Year Net Present Value	$168,770,287	$291,065,004	$294,931,694
LCCM Ranking	**1**	**2**	**3**

3.3 SCHEDULE ESTIMATE

Alternates B and C would have the same anticipated project schedule as outlined below. A full milestone schedule is included in Section 4.

Project Phase	Date of Completion
Predesign	June-24
Schematic Design	April-26
Design Development	November-26
Construction Documents	June-27
Phase 1 - Bid/ Award/ Contracting	July-27
Phase 1 - Construction Start	August-27
Phase 1 - Construction Mid Point	June-28
Phase 1 - Substantial Completion	May-29
Phase 1 - Final Completion	June-29
Phase 2 - Bid/ Award/ Contracting	July-29
Phase 2 - Construction Start	August-29
Phase 2 - Construction Mid Point	June-30
Phase 2 - Substantial Completion	May-31
Phase 2 - Final Completion	June-31



Phasing Diagram

SECTION 4

DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

4.0 DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

4.1 DESCRIPTION OF PREFERRED ALTERNATIVE

The following offers a detailed analysis of the preferred alternative regarding nature of space, occupancy numbers, basic configuration, and space needs.

4.1.1 NATURE OF SPACE

Martin Williamson Hall will support four distinct entities for EWU, including two academic departments and two student support services programs. The entities to be housed in the building are the School of Education, School of Psychology, Counseling and Wellness Services, and Student Accommodations and Support Services. To support these four separate entities, the building will require a diverse array of counseling, assessment, instructional, research, administrative, office, storage, and student space.

School of Education

The School of Education prepares student-centered educators to be professionals, leaders, scholars, and practitioners to support the rural communities of the region.

- Center for Rural Education Effectiveness - NEW: EWU is in the planning stage of becoming a rural education hub which includes devoted space for education and technology to reach remote districts. (Aligns with RCW 28B.10.033.1.b.i)
- Continuing Education Programs: To maintain certification, educators are required to complete continuing education credits throughout their career. EWU offers Professional and Continuing Education opportunities for either professional development or personal enrichment through clock hours, professional certifications, and continuing education units.
- Field Experience: Coordinates school-based field experiences and full-time student teaching internship placements for all teacher candidates in the EWU School of Education.

To attract teaching candidates in these high-need areas, EWU must fulfill the Professional Educators Standards Board Domain 7, which states that "Providers ensure that programs have adequate resources, facilities, and governance structures to enable effective administration and fiscal sustainability." Specifically, 7.3 addresses three components of adequate facilities which include having necessary classrooms, lab and office spaces, and current technology.

School of Psychology

The School of Psychology offers programs that are critical and necessary for the region, serving to address shortages in mental health and school service provision, and providing important applied research. EWU's graduate and undergraduate programs directly support and provide a pipeline to support these three regional areas of need. In addition to academic offerings, existing and emerging curricular initiatives include the following:

- Autism Drop-In Center: Resource for students identified with autism spectrum disorder.
- Training Clinic - NEW: Providing effective and affordable mental health services to the community and a site to train doctoral students in clinical psychology programs.
- Assessment Program: To support the evaluation, identification, and documentation needs of students with suspected learning disabilities, neurocognitive disorders, and ADHD.
- Sports Psychology Services

Currently Martin Williamson Hall is a barrier to effective education and learning for the School of Education and School of Psychology. Reconfigured spaces equipped with modern infrastructure systems and technology will make it possible for the programs to not only attract more students but offer improved learning outcomes and ultimately better educational outcomes to support regional needs in educators and mental health professionals.

Counseling & Wellness Services

Counseling & Wellness Services provides EWU students with an array of initiatives that support their mental, emotional, and physical wellbeing. Below is a condensed list of some of the existing and emerging offerings:

- Eagles for Recovery: A collegiate program for EWU students who are in recovery, thinking about recovery, and those who want to participate as recovery allies. The program provides support and help navigating recovery while being a student at EWU.
- "Let's Talk" Events - NEW: Counselors meet students where they are to offer no barrier consultations. Two that are a high priority for the counseling center include the Veteran's Resource Center and CAMP (College Assistance Migrant Program) which serve students that underutilize counseling services.
- H.E.A.R.T Workshops (Healing, Encouraging, and Rising Together) - NEW: A workshop series tailored for students of color who are looking for a supportive, inclusive, and safe space to discuss daily stressors and lived experiences.
- Food Pantry: This year the Food Pantry has seen an 8% increase, serving 615 students each month.
- TREE (Trauma Recovery Education at Eastern): Provides planned university response for unexpected tragic events that gives structure, information, and a space to acknowledge what happened. Offering students, faculty, and staff a resource to turn to when they are feeling overwhelmed after an event.
- Basic Needs Office Hours & Resource Center
- Mental Health First Aid Courses
- Sexual Health Education and Disease Prevention & Resources

Over the course of the 2022-2023 regular academic year, the Counseling office had 2,134 attended appointments, which averages 711 appointments each quarter that does not include no-shows or canceled appointments. Thus far in 2024, counselors have helped 115 students assessed as being at academic risk, have held 113 outreach events, and have held appointments with 77 clients assessed as having some level of suicidal risk.

Example of C&WS Campus Outreach Events

According to the American Foundation of Suicide Prevention suicide is the second leading cause of death for ages 10-24 in Washington state. According to federal guidelines 83% of communities in Washington did not have enough mental health providers to serve residents in 2023. These are staggering statistics that demonstrate how crucial it is to improve access to mental health services for students enrolled in postsecondary institutions.

Student Accommodations & Support Services

Student Accommodations & Support Services is a combination of the Student Care Team and Disability Support Services that serves students who may be struggling with personal challenges and/or obstacles.

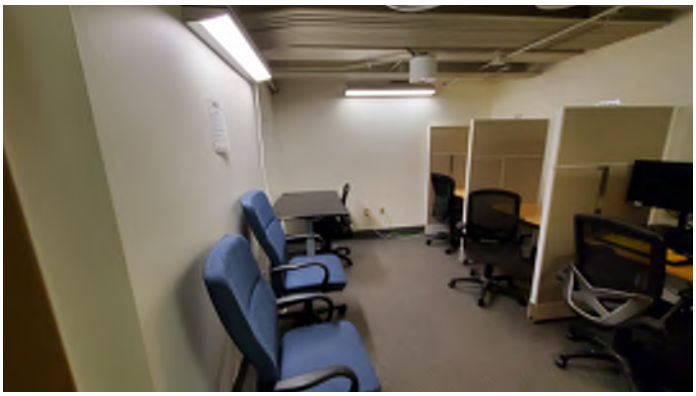
- Student Emergency Fund (SEF): Provides limited, one-time, financial assistance to students unable to meet immediate, essential expenses because of temporary emergencies.
- Passport to Careers Program: Helps former foster youth and unaccompanied homeless youth succeed in college by connecting them to resources, peer mentoring, study space, peer counseling, assistance with FAFSA, communication with faculty, transitioning to the college environment, and support while living on campus.
- Assistive and Adaptive Technology
- Proctored Testing Accommodations
- Medical Accommodations
- Religious Accommodations

Over the last 5 years, SASS has averaged a 147% increase in cases per year. In the 2022-2023 academic year, Support Services managed 1205 cases requiring wrap-around care and proctored 250 exams. Accommodations staff averages serving 750 students per term. In the last year, the Passport to Careers Program has increased enrollment by 150%.

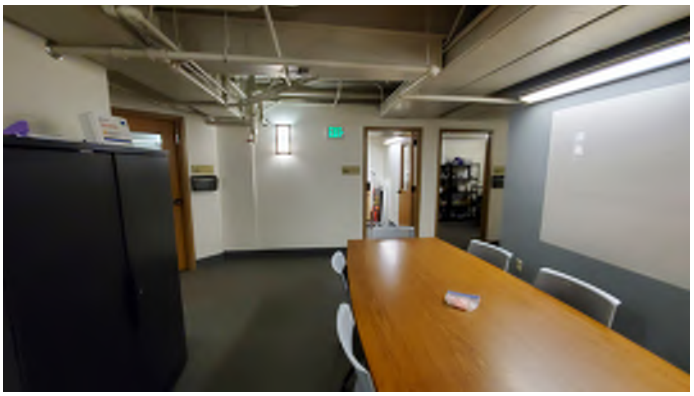
In the 2022-2023 academic year, Washington State legislature made significant investment in student success initiatives at EWU to help ensure that students achieve degree completion. Over the last several years EWU has implemented a total intake model for academic advising and developed a coordinated care network that is designed to:

1. Maximize collaboration of various student support services.
2. Create wraparound care that helps students navigate and overcome social, financial, and/or health obstacles that delay or prevent the successful completion of their degree.
3. Provide holistic care that helps meet the challenge of increasing mental health concerns on college campuses.

Existing SASS Waiting Room



Existing SASS Testing Room



Existing SASS Meeting Space

Currently student support services are spread across multiple buildings on campus and in locations with low visibility and lacking direct access. Collocating Counseling and Wellness Services and Student Accommodations and Support Services will improve collaboration of the various student support services and create a central and convenient location for students to get wrap-around support.

4.1.2 OCCUPANCY NUMBERS

Martin Williamson Hall will be the primary building for two of five programs in the College of Professional Programs: the School of Education and the School of Psychology. The building will supports all students, faculty, and staff in the School of Education and School of Psychology through use of its instructional labs, classrooms, student spaces, offices, administratives spaces, and more.

Martin Williamson Hall will also house two of EWU's largest student services programs. Counseling and Wellness Services currently averages 711 appointments each quarter, a number that continues to increase each year. Student Accomodations and Support Services managed 1205 cases last year, proctored 250 exams, and assists an average of 750 students with accomodations each term - all numbers anticipacted to continue increasing.

4.1.3 PROGRAM SPACE NEEDS

The building gross square footage is 124,375 gross square feet with a net assignable area of 87,062 square feet. The following is a breakdown of the assignable building areas:
The program space list on the following pages contains a comprehensive breakdown of each space and its associated square footage. The quantities, areas, and supporting information therein were developed through a collaborative process including representatives from the departments and programs to be housed in the building and campus leadership in sustainability, planning, academics, and finance.

Department	Proposed SF
1.0 Psychology	13,305
2.0 Education	12,300
3.0 Counseling & Wellness Services	8,515
4.0 Student Accomodations & Support Services	4,860
5.0 Shared	33,825
6.0 Building Operations	14,257
Assignable Building Area (ASF)	**87,062**
Efficiency Factor 70%	**37,312**
Gross Building Area (GSF)	**124,375**
Existing Martin Williamson Gross Area	**91,500**

EWU Martin Williamson Predesign
DATE: May 14, 2024

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
SCHOOL OF PSYCHOLOGY (PSYCH)					
	RESEARCH & INSTRUCTIONAL LAB				
1.1	Research Suite - 6 pod	varies	1	800	800
1.2	Research Suite - 4 pod	varies	1	530	530
1.3	Research Lab	2	8	120	960
1.5	Play Therapy / Group Therapy / Autism Center	20	1	600	600
1.7	Research Assistant Area	6	1	200	200
	Subtotal				**3,090**
	TRAINING CLINIC				
1.9	Reception	1	1	180	180
1.10	Waiting Area	10	1	300	300
1.4	Observation Suite	varies	5	420	2,100
1.12	Group Room	20	1	620	620
1.13	Work Area	4	1	240	240
1.14	Toilet Room	1	1	85	85
1.15	Storage	-	1	200	200
	Subtotal				**3,725**
	OFFICE & ADMINISTRATION				
1.16	Main Office Entry	1	1	250	250
7.2	Offices - Chair/Director	1	5	200	1,000
7.1	Offices	1	35	120	4,200
7.3	Quarterly Faculty/Adjunct	2	1	120	120
1.21	Office - Psi Chi	2	1	120	120
5.14 / 5.15	Break / Work Room	-	1	400	400
1.22	Storage - Testing	-	1	400	400
	Subtotal				**6,490**
	Subtotal				**13,305**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
SCHOOL OF EDUCATION (ED)					
	INSTRUCTIONAL LAB				
2.1	Science Education Lab	24	2	1,200	2,400
2.2	Literacy Library Lab	25	1	1,200	1,200
2.6	Sci Ed Prep & Storage	-	1	250	250
	Subtotal				**3,850**
	FIELD EXPERIENCE PROGRAM				
7.1	Offices	1	4	120	480
2.8	Open Workstations	8	1	360	360
	Subtotal				**840**
	OFFICE & ADMINISTRATION				
2.14	Main Office Entry	1	1	200	200
7.2	Offices - Chair/Director	1	1	200	200
7.1	Offices	1	41	120	4,920
7.3	Quarterly Faculty/Adjunct	2	1	120	120
2.12	Clothing Closet	-	1	500	500
5.13	Meeting Room	8	1	250	250
5.14	Break Room	16	1	560	560
5.15	Work Room	3	1	460	460
2.13	Storage	-	1	400	400
	Subtotal				**7,610**
	Subtotal				**12,300**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
COUNSELING & WELLNESS SERVICES (C&WS)					
	COUNSELING				
3.1	Counseling Reception	2	1	600	580
3.2	Counseling Waiting Area	8	1	320	320
3.3	Group Room	12	2	550	1,100
7.4	Offices - Counselor	2	9	200	1,800
3.5	Trainee Room	3	3	145	435
3.6	Work Area - Trainee	3	1	240	240
3.7	Bio Feedback Room	2	1	200	200
3.8	Quiet Room	1	1	100	100
3.9	Zoom Room	1	1	100	100
3.10	Library	-	1	100	100
3.11	Storage - Controlled	-	1	150	150
	Subtotal				**5,125**
	WELLNESS				
7.2	Offices - Director	-	1	200	200
7.1	Offices	-	4	120	480
3.14	Storage		1	560	560
	Subtotal				**1,240**
	EAGLES FOR RECOVERY PROGRAM				
3.15	Student Lounge	16	1	650	650
3.16	Office - Coach	1	1	200	200
3.17	Peer Health Educators	6	1	500	500
	Subtotal				**1,350**
	SHARED SUPPORT				
3.18	Toilet Room	1	1	80	80
3.19	Work Room	3	1	360	360
3.2	Break Room	12	1	360	360
	Subtotal				**800**
	Subtotal				**8,515**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
STUDENT ACCOMODATIONS & SUPPORT SERVICES (SASS)					
4.1	Reception & Waiting Area	4	1	400	400
4.2	Student Group Space / Living Room	20	1	800	800
7.4	Offices - Counselor	1	8	200	1,600
7.1	Offices	1	8	120	960
4.5	Testing Room	8	1	400	400
4.6	Testing Room - Individual	1	2	100	200
4.7	Storage	-	1	300	300
4.8	Student Break Area	-	1	200	200
	Subtotal				**4,860**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
SHARED SPACES					
5.1	Commons / Atrium	varies	1	1,600	1,600
5.18	Collaboration Hub - 1st Floor	varies	1	2,000	2,000
5.19	Collaboration Hub - 2nd Floor	varies	1	2,000	2,000
5.2	Collaboration Hub - 3rd Floor	varies	1	2,000	2,000
5.3	Breakout Space	8	3	200	600
5.5	Lecture Hall	240	1	5,000	5,000
5.6	Lecture Hall	80	2	1,600	3,200
5.16	Classroom	60	4	2,040	8,160
5.2	Multi-Use Classroom	40	1	1,350	1,350
5.7	Classroom	25	4	1,100	4,400
5.10	Seminar Room	24	2	720	1,440
5.17	Seminar Room	16	1	500	500
5.11	Meeting Room	40	1	1,575	1,575
	Subtotal				**33,825**

SPACE ID	SPACE TITLE	OCCUPANTS	QUANTITY	SQUARE FEET	TOTAL NET SQUARE FEET
BUILDING OPERATIONS					
6.1	Inclusive Restroom	-	5	800	4,000
6.2	Single User Restroom	1	4	150	600
6.3	Shower Room	1	1	150	150
6.4	New Mother's Room	1	1	100	100
6.5	Mail Room	-	1	150	150
6.6	Custodial - Large	-	2	250	500
6.6	Custodial - Small	-	2	120	240
6.7	Mechanical Room	-	1	6,917	6,917
6.8	Electrical Room	-	5	200	1,000
6.9	Telecom Room	-	5	120	600
	Subtotal				**14,257**

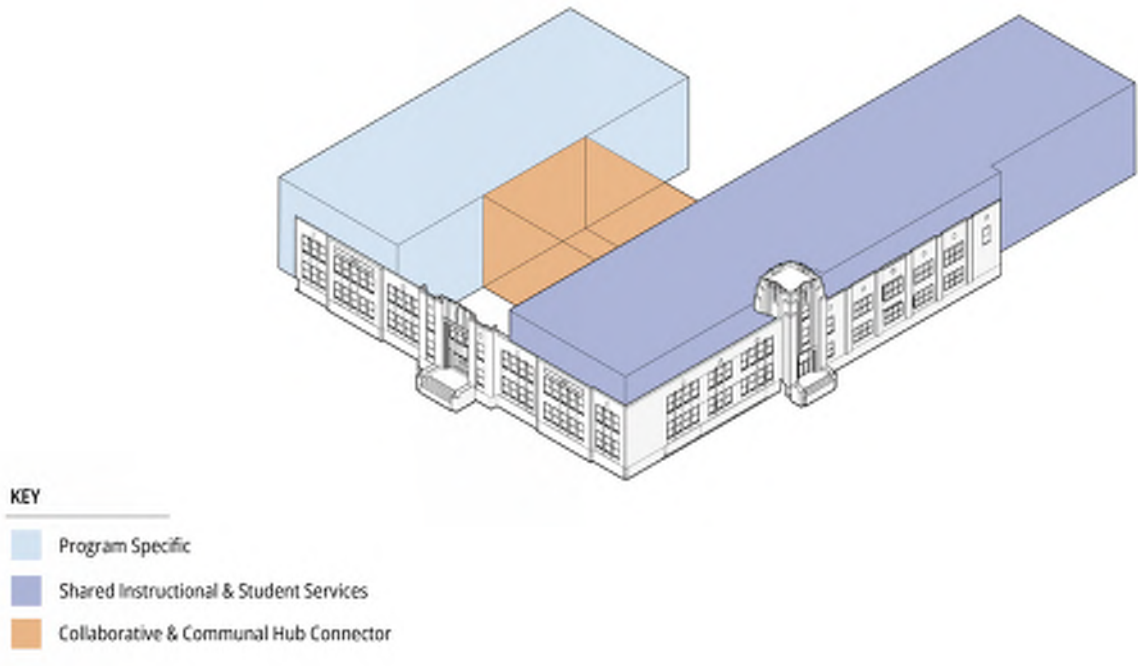
4.1.4 BUILDING CONFIGURATION

Martin Williamson Hall is conceived as a thoughtful and intensive renovation project, carefully integrating new elements while preserving the historic character of the northeast and southeast facades from its 1935 origins. Behind this historic screen, the project will introduce three new components: two bars and a central hub. These additions, designed as three-story structures using a combination of steel and mass timber, are strategically planned to meet the project's functional requirements and aspirational goals while celebrating a piece of EWU's campus architectural heritage.

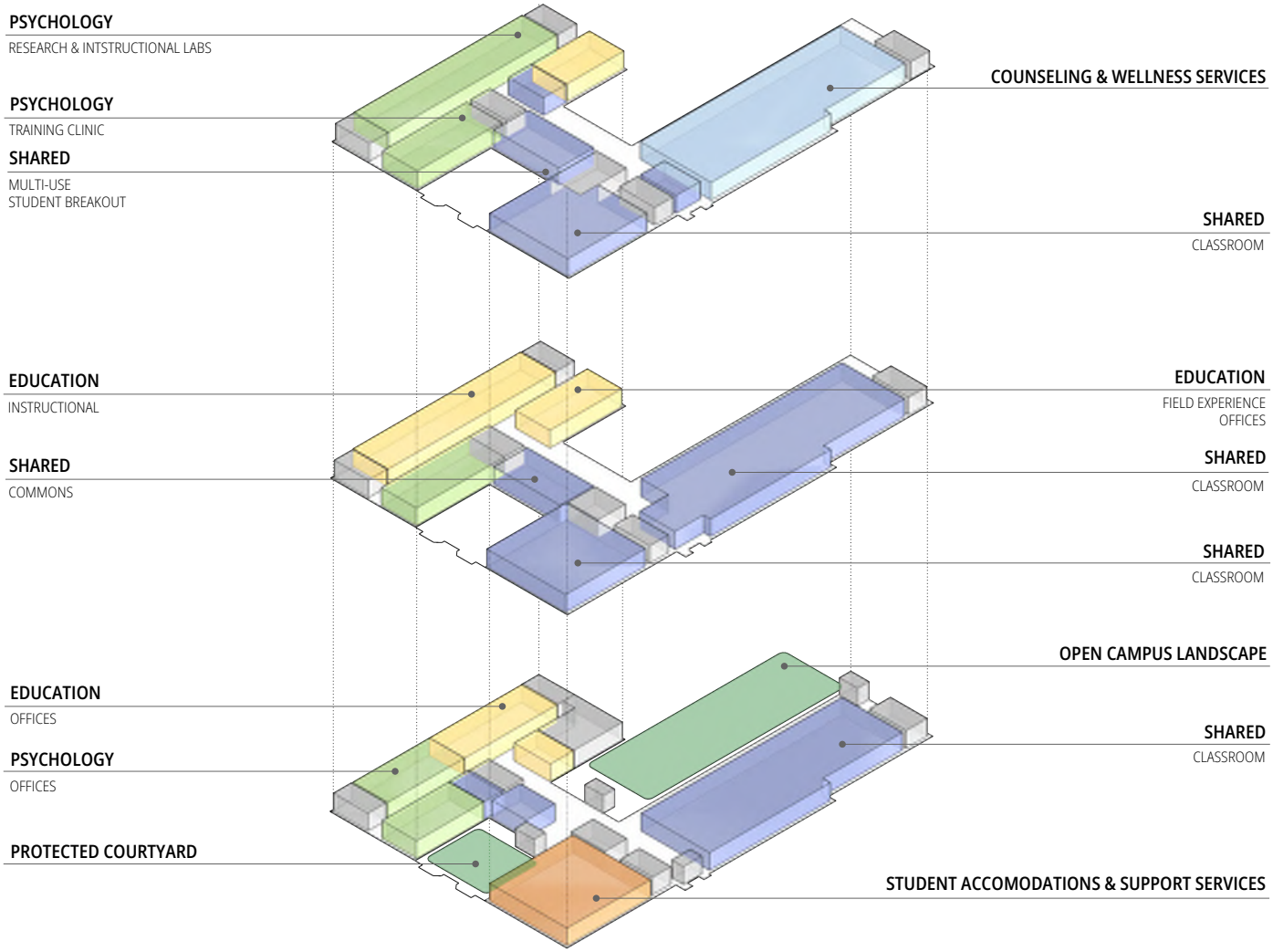
The first bar, closest to the campus core, will contain student support services and shared instructional spaces. This layout will improve circulation within the building and reduce disruptions near department-specific instructional labs and offices. Student Accommodations and Support Services are conveniently located on the first level for easy access, encouraging student engagement, and to reduce stigma around accessing these resources by making them convenient and welcoming. Shared instructional spaces are spread across the first and second levels. Counseling and Wellness Services are placed on the third level to maintain a prominent central campus location while providing students with privacy when seeking support for sensitive matters.

The second bar to the south will contain department-specific instructional labs, offices, administrative areas, and the new training clinic. With lower foot traffic, it aims to minimize disruptions to hands-on learning in the labs and promote interaction between the Department of Education and Department of Psychology through collocation of office neighborhoods.

The two bars converge at a central hub of shared meeting and student-centered spaces, providing a venue for collaboration among departments, faculty, and students. This central area will include Student Breakout spaces, a versatile Commons for open student use and departmental events, and flexible meeting spaces. In addition to facilitating connections between people, this hub provides easy access to two outdoor areas that act as an extension of the communal space within: a protected courtyard and an open campus landscape.



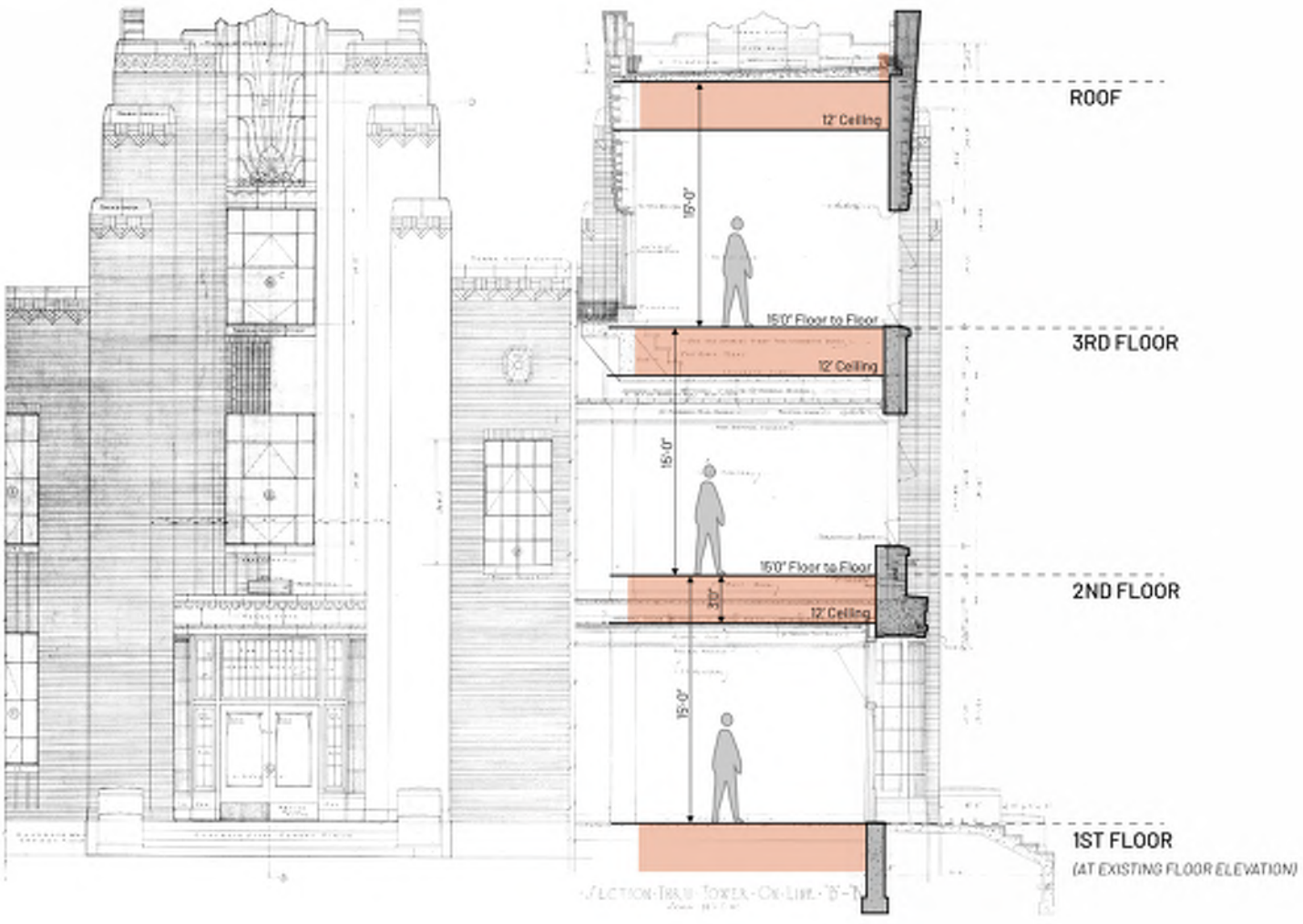
Program Overview



Program Axonometric

The original 1935 Martin Hall was built as a two-story structure with a low 13'-6" floor-to-floor height. The project will introduce new three-story components with a higher 15'-0" floor to floor height to accommodate modern building infrastructure.

These new three-story volumes will intersect the historic screen on the northeast and southeast facades.
These intersections will be carefully crafted to ensure the historic character is preserved while maintaining the functionality within the building.



Section through Tower

4.2 SITE ANALYSIS

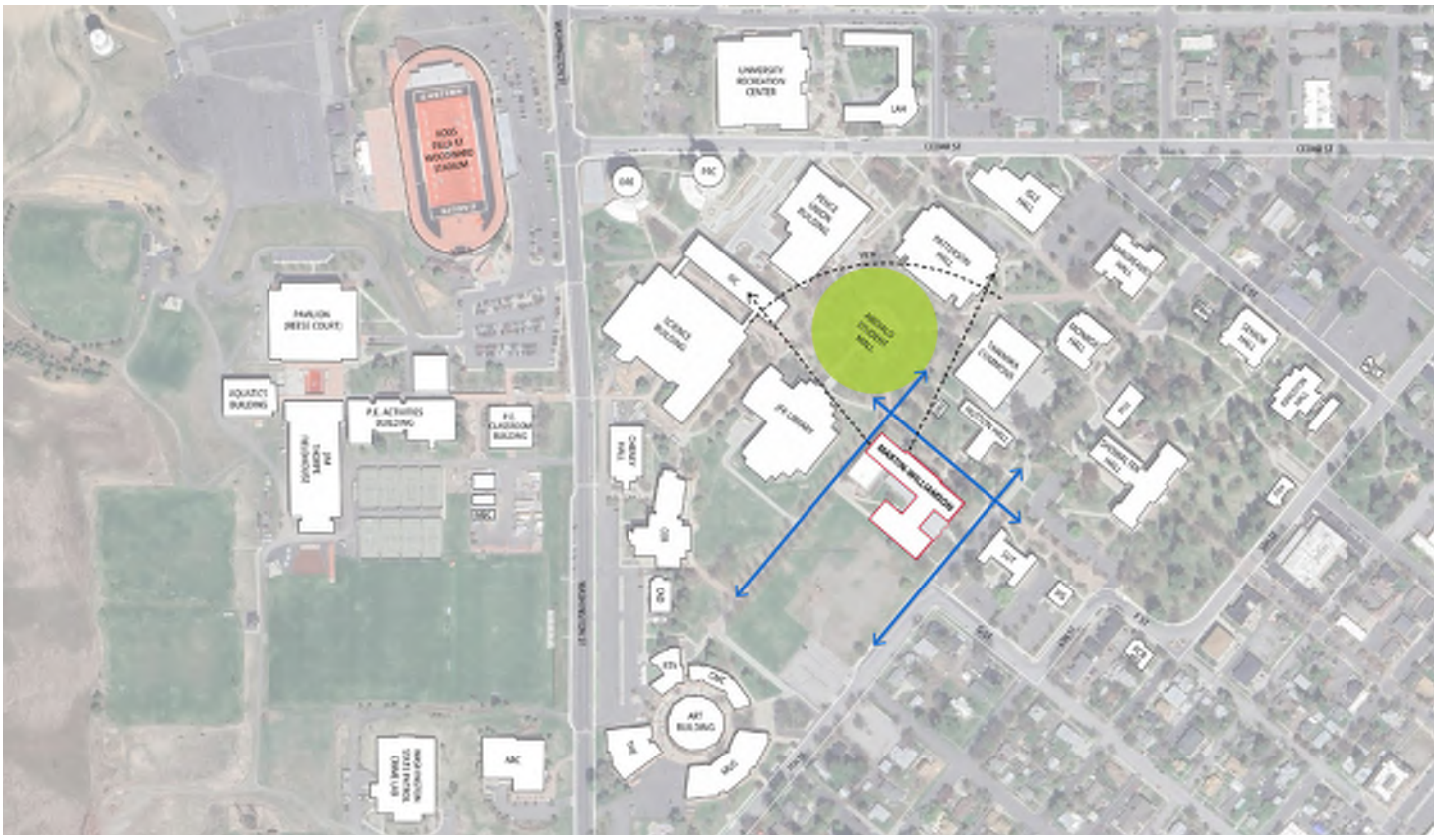
The following offers a detailed analysis of the project site.

4.2.1 LOCATION

The proposed site, and only location considered for the project, was the existing location of Martin Williamson Hall. Its present location is not only steeped in historical significance, which EWU is committed to preserving, but is also strategically situated near the center of campus. This central position enhances accessibility to the various student services programs housed within for the broader EWU community. Additionally, its proximity to the historic One Room School House fosters a meaningful connection between the Department of Education and EWU's beginnings in 1890 as the first institution in Washington for teacher instruction.

Arevalo Student Mall

One Room School House



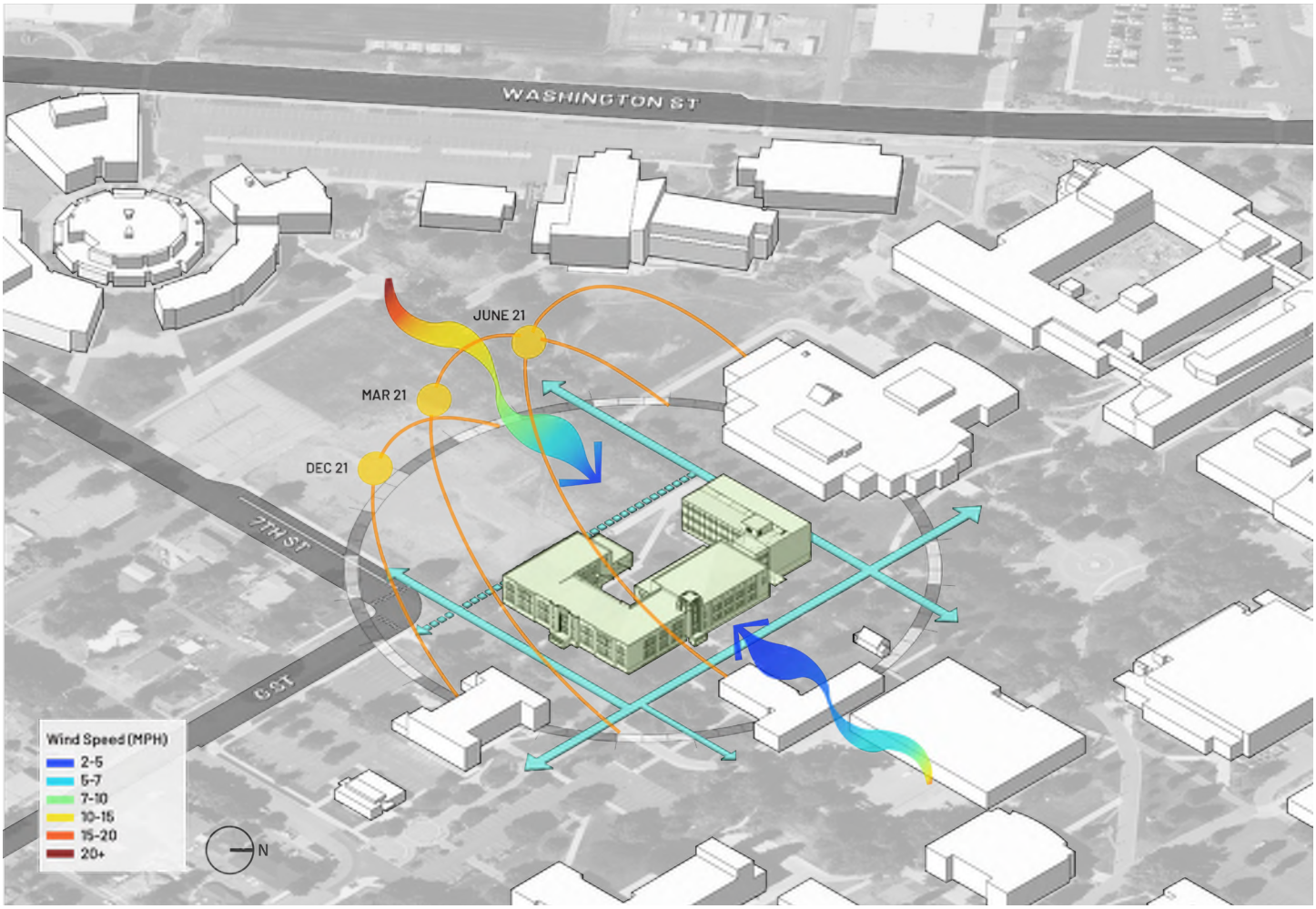
Campus Context Site Map

4.2.2 SITE STUDIES

The university is in the process of procuring the following site studies, which are scheduled to be completed during the Schematic Design phase:

- Environmental Survey Assessment
- Site Topographical & Utility Survey
- Geo Technical Survey
- Traffic Impact Survey

Cheney, Washington, experiences a diverse range of weather throughout the year and features an average of 220-250 days of sun with strong prevailing winds coming from the west and southwest primarily. The existing site has excellent solar access to the south for the proposed photovoltaic system. The building and landscape features will be designed to help shelter entries and outdoor space from inclement weather and wind.



Solar & Wind Study of Existing Martin Williamson

4.2.3 BUILDING AND SITE RELATIONSHIP

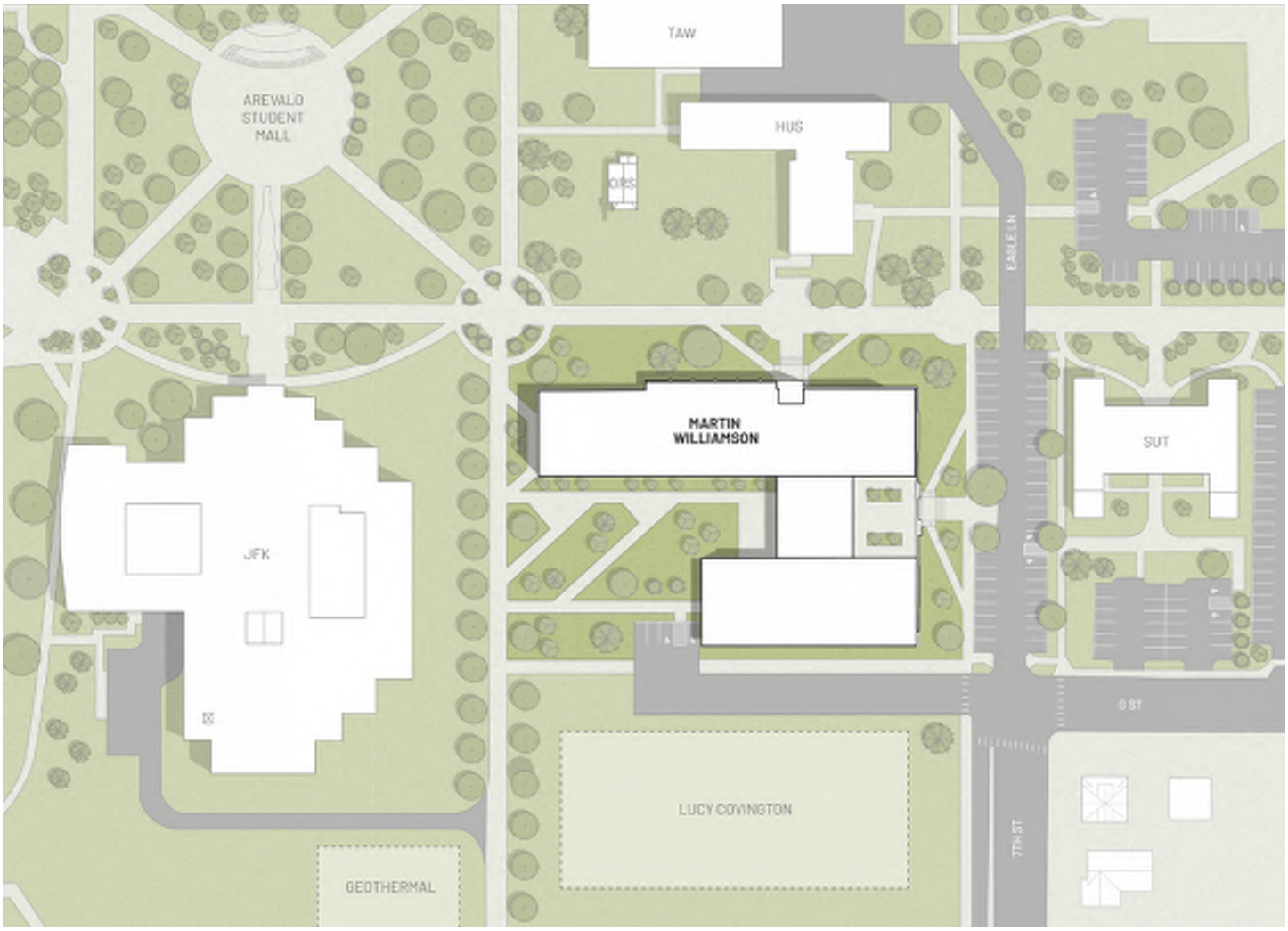
The proposed renovation of Martin Williamson Hall improves key site relationships while retaining significant historical features of Martin Hall.

Preserved Existing Relationships:

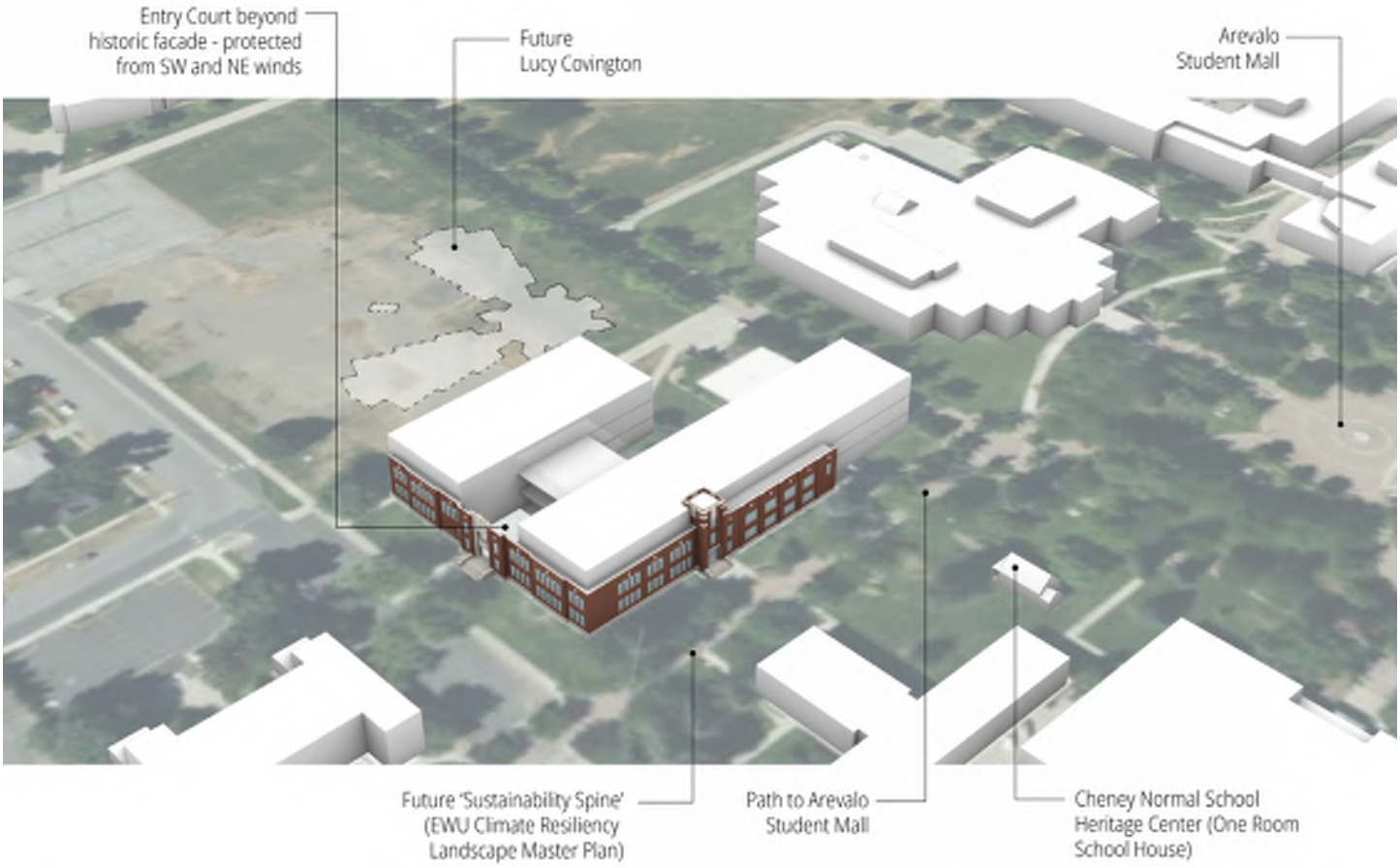
- The renovation retains the historic presence and connection to the central campus mall.
- This location retains the proximity and visual connection between the Department of Education and the historic One Room School House.
- The renovation retains two prominent ornate historic Martin Hall entries at the northeast and southeast facades.

New Site Relationships:

- The renovation improves the sense of entry and welcome at the prominent northwest building corner addressing the central campus mall.
- Safety and security in landscape and outdoor spaces is improved through a more open and visible connection to outdoor spaces.
- The preferred alternative offers a new outdoor experience through a courtyard at the southeast historic entry that is protected from the prevailing winds and harsh solar exposure during warm weather months.
- The renovation improves visibility to and from campus core toward the south which welcomes and draws activity to the campus core.



Proposed Site Plan



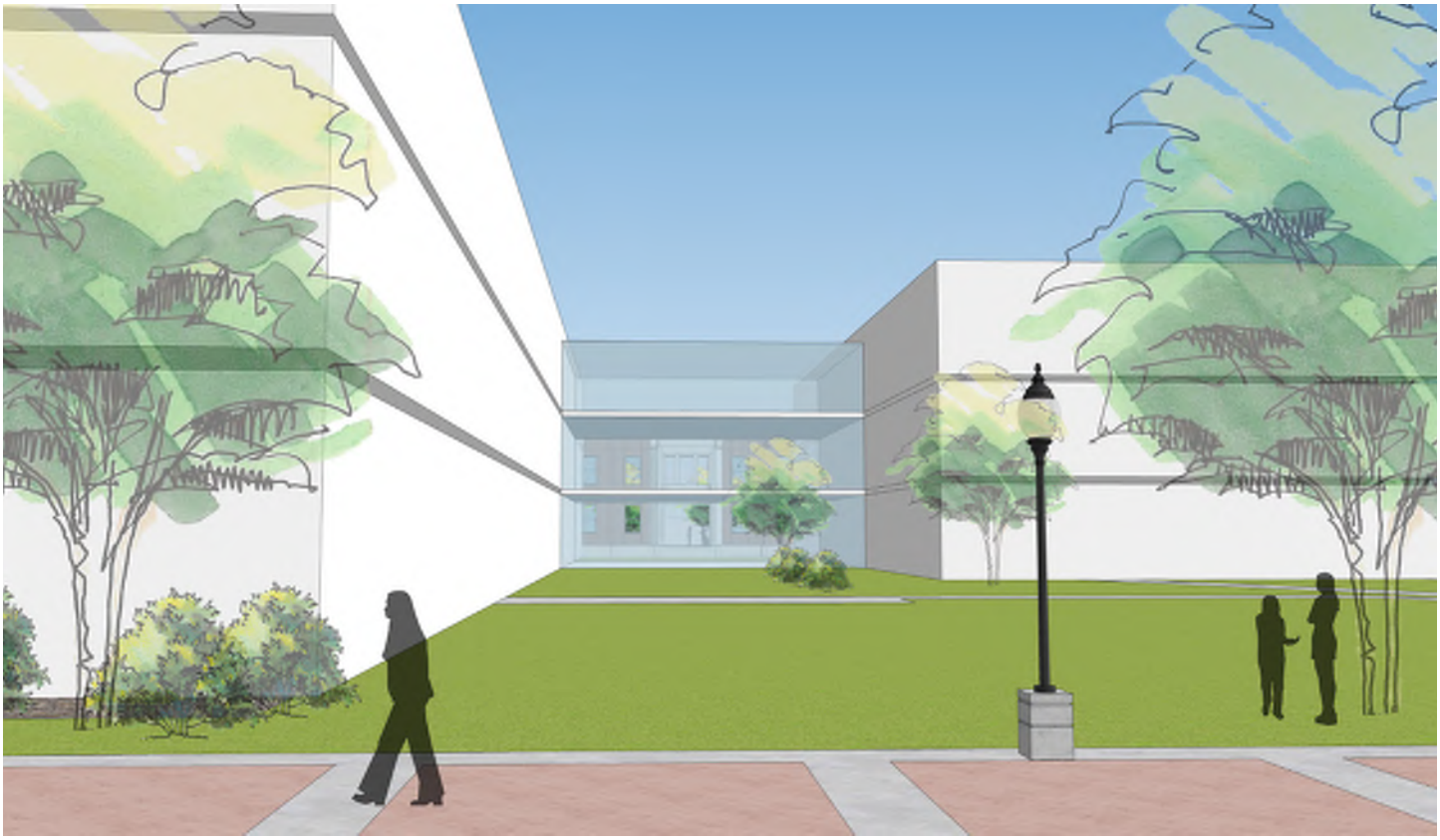
Massing Diagram

Northeast Corner - Approach from Visitor Center

Northwest Corner - Approach from Student Mall

Southwest Corner - Approach from Computing & Engineering Building

Southeast Corner - Approach from Parking



Campus Courtyard - View Through Glass Gasket

Entry Courtyard - View Through Historic Facade

4.2.4 WATER RIGHTS AND AVAILABILITY

The buildings are within the EWU campus and are served by the University's private water system. Eastern Washington University (EWU) provides drinking water from two drilled wells, both of which draw from a groundwater aquifer. Well 1R is located in the Plant Utilities building and can pump up to 450 gallons per minute at a depth of 834 feet. Well 2R produces 900 gallons per minute at a depth of 1145 feet. Chlorination of the campus water supply began in 2010. Since 2016, water from both wells has been routed through a new chlorine building for treatment before being distributed throughout campus via the tower. To ensure the safety of your tap water, backflow assemblies are installed through the campus to protect our water system. Two Cross Connection Control Specialists and three Backflow Assembly Testers, employed by the university, conduct tests on all assemblies annually and perform any necessary repairs or replacements. A report is submitted to the Department of Health each year.

EWU's water meets or exceeds all standards set for quality and safety and is committed to providing safe, high-quality water. EWU's annual drinking water report can be found at https://inside.ewu.edu/facilities/water/.

Extension of campus water mains is not expected, new connections or reconnection to existing campus infrastructure will provide fire and domestic water to the new building.

With the use of modern, low flow plumbing fixtures in the new buildings, a reduction in water use may be expected.

Sanitary sewer connections from the building will be to campus sewer mains, replacing the existing connections.

4.2.5 STORM WATER REQUIREMENTS

The University is within the City of Cheney, which uses the Spokane Regional Stormwater Manual, currently the April 2008 edition, to guide stormwater design. Given the age of these buildings predating any formal storm water design standards, the reconstruction within the approximate footprint, and to the same amount (or less) of impervious area, no extraordinary measures are expected to be needed for mitigation. A detention or infiltration system should not be required, see below for a discussion of water collection and reuse.

If new and replaced pollution generating surfaces (typically motor vehicle drives and parking) exceeding 5,000-sf are created as part of this project, a water quality system will be needed to treat the water before it's discharged to the campus storm water system.
The campus has an initiative to collect water from roof areas in winter and store it in cisterns to be use in summer months for irrigation. If desired, a cistern could be constructed under part of the proposed pedestrian plaza at the building. This is not a required program but has been implemented in other recent campus projects.

To obtain LEED storm water points, the project would need to infiltrate or reuse (irrigation) most of the surface water collected from precipitation.

4.2.6 SITE OWNERSHIP, EASEMENTS AND ACQUISITION

The project site is on the Eastern Washington University campus utilizing the existing site. There would be no change of ownership, acquisition, or easements needed.

4.2.7 SETBACK REQUIREMENTS

The project site is totally within the existing campus, it has no frontage on public streets. With the preservation of the historic façade, no effect on setbacks is expected. To the west and south, where new building façades will be constructed, adjacency to campus walks and drives should be reviewed for visibility of pedestrians and drivers.

4.2.8 NEIGHBORHOOD ISSUES (CONSTRUCTION RELATED)

The site is within the Campus and should not directly affect off campus neighbors. If the old Reid school site is used for a construction yard, the opposite side of 7th St. is a residential neighborhood. The potential for temporary disruption, noise, dust, extra vehicular trips, and deliveries is possible. Location of the construction activity to the west and north ends of this lot will help separate the residents from the temporary disturbance.

4.2.9 NEIGHBORHOOD ISSUES (LONG TERM)

When the project is complete, the use will not change, the building will remain an education and administration facility for the university. Vehicular and pedestrian traffic patterns, rates and frequency should remain similar to current conditions.

4.2.10 UTILITY CONNECTIONS

Buried campus owned primary power lines traverse the western boundary and central core of the site. The central core existing lines appear to be in conflict with the planned location of the building. Buried primary service lines will be relocated and extended from the existing campus infrastructure for new services to the building. An existing pad mounted line switch is located in the middle of the site and will require coordination with site landscape to protect in place.

Buried campus communications lines traverse the western boundary and central core of the site. The central core existing active lines appear to be in conflict with the planned location of the building. Buried comm service lines will be relocated and extended from the existing campus infrastructure for services to the building.

All existing utilities to the campus mains are expected to be re-connected, Water, sewer, storm are in individual buried pipe mains under the streets and walks around the site. Reconnection to existing points of service is expected.
A Campus utility tunnel is located west of Williamson, under the drive between this site and the JFK library. These campus utility tunnels usually contain power, communications, steam, and chilled water. All likely have connection from this tunnel to at least the Williamson Building, and likely to both buildings. Reconnection of the new building to these services would be expected from the campus mains in the existing tunnel.

The campus has a central chilled water plant and central steam plant that distributes chilled water, steam, and steam condensate to the buildings on campus through an underground tunnel system.

The campus tunnel system traverses east-to-west immediately northwest of the proposed Lucy Covington project site and should be protected in place. Chilled water will be provided to the building via an extension to the existing tunnel system to the new building. New dedicated 6"Ø chilled water supply and return piping will be routed through the tunnel to the new building.

The building heating and domestic hot water will be provided by a connection to a new campus low temperature heating water (LTHW) system, which will operate at 120°F. The LTHW will be generated by a new open-source ground coupled heat pump heating plant. The plant is being planned as a separate project. Dedicated 6"Ø low temperature hot water piping will be routed to this building via an extension of the tunnel system or utilizing direct buried, insulated, jacketed, and fusion-welded high temperature HDPE SDR-11 pipe.

Site Paving:
Site paving will consist of asphalt and concrete per university standards. Paving will be for new/replaced walks and drives around the new building and to patch utility trenches., in-kind matching existing surfaces.

Asphalt for restored parking areas and new loading/utility yard, assume 6-in of ½-in HMA over 6-in Crushed base.

Concrete walks and plazas around the buildings, 6-in w/ reinforcing. Where needed for fire lane, 8-in thick pavement.

At University direction, some areas of new/replaced paving will have snow melt tubing and connection to campus or building boilers for heat.

Fire Truck Access:
Fire truck access can be provided off the parking lot on the east side, at Eagle Lane and from 7th Street. Per a campus fire improvement study from 2007, the walks to the north and west are scheduled to be widened to 20-ft accommodating fire trucks. There are 4 existing fire hydrants within a 300-foot radius of the proposed building. These hydrants are near the corners of the complex.

Water Supply:
Water mains: Existing Campus water mains are to the west, north and east faces of the buildings, No relocation or extension of existing mains is expected due to this construction.

A single combined fire and domestic water service will be provided to the building from the University system water line. Analysis from the plumbing and fire design will be required to determine the size of the services for the new building.

Water Meter: An in-building water meter will be provided to measure the domestic water use in the new building for the purpose of; reporting trends in building systems consumption required by WA State law, reporting of meeting LEED criteria.

Sanitary Sewer:
All floors of the addition m should be able to discharge waste by gravity to the campus sanitary sewer system located off the south edge of the site. At least one new 6-in connection to this system is anticipated, reuse of existing side sewers may be possible, depending on condition and location relative to the new facility.

Stormwater Treatment and Disposal:
The University's stormwater system drains to the City of Cheney's public storm system. Development of this addition will conform to the City's current surface water development manual which specifies stormwater design standards. The city has adopted the Spokane Regional Stormwater Manual, April 2008, which also governs stormwater design for Spokane County, the City of Spokane, and the City of Spokane Valley.

Storm water collected off new roof areas will not need to be treated for water quality but can be directed to the local campus system. If new and replaced vehicular use pavements exceed 5,000-sf within this project, the water quality treatment facilities will need to be provided for water collected off these surfaces. For small areas this is usually best done before detention. Cartridge filter systems or grass swales may be possible based on available space and locations.

Stormwater flow control system:
Martin Hall dates from 1937, and Williamson from 1966, both buildings predate the writing and adoption of any drainage codes. The water from these roofs flows into the local campus system and into the city storm mains with no flow control. This condition is grandfathered and given that the new building and associated paving will be approximately the same footprint, flow control (detention) is not required.

If LEED or other sustainable practices are desired, several options may be available to obtain stormwater points for the redeveloped site. For LEED points, most of the water needs to be either infiltrated, or re-used within the LEED boundary.

Infiltration
The soils on the EWU campus are typically fine-grained and usually not suitable for infiltration as the sole source of stormwater disposal. Drywells have been used on campus at many of the buildings, overflow from them could be routed to the local storm drains. Verification of local soil infiltration by percolation testing is recommended.

Cistern to collect precipitation for reuse:
Collection and holding water in winter for use later in the year is another possible storm water strategy, one nearby objective is to collect water under the quad from nearby buildings. Setting their new building up for such a system may be possible. Alternatively, a cistern could be constructed below the new plaza, with the possibility of reusing storm water for irrigation or other gray water uses.

Foundation Subdrainage: A footing and slab drainage system will likely be incorporated, and discharge directly into the campus stormwater system. Below slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drainpipes in the free-draining layer will gravity drain to the existing campus storm system.

The existing campus storm system is under the pedestrian plaza north of Martin Hall, and flows east and south to city systems.

Connection to Campus Utility Tunnel:
West of the site, under the brick pedestrian walk, a branch of the campus utility tunnel provides access to many campus utilities, including power, communications, steam, and chilled water. Below grade, the new building will not directly affect the tunnel. Connection/reconnection to these utilities, through the existing points of connection in the tunnel are expected.

Future Geothermal Heating
The campus is developing plans for district heating from deep well geothermal systems. Under a separate project, a network of wells and heat exchangers would be installed nearby and a new low temperature looped pipe network to heat buildings, with low or no carbon footprint.

Depending on the timing of the different projects, partial or full installation of such a system may be warranted in the new Martin-Williamson facility. See mechanical discussion for more detail on such a system.

Gas Distribution:
Natural gas service to the campus is provided to the existing buildings by Avista Utilities, most new and renovated buildings on campus are not being reconnected to natural gas.

4.2.11 POTENTIAL ENVIRONMENTAL IMPACTS

Given that this proposed project is on a developed site, which has been an active part of the EWU campus for nearly 100-years, no environmental impacts are expected.

No mapped wetlands or other water bodies are near this portion of campus.

There are no shorelines near this area.

A SEPA application will be required for this project.

While under construction, the project will need coverage under the State DOE Construction Stormwater General Permit.

4.2.12 PARKING AND ACCESS

There is no significant parking directly associated with either of these buildings, most student parking is clustered around the perimeters of campus, within walking distance of the campus core. About 20 stalls are along the west edge of Eagle Lane, to the east side of Martin Hall. These stalls are not specifically designated for Martin Hall users. Current proposed design does not appear to affect these stalls.

At the south end of Williamson, is a small service/delivery area, with two ADA stalls and a campus service stall. A small dumpster corral is part of this installation.

Allowance for a service area, for deliveries and trash staging should be included in the site design of the new complex.

A location to accommodate the needs of the building, and possibly designed with the potential to be expanded to the old Reid School site when it's redeveloped. A shared service/delivery area would be more economical and use less campus area than separate service/loading/waste facilities for each building.

4.2.13 IMPACT ON SURROUNDINGS DURING CONSTRUCTION

Site Preparation and Excavation:
Demolition will include removal of both buildings and foundations, leaving the façade of Martin Hall on the north and east faces. Existing utilities will be capped at the edge of work and left for reconnection. All demolished materials will be removed from site, reused, recycled or discarded, in appropriate, legal locations. Site preparation for the project will include removal of the existing paving and miscellaneous site features in the work area.

The topsoil and vegetative material will be removed, screened and saved for re-use in revised landscaped areas. The subgrade will be prepared prior to placing structural fill or building foundations, per future geotechnical recommendations. Structural fill will be approved imported material. Native silty or clayey material is not acceptable for use as structural fill and will be hauled off site. Some large trees very near the buildings and future construction will need to be removed to construct the new facility, and for future maintenance access to the façade.

Temporary Sediment and Erosion Control:
During construction, all temporary erosion and sedimentation control systems will be designed and constructed in accordance with the Eastern Washington Regional Stormwater Manual Best Management Practices (BMP's), to protect of site properties as well as minimize the quantity of sediment-laden water from entering the City of Cheney's public storm system. The site will be graded to drain to sediment control ponds or temporary tanks at the site.

Temporary catch basin protection should be installed and maintained on existing and new catch basins to filter sediment-laden water entering the existing storm conveyance system during construction. The size of this project will trigger coverage under the DOE's Construction General Stormwater Permit, with it's record keeping and reporting requirements for quality of water discharged from the construction site.

Temporary Construction Features:
During construction, site access is expected to be from the empty lot south of the Martin-Williamson site, across the former Reid School parcel. This access and other contractor laydown and trailer space will need to be coordinated with ongoing campus activities and circulation needs. Quarry spall work pads on disturbed soils, and silt fencing placed around the downhill portion of the site will further control soils and limit erosion. Soil stockpiles will need to be erosion protected, with plastic sheeting or other approved measures to prevent sediment migration from the site.

Construction Debris:
The contractor will implement BMP's to prevent demolition and construction debris, waste, material, fuel, oil, lubricants, and other fluids from leaving the work areas, or entering the public right of way and the existing storm conveyance system. All waste materials shall be disposed of in appropriate, legal locations. Recycling or reuse of demolished or excess material when appropriate is encouraged.

Temporary Construction Impacts:
Assuming the old Reid School site is used for contractor operations (office trailers, deliveries, staging, laydown, stockpiles, etc.) site access may try to come from the highway, through the town of Cheney, on G or H streets, to campus. This is mostly a residential neighborhood, added large vehicle traffic will be a temporary disturbance to the community. An more desirable alternate path up Washington St. to J/7th Ave. avoids most of the residential area, and runs through the interface between the city and campus areas. Other effects to the surrounding community may be dust which can be mitigated with watering trucks, and temporary ground cover (either straw or mulch) on bare, unworked, soil areas. Fences with fabric panels can help control dust also.
Noise from construction equipment and operations will likely be an issue for both the on and off-campus communities. From demolition through finished building, louder than normal, and sharp, abrupt, noises can be expected. The primary means of noise control will be limiting work hours to normal workdays and hours, as defined by the city.

4.3 CONSISTENCY WITH APPLICABLE LONG-TERM PLANS

Eastern Washington University has plans to revisit their Campus Master Plan starting summer of 2024 and the renovation of Martin Williamson Hall will remain a critical component of their future planning. The Eastern Washington University Comprehensive Master Plan identifies five planning principles that align with the proposed renovation of Martin Williamson. The planning principles and how they are implemented (In Italics) in the design of Martin Williamson are as follows:

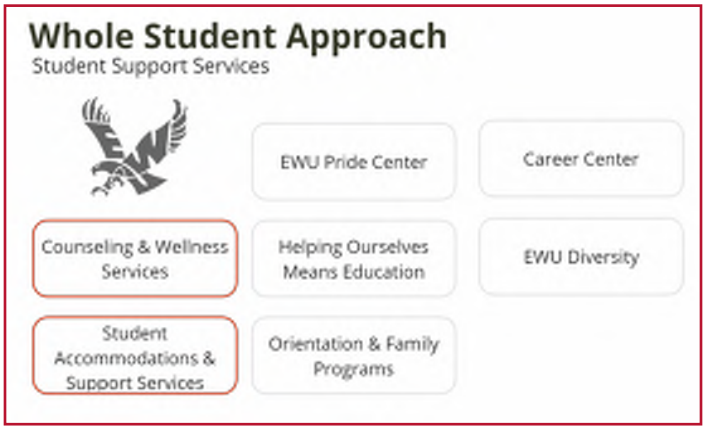
PLANNING PRINCIPLES

- Carefully evaluate each project with regard to renovation versus replacement opportunities

Careful consideration was given to the decision of renovation versus replacement of Martin Williamson. Ultimately, to support the mission and areas needed by the programs housed within, preserving the existing building was not feasible. Previous predesign requests to replace the project have not received funding.

- Locate and size all new or replacement buildings to optimize site utilization

The proximity of Martin Williamson in the heart of campus is ideal as 2 or 7 student support services areas (SASS and Counseling and Wellness) are housed within. Additionally it is directly proximate and provides visual connection to the Cheney Normal School Heritage Center (one rooms school house) that represents EWU's beginnings in 1890 as the first institution in Washington for teacher instruction.



- Improve the overall character of the campus with the implementation of each project

Martin Williamson has had multiple renovations over its lifetime and very little historical significance exists except for the facade of Martin Hall. With the complete demo and reuse of the facade, this allows the project to incorporate EWU's current design guidelines and improve the overall character of campus.

- Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries

The campus is only a few blocks from downtown Cheney. The building is designed to provide easy access from both the parking and neighborhoods as well as the campus spine. Green space around the project was maximized to the fullest extent possible.

- Reinforce and improve the overall cohesion of campus, specifically linkages across Washington Street, whenever possible

The existing Martin Williamson building has deep roots in the existing campus fabric. Preservation of the existing facade of Martin Hall was prioritized as part of the design effort to ensure its legacy while still creating an outstanding learning environment that supports students success and reflects the hopes and aspirations of the Programs within and the larger EWU community.

Southeast aerial view of campus Circa 1960

4.4 REGULATORY FACTORS

4.4.1 PERFORMANCE PUBLIC BUILDINGS

High Performance Buildings (Chapter 39.35D RCW)

Eastern Washington University has a proven track dating back to 2008 of designing and constructing high-performance buildings using the LEED rating system. This project will select design consultants who embody EWU's sustainability objectives. This project will be designed, constructed, and certified to the LEED Silver Standard, as a minimum, in accordance with RCW 39.35D. A LEED Checklist, outlining a preliminary approach, has been included in the Appendix. EWU has had a history of achieving LEED silver or higher and will strive to achieve LEED gold on this project.

4.4.2 ZERO ENERGY BUILDINGS

State Efficiency and Environmental Performance (Executive Order 20-01)

The Governor's Executive Order 20-01 mandates high performance buildings for reduction of greenhouse gases, reduction of pollutants from fossil fuels, and the use of clean energy when technically and economically feasible. Eastern Washington University acknowledges that the costs of constructing zero energy or zero energy capable buildings are nearing parity with conventional buildings. Consequently, the university will further progress its building construction endeavors toward this directive, employing life-cycle cost analysis tools to inform decision-making throughout the design process. The life-cycle cost analysis performed as part of this predesign included the evaluation of a net zero building. In studying the use of photovoltaic (PV) solar panels for on-site renewable energy generation, the required area of PV panels exceeded the available roof area and would require additional dedicated site area.

EWU is currently working on a campus Decarbonization Plan, scheduled for completion in 2025. This plan will outline the steps needed to align the campus with House Bill 1390, to decarbonize the existing central heating plant.

4.4.3 GREENHOUSE GAS REDUCTION

4.4.3-1 STATE LIMITS

Greenhouse Gas Emissions Policy (RCW 70A.45.070)

The referenced Revised Code of Washington regarding the greenhouse gas emissions reductions requires all state agencies to reduce greenhouse gas emissions as follows:

i. By 2020 to 1990 levels.
ii. By 2030 to forty-five percent below 1990 levels.
iii. By 2040 to seventy percent below 1990 levels.
iv. By 2050 to ninety-five percent below 1990 levels.

Part of the University's strategy to cut greenhouse gas emissions involves decreasing reliance on fossil fuels for building energy. The incorporation of energy-efficient HVAC, plumbing, and electrical systems in this proposed facility is crucial for advancing the campus's goal of reducing overall fossil fuel usage. Given that major capital projects are typically significant energy consumers, prioritizing energy efficiency in the new facility is particularly important.

This project is unique for EWU as it intends to utilize a new all electric heating and cooling system produced by a ground source heat pump for heating, domestic hot water, and chilled water. This ground source heat pump system will be housed in a newly proposed central geothermal energy plant. By connecting to an all-electric heating system, this project will significantly reduce carbon emissions associated with the building when compared to the existing facility that is currently connected to the campus steam plant, which utilizes natural gas fired steam boilers.

EWU is currently working on a campus Decarbonization Plan, scheduled for completion in 2025. This plan will outline the steps needed to align the campus with House Bill 1390, to decarbonize the existing central heating plant.

4.4.4 ARCHAEOLOGICAL AND CULTURAL RESOURCES

In adherence with Executive Order 21-02 and Section 106 of the National Historic Preservation Act of 1966, EWU has initiated consultation with the Washington State Department of Archaeology and Historic Preservation (DAHP), and the Coeur d'Alene, Colville and Spokane Tribes Preservation Programs. The university is committed to working with DAHP throughout the design phase to address historical and cultural resource impacts this proposed project may identify. All proposed construction will be on previously disturbed ground, therefore we do not anticipate any archaeological resources will be uncovered as part of this work. Project specifications will include requirements for an Inadvertent Discovery Plan (IDP) should any artifacts or remains be discovered during excavation.

This project has been remodeled numerous times over the years and much of the historic character has been removed.

4.4.5 CLEAN BUILDING ACT

State Energy Standards for Clean Buildings (RCW 19.27A.210)

The Department of Commerce, through RCW 19.27A.210, has developed standards for reducing greenhouse gas emissions from the building sector as published in the Washington State Clean Buildings Performance Standard (2021). The Clean Building Performance Standard has established energy use intensity targets. This building is anticipated to exceed the 50,000 square feet threshold for Tier 1 Buildings, mandating compliance on the building level. EWU monitors their Energy Use Intensity (EUI) as a campus and has been evaluating their overall EUI in relation to the Washington State Clean Building Performance Standard, with a target campus EUI of 112.2. The preferred building option and energy package of this predesign is anticipated to reduce the campus' comprehensive EUI from the current value of 118.4 to 111 kBtu/(SF-year), more than a 6% reduction in the campus

EUI. This EUI reduction attributed to the preferred option and energy package is anticipated to bring the campus EUI within the requirements of the Clean Building Performance Standard target EUI of 112.2 kBtu/(SF-year).

As of March 15, 2024, the 2021 Edition of the Washington State Energy Code has been implemented. The project will follow the State Energy Code in place at the time the building is permitted. With progressively more aggressive energy requirements, alongside the phase-out of fossil fuels, facilities will progress towards reducing energy consumption and associated greenhouse gas emissions, as outlined in the Greenhouse Gas Emissions Policy.

4.4.6 VEHICLE CHARGING CAPABILITIES

Vehicle Charging Capability (RCW 19.28)

Where new parking is provided at the building, electric vehicle charging stations and infrastructure shall be provided in compliance with WAC 51-50-0429. The electric vehicle charging stations and infrastructure shall meet Level 2 charging capacity requirements with each charger rated for 40 amps at 208V, 1PH. Charger locations will be coordinated to not conflict with campus snow removal operations.

4.4.7 AMERICANS WITH DISABILITIES ACT

The purpose of the Americans with Disability Act is to prohibit discrimination based on disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. ADA Title II requires that State and local governments provide people with disabilities an equal opportunity to benefit from all the programs, services, and activities (e.g., public education, employment, transportation, recreation, health care, social services, courts, voting and town meetings). This project will adhere to the State requirements for ADA. This project provides ADA parking spaces complete with new ADA compliant walkways/ramps at all building entrances.

4.4.8 PLANNING COMPLIANCE

City of Cheney, Comprehensive Plan

4.4.9 INFORMATION REQUIRED BY RCW 43.88.03.01(1)

The new Martin Williamson is planned in accordance with the Growth Management Act (GMA) RCW 36.70A as required by RCW 43.88.0301(1). The proposed project fully complies with the city's comprehensive plan and zoning codes.

4.4.10 OTHER CODES OR REGULATIONS

City of Cheney Comprehensive Plan

Washington State Environmental Policy Act (SEPA)

State of Washington Department of General Administration – Leadership in Energy and Environmental Design (LEED) – Quality Assurance Process Guidelines for State Agency/College and University Facilities.

4.5 PROBLEMS REQUIRING FURTHER STUDY

An additional Site Survey will be required to verify existing utility locations on-site to confirm exact locations of existing infrastructure.

Geothermal Infrastructure Study:

Central Geothermal Plant: As part of a separate project, Eastern Washington University will be building a new open source geo-thermal heating plant. The heating plant will generate heating hot water for building heating and domestic hot water generation.

Funding for this new central plant will be requested separately from this project and is the primary source of heating and domestic hot water generation for this project. If this central plant is not funded alongside this project, an alternative means of heating and domestic hot water generation for the building will be required.

4.6 REQUIREMENTS IN EXCESS OF EXISTING CODE

No items have been identified.

4.7 TECHNOLOGY INFRASTRUCTURE INVESTMENTS

Campus owned outside plant cabling will be provided to the building from the existing campus IT infrastructure. New site communications pathways will be provided to connect the new facility to the existing site utility pathways near the site. Communications rooms will be located throughout the new facility in accordance with EIA/TIA 568 and 569. The main telecom room will be located on the ground level of the building. Each floor of the building will be provided with a minimum of (1) closet. Additional communications rooms will be provided on each floor as needed to ensure that all horizontal station cabling distances will be less than 295 feet from the nearest closet. Cable trays will be provided at accessible ceilings on each floor to support horizontal cabling distribution.

4.8 SECURITY

The site is within the existing campus and will be subject to existing campus security protocols. Pole mounted lighting on the site will be provided for pedestrian walkways and parking areas to support site-related campus security goals. Site lighting illumination levels will be in compliance with IES guidelines and EWU campus standards.

4.9 COMISSIONING

Eastern Washington University will engage a third-party commissioning agent to oversee the project commissioning, adhering to WAC 51-115C-4801 and LEED criteria for energy and water systems. The appointed consultant shall be a member of the Building Commissioning Association and the U.S. Green Building Council and will serve as the University's Commissioning Authority. Their services will enhance the facility's value, bolster maintainability, conserve energy, and enhance indoor environmental quality. Alongside meeting Washington State Energy code and LEED Enhanced Commissioning standards, the agent will also undertake the following responsibilities:

- Development of a commissioning plan.
- Identification of all the roles of the project members, including the University, the Architect/Engineering Consultants, sub-consultants, contractors, and sub-contractors.
- The plan will identify the needs of Eastern Washington University to ensure that functional building requirements are met and to establish the project design intent.
- The commissioning process will begin in the early phases of design and continue through construction to final completion, final acceptance, and the warranty phase.
- Commissioning services will include but not be limited to the following areas of the building operations: energy monitoring, building automation and energy management systems, heating, ventilating and air conditioning systems, lighting controls, plumbing, domestic heating water system, HVAC heating and cooling systems, building enclosure, and renewable power systems.
- In addition to Enhanced Commissioning, Envelope Commissioning as outlined in LEED should be considered.

4.10 FUTURE PHASING

The proposed project includes the necessary areas for the included programs and does not assume any future phasing. Adequate infrastructure is provided to accommodate a future Geothermal connection to the building.

4.11 PROJECT DELIVERY METHODS

4.11.1 DELIVERY METHOD COMPARISON

The project is not pursuing an alternative delivery method. The proposed project does not meet the GCCM or Design Build requirements outlined in RCW 39.10. Both of these delivery methods can be effective, but they would incur additional preconstruction fees for contractor involvement early in the design.

The project will use the Design-Bid-Build (DBB) project delivery method per RCW 39.04 – Public works. This is the delivery method that is most frequently used by Eastern Washington University. The school is familiar and experienced with this delivery method and has found that it has been the most cost-effective by promoting competitive bidding between interested general contractors and subcontractors.

Position	Time On Project	Duties:
Director of Construction & Planning	15%	Oversees project planning and implementation for campus
Sr. Project Manager	85%	Supervises construction implementation and project coordination
Construction Project Coordinator	45%	Assists with project coordination for campus
Office Assistant	15%	Assists with administrative tasks for project
Totals	**160%**	

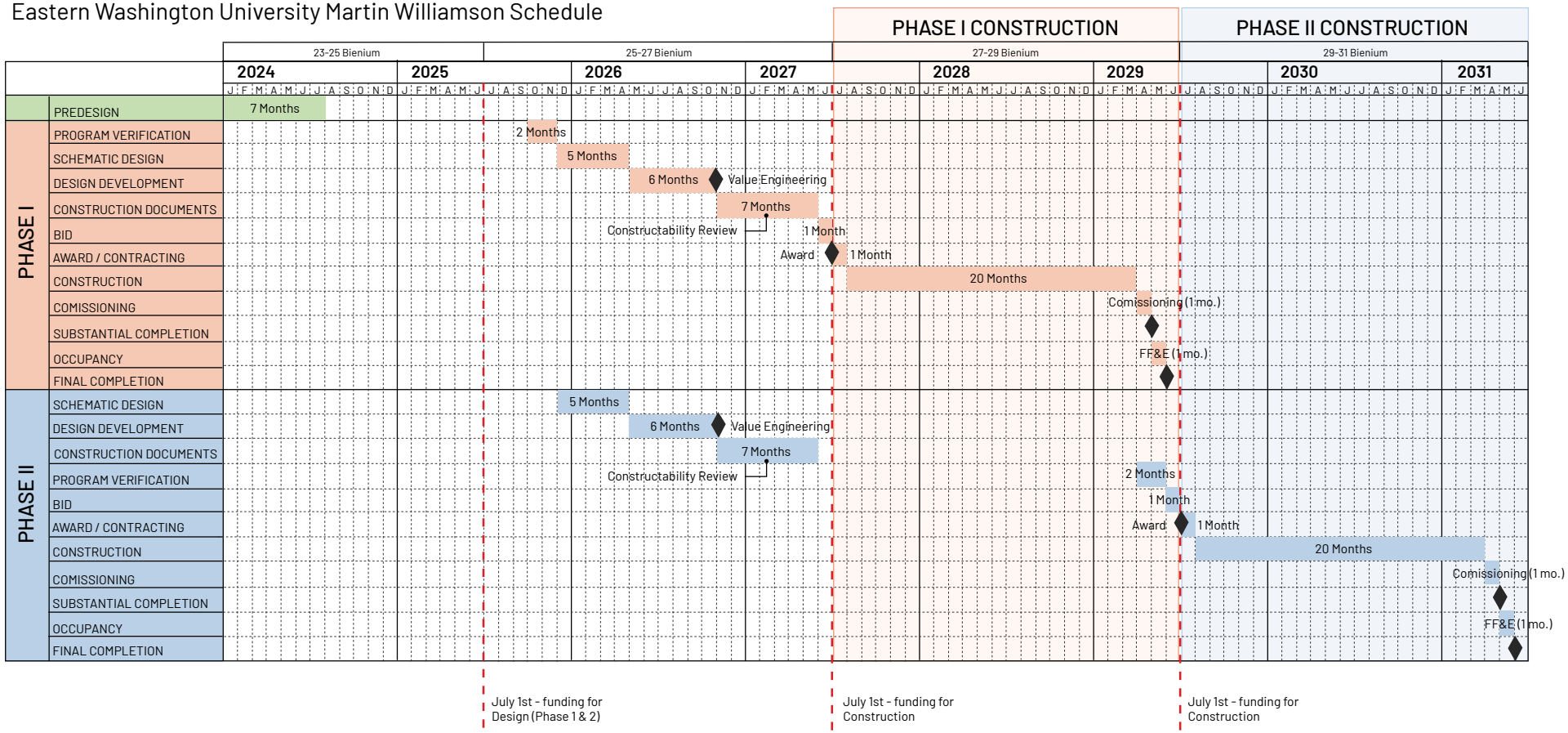
4.11.2 MANAGEMENT ORGANIZATION WITHIN THE AGENCY

Eastern Washington University's Construction and Planning Division will manage all aspects of the project from programming and initial budgeting of the proposed project to the initial selection of the project architect/engineer(A/E) consultant design team and throughout the subsequent design, bidding, construction, commissioning, and warranty phases. The Construction and Planning Division will oversee the required contractual administration for the project architect/engineer (A/E) consultants and public works contractors. The Construction and Planning team is responsible to work closely with the university's administration, the design team, and the contractors to ensure the project is delivered on time and within budget.

4.12 SCHEDULE

4.12.1 MILESTONE SCHEDULE

Eastern Washington University Martin Williamson Schedule



Schedule Highlights

- Design for Phase 1 and Phase 2 to occur simultaneously so a complete set of documents for both phases will be completed and permitted at the end of the 2025-2027 Bienium.
- Construction for Phase 1 proposed in the 2027-2029 Bienium
- Construction for Phase 2 proposed in the 2029-2031 Bienium

4.12.2 VALUE ENGINEERING AND ANALYSIS

The project schedule includes time for both a Value Engineering (VE) study and a Constructibility review. The VE study will take place at the end of the Design Development phase and will allow the project team to better understand what project saving opportunities can be found. The Constructibility study will take place at the midpoint of the Construction Documents phase and will be complete with enough time to be incorporated into the building permit submission.

4.12.3 POTENTIAL FACTORS THAT MAY DELAY SCHEDULE

There are no known factors that are expected to delay the design or permitting of the project. The construction schedule may be affected by current supply chain challenges. The project team will mitigate any delays by identifying long lead time items early and will be responsive to allow for early procurement where it is feasible.

The project schedule would be delayed if construction funding is not allotted in the 2027-29 and 2029-2031 bienniums and postponed to a future biennium. This would likely increase project costs due escalation. Costs would likely also increase beyond the standard escalation rates due to potential design and document revisions for code changes, and project restart fees.

4.12.4 LOCAL JURISDICTION COORDINATION

The Authority Having Jurisdiction is the City of Cheney. The project team has already begun coordination with the permitting agencies to better understand the site access and zoning parameters. The team will continue to work with the city to ensure that all development requirements are met and that the required permits are obtained in a timely manner.

SECTION 5

BUDGET ANALYSIS

5.0 BUDGET ANALYSIS OF PREFERRED ALTERNATIVE

5.1 COST ESTIMATE

5.1.1 MAJOR ASSUMPTIONS

Phasing – Alternative C - Historic Screen

Construction of this project will occur in two phases. The first phase will include all Division 21, 22, and 23 wet infrastructures sized for both phases. Phase 1 infrastructure to include fire service and riser, domestic water service and backflow prevention, hydronic heating water service and system components, and hydronic chilled water service and system components. Fire, domestic hot and cold water mains, and hydronic mains will be sized and located for connection in phase 2. Sanitary sewer, roof drainage, and air distribution systems will be appropriately sized only for the phase they are installed.

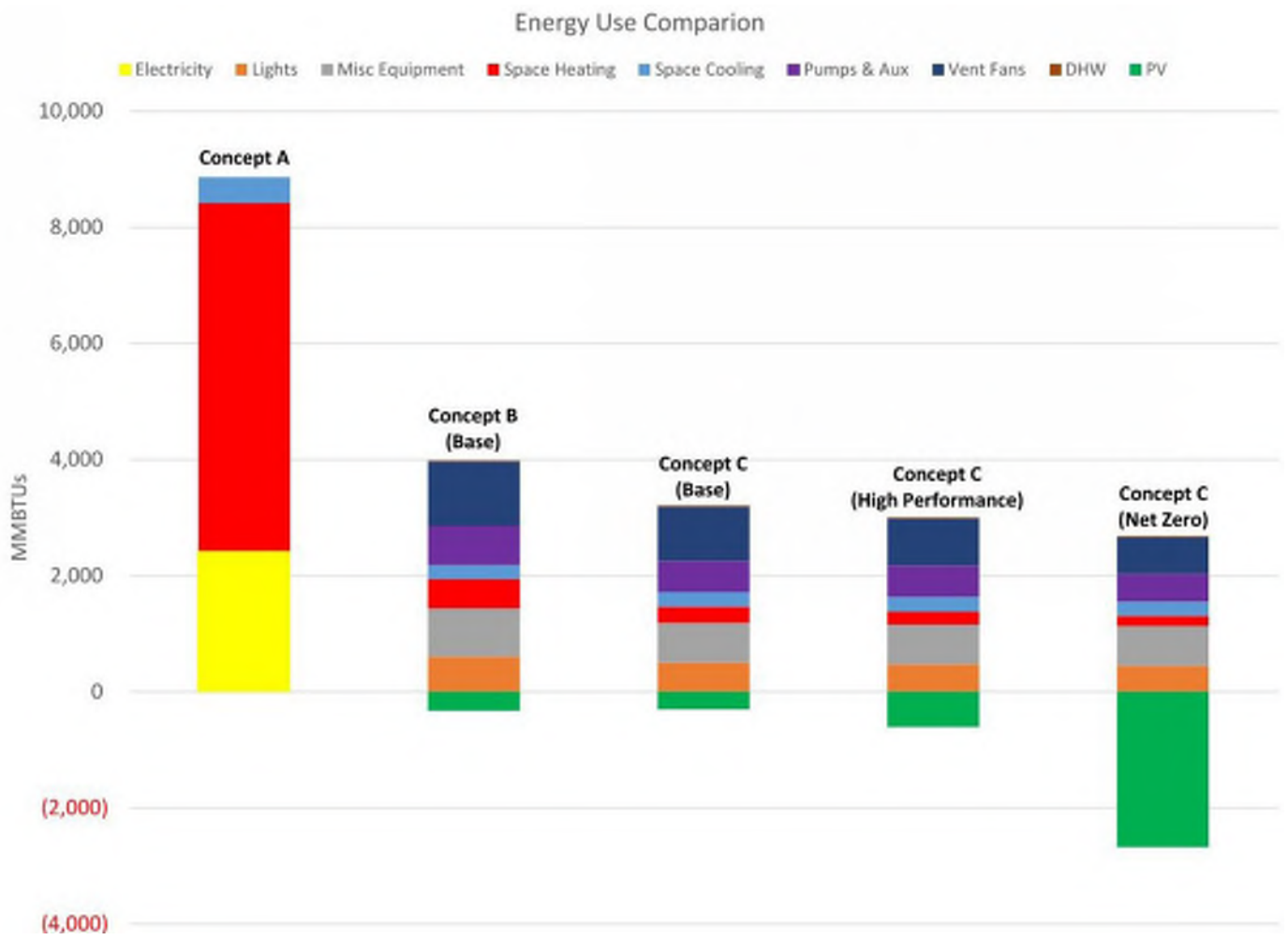
Energy System Evaluations

As part of the pre-design, three comprehensive energy packages were studied in the preferred Concept C concept. These three packages are referred to as the Base Package, High Performance Package, and the Net Zero Package. Specific system components studied in each of the three options as follows:

Base Package
- 124,375 sf new building using two existing exterior facades
- Chilled beams with 68% effective heat recovery for ventilation airflow
- 10% better than WSEC required Lighting power density (LPD)
- Ground coupled heat pump plant for LTHW, chilled water (CW), and domestic hot water (DHW)
- 62 kW photovoltaic (PV) system to meet WSEC requirement of 0.5 Watts (W) per square foot

High Performance Package
- Base Package with the following changes:
- 75% effective heat recovery for ventilation airflow
- Displacement ventilation HVAC system for large lecture hall style classroom
- Radiant floor heating and cooling for first floor corridor
- 15% better than WSEC required LPD
- 124 kW PV system

Net Zero Package
- High Performance Package with the following changes:
- 90% effective heat recovery for ventilation airflow
- Low pressure ductwork reducing fan power
- 20% better than WSEC required LPD
- High performance glazing (U-Value: 0.28 / SHGC 0.22)
- Horizontal shading on South facing windows
- Vertical shading on East and West facing windows
- 547 kW PV system



Energy results from the Energy Life Cycle Cost Analysis looking at the three concepts and the three energy packages studied within Concept C can be found below. From this study, the preferred option for Concept C is the High Performance energy package. This decision is in response to its impact on bringing the campus EUI within the EUI target required by the Clean Building Performance Standard, and the increased life cycle costs and additional site area required for the on-site renewable energy created by PV.

A10: Foundations:

The foundations for new construction will include continuous and spread footings, and perimeter drainage. The existing building's first floor is a concrete framed floor over a crawlspace. After this floor is demolished, structural fill will be brought in to raise grade for a concrete slab on grade.

B10: Superstructure:

At new construction, roof structure will be composed of 1 ½" metal roof deck on steel beams, supported on steel girders and steel columns. Second floor construction will be 5½" composite concrete deck supported on composite steel beams and girders, supported on steel columns.

CLT Option:

At new construction, roof structure will be composed of 3-ply CLT supported on glulam beams at roughly 14 feet on center, supported on glulam girders and steel columns. Second floor construction will be 5 ½" composite concrete deck supported on composite steel beams and girders, supported on steel columns.

We anticipate the lateral force system for either option will be either CMU shear walls or concentric steel braced frames. It is likely that one or two building joints will be required.

B20: Exterior enclosure:

Scope of work includes masonry brick veneer and insulated metal panel. The extent of brick will be approximately 80% and 20% insulated metal panels at opaque walls. Glazing scope includes curtain wall and storefront glazing. The extent of the glazing would vary by exposure from approximately 20% to 30% of the gross wall at the existing northeast and southeast facades to 30/40% at classroom, research, offices, Counseling and Student Support Services areas and 40% /80% at circulation/student areas. Other scope would include exterior sunshades. Exterior door scope will include glazed aluminum doors at vestibules and hollow metal doors at other locations.

The existing exterior masonry wall will be shored and braced (design by general contractor) to allow demolition of the existing 1st floor, second floor and roof structure beyond. This bracing system will remain in place until the new structure and lateral system is erected, and the existing wall system is properly tied to the new framing.

B30: Roofing:
Roof scope of work includes an Built-Up Roofing system with insulation (R-Value at 20% better than code), sheet metal flashings, and rough carpentry. Additional scope includes roof ladders, roof hatch, skylights, and fall restraint anchors.

C10: Interior Construction:
Interior partitions will consist of metal stud framing, batt insulation and gypsum board, interior glazing, and interior doors. Fittings and specialties will include toilet partitions, white boards, signage, corner guards, miscellaneous, restroom and shower accessories, fire extinguishers and cabinets.

C20: Stairs
Main stair included HSS tube steel structure with polished precast concrete treads and landings, and aluminum, glass, or cable rail guardrail and decorative stainless-steel railing. Back-of-house stairs will have channel stringers and concrete filled metal pan treads with composite concrete decks at landings and painted guardrail.

C30: Interior Finishes
Floor finishes include porcelain tile at restrooms, carpet tile and/or resilient flooring in classrooms, counseling, offices, and student support areas, and polished concrete in corridors and large shared or common areas. MEP rooms and storage will be sealed concrete. Ceiling finishes will include ACT, painted GWB, wood beams exposed to structure, acoustical baffles, as well as linear wood grilles.

D10: Conveying systems
One 3500lb 3-stop hydraulic elevator with motor and adjacent pump is included for access to all floor levels. Elevator to accommodate an ambulance stretcher.

D20: Plumbing
General
The building plumbing systems will comply with Eastern Washington University's campus standards. Water conservation is a high regional priority for Cheney and low consumption fixtures and water conservation strategies shall be employed to provide optimal efficiency and high performance to minimize maintenance.

Water
Domestic cold water distribution systems will be provided throughout the building. Backflow prevention assemblies will be provided for the system in accordance with the AWWA Backflow Prevention and Control Manual and reviewed with the Cheney Water Division and will be located in the ground floor mechanical room.

A domestic hot water distribution system will be provided throughout the building. Hot water will be generated from water-to-water heat exchangers connected to the new low temperature heating water system, serviced by the newly proposed geothermal heating water system. Domestic hot water will be generated between 115-120°F. A hot water recirculation system, controlled through the campus building automation system (BAS), will be provided, and distributed at low velocities, using in-line all-bronze circulating pumps throughout the building.

Materials:
- Water Piping: Copper Type L

Sanitary Waste System
A gravity sanitary sewer system will be utilized for all flushing and flow fixtures with drain connections. All waste systems will discharge five feet outside the building for connection to the site sanitary sewer.

Materials:
- Drain, Waste, Vent Piping (above grade) : Cast Iron
- Waste Piping (below grade): PVC, ABS, or cast Iron

Rainwater Drainage
Gravity primary and overflow storm drainage systems that will be piped with interior roof drain leaders to a point five feet outside the building for connection to the site storm drainage system. Overflow drains will terminate at grade level on splash blocks.

Materials:
- Storm Drain Piping (above grade): Cast Iron
- Storm Drain Piping (below grade): PVC, ABS, Cast Iron

Other Plumbing Systems
At a minimum, isolation valves will be provided for plumbing systems at each floor, at all branch take-offs to individual fixture groups, and each restroom (men's, women's, and gender neutral) with individual isolation valves located on the same floor and within easy access.

Elevator pits will be provided with sump pumps, to comply with Washington L&I requirements, and piped to the sanitary sewer system.

D30: Heating, Ventilation and Air Conditioning (HVAC)

General
The building HVAC Systems shall comply with Eastern Washington University's campus standards. The proposed mechanical systems are designed for a balance between high energy performance, flexibility, and low maintenance. Systems with the lowest anticipated energy use are proposed. Campus utilities will be metered and interfaced with the Division 23 building automation system.

Outdoor Design Conditions: Heating Systems will be sized for the ASHRAE median of extremes for Cheney, Washington which is -9°F. Cooling systems will be sized for the ASHRAE 0.1% design condition temperature for Cheney, Washington which is 99°F dry bulb and 69°F wet bulb.

Indoor Design Conditions: When occupied, office and classroom spaces will be maintained between 68 and 75°F. Telecommunication rooms will be controlled to 68-75°F 24 hours per day, 7 days per week. Mechanical and electrical spaces will control to 55-85°F.

Utilities

The building will be heated with low temperature water (120°F) supplied by the new open-source geothermal heating plant. LTHW will be routed to this building via 6"Ø supply and return pipes. The LTHW water will then be distributed through the building via fully redundant building heating water pumps. Air handling equipment exposed to outside air shall be serviced by a dedicated heating water system, freeze protected with 40-50% propylene glycol, separated from the campus LTHW system via a heat exchanger.

This building will be cooled from campus chilled water system, supplied by the existing chiller plant and the new open-source geothermal heating plant. Chilled water will be routed to this building via an extension to the existing tunnel system with 6"Ø supply and return pipes. The chilled water will then be distributed through the building via 60-70% redundant building chilled water pumps. All radiant floor and chilled beam systems utilizing 6-way valves shall be serviced by a dedicated tempered chilled water loop and separated from the campus chilled water system via a heat exchanger to prevent mixing of the new low temperature heating water system from the existing campus chilled water system.

Ventilation and Exhaust Air

This building has two primary air classifications, as defined by ASHRAE. Spaces with an ASHRAE Air Classification of 1 and 2 will be ventilated in accordance with ASHRAE Standard 62.1: Ventilation and Acceptable Indoor Air Quality. Within these spaces, ventilation air will be ducted via a dedicated outside air system (DOAS). Air will be regulated to each major zone through air terminal units and returned to the unit via return air ducting and regulated from each major zone or on a floor basis using air regulating devices. Ventilation air will be adjusted based upon occupancy and space CO2 levels.
A transpired solar collector will be provided to passively heat the ventilation air before entering the air handling units for heating and cooling. The transpired solar collector will be equipped with louvers that bypass the preheat plenum when the air system is in cooling mode. All outside air intakes will be located away from exhaust vents, plumbing vents, exhaust discharges, smoking areas, loading docks, kiln exhaust, dust collectors, designed to prevent hoar frost buildup, and will take prevailing winds into consideration. Prevailing winds are predominantly from the northwest, but occasionally from the southeast.

Space Conditioning

Radiant floor heating and cooling should be considered as the primary source of heating and cooling in the main lobby and major corridor spaces.

Supply Air Handling Units for Air Class 1 and 2 spaces: These spaces will be serviced from central dedicated outside air system (DOAS) style air handling unit with supply fans, exhaust fans, filters, chilled water cooling coils, glycol heating water heating coils, a total energy heat wheel or other style of heat recovery, and sized for ventilation needs in these spaces. The DOAS unit will recover a minimum of 68% sensible recovery effectiveness or have an enthalpy recovery ratio of not less than 60 percent at design conditions, in accordance with the 2021 Washington State Energy Code (WSEC), from the conditioned air that is exhausted from the building. Energy recovery efficiency in excess of the WSEC requirements will be considered as part of the project's energy goals. Fans shall be arranged in a fan array for N+1 redundancy, efficiency, and ease of service. Local space temperature control will be provided from active chilled beams.

Each conference room, classroom, and study space will have their own thermostat. Offices will be provided with a minimum of one thermostat for every two offices.

Building Automation System

The project will utilize a Direct Digital Control (DDC) system for the control of the HVAC systems, providing for heating and cooling control, peak load demand limiting and start/stop optimization. Damper and valve actuators will be electronic. Room thermostats will be an electronic adjustable type with override switch for occupant activation to occupied mode during unoccupied periods.

Energy Management System (EMS): The EMS controls will be compatible with EWU's campus BACnet controls. The system shall be manufactured by Alerton or Automated Logic. Controls will interface and communicate with the local network and front-end operator's terminal for the purpose of remote operation and maintenance. The EMS will include display and report real-time building systems performance data. The EMS controls will provide energy metering interface for the new water, chilled water, low temperature heating water, and electric utilities servicing the building and report to the Skyspark control system.

Other

The community space may offer differing hours of operation from the remainder of the building. As a result, a dedicated system should be considered for this area, such as a 4-pipe fan coil with economizer cooling.

Vibration isolation of pumps and fans will be provided. Additional acoustic considerations will include limiting duct velocities through ductwork, terminal units, and air inlets/outlets to achieve space NC, use of sound attenuators in the duct systems, and vibration isolation of mechanical equipment with spring isolators and flexible connections will also be employed.

Areas that have 24-hour process cooling loads such as the main telecommunication rooms will be cooled with systems that allow for year-round cooling and the option for economizer cooling.

The elevator machine room will have an independent stand-alone system per Washington Elevator Code requirements.

A hydronic snowmelt system will be provided for exterior walkways at main entrances and site stairs that are difficult to access with mechanical snow removal equipment. Hydronic heat for the snowmelt system will be generated from a water-to-water heat exchanger connected to the heating water system.

Air systems (supply, return, and exhaust), hydronic, and domestic hot water recirculation systems will be completely balanced in accordance with Associated Air Balance Council or National Environmental Balancing Bureau.

D40: Fire Protection Systems

The building will be fully sprinklered in accordance with NFPA-13 requirements and the Eastern Washington University Campus Standards. The systems will be a wet sprinkler system throughout the building. Piping shall be sloped to low points for drainage. The building light hazard areas (office, lecture rooms, circulation spaces) will be sprinkled to light hazard requirements. Electrical and mechanical rooms will be sprinklered to ordinary hazard group 1 requirements.

Hydrants will be coordinated with the fire department and, where required, provided in the civil scope of work.

A fire protection standpipe will be required and provided at each exit stairwell if the highest occupied level of the building exceeds 30 feet above grade.

D50: Electrical

Power

The building will receive electrical service from the campus owned medium voltage distribution system. New buried conduit pathways, vaults and cabling will be provided from the nearby existing campus medium voltage system to the new building service yard. A total of (2) pad mounted oil filled transformer will be installed on the site to provide normal electrical services to the building.

Electrical services will be derived from the (2) transformers with secondary voltages of 480Y/277V and 208Y/120V. The (2) services will have an estimated rating of 1600 amps and 2000 amps respectively. The main service switchboards will be housed in a dedicated main electrical room at the ground floor. The proposed dual service approach is intended to remove heat producing transformers from inside the building, which would also eliminate the need for electrical room space conditioning.

Emergency and standby power will be provided by an onsite natural gas fueled generator. Estimated generator rating is 100kW with a voltage of 480Y/277V. The generator will include separate automatic transfer switches and distribution for NEC 700 and NEC 702 power systems. The generator ATS equipment shall be housed in a dedicated electrical closet on the ground floor in close proximity to the normal electrical service room. Generator shall be located outdoors on a concrete housekeeping pad with a sound attenuated weatherproof enclosure.

The building electrical distribution will originate from a main electrical room on the ground floor. The building electrical distribution will be designed to provide separation of lighting, mechanical, and general building loads. Circuit breaker panelboards shall be provided throughout the building as required to adequately serve the associated building loads. Each telecommunications room will be provided with a dedicated 120/208V power panelboard and an equipment ground bar. Surge protection shall be provided by installing surge protection devices at the main switchboard, distribution panelboards, emergency panelboards and appropriate branch panelboard locations. All electrical feeders shall copper and installed in rigid conduit.

Branch circuit distribution within each programmatic space will be closely coordinated with the specific function of each space. Additional spare electrical capacity will be designed into each panel to accommodate future potential changes to the building program. Wall mounted surface raceway with receptacles shall be considered for spaces with workstations such as computer labs. Floor boxes will be provided within meeting rooms and classrooms as required by the program and the electrical code. All branch wiring shall copper and installed in rigid conduit.

Owner metering shall be provided for the building main electrical service equipment. Additional sub meters shall be provided for lighting, mechanical, PV system, EV charging and plug loads to allow separate metering for each end use type.

A complete system of photovoltaic arrays shall be provided for on-site renewable energy generation in compliance with the Washington State Energy Code (WSEC). In order for the building to achieve high performance goals, the solar array will be sized for a minimum system output of approximately 124kW. Potential locations for solar arrays include the building roof and site structures such as canopies.

Lighting

Building interior and exterior lighting will LED type. Lighting illumination levels will be in conformance with IES standards. Lighting power densities will be in conformance with the Washington state energy code. Egress and exit lighting will be provided with backup power from NEC 700 emergency power.

A low voltage lighting control system shall be provided for time-based, sensor-based (both occupancy and daylight), and manual lighting control in compliance with the energy code, LEED and the building program needs. Fixtures with embedded controls shall be considered to allow for lighting zone control changes throughout the life of the building. Switching of receptacles based upon occupancy shall be provided in compliance with the energy code.

D50: Communications

Existing buried campus communications lines are in conflict with the proposed building location and will be relocated and extended as necessary. New outside plant cabling will be provided as required to serve the new building from the existing campus infrastructure. Existing pathways in close proximity to the building will be extended for connection to the building main telecom room (MDF).

Communications Distribution: Communications building distribution cabling, devices and pathways will be provided by the contractor. Communications riser cabling will be provided from the entrance location to each Communications room. Each Communications room shall be provided with a dedicated 120/208V power panelboard, branch circuits and an equipment ground bar. Communications room power panel shall be served from NEC 702 standby power.

Communication Cabling Pathways: Cable trays will be installed on each level to facilitate cabling installation. All horizontal distribution of Communications risers will occur on the main floor level. Vertical distribution of Communications risers will route vertically through the building via 4" conduit pathways between floors.

Communication Outlets: Communications outlets will be provided throughout the facility at locations such as work stations, computers, printers, projectors, lecterns and wireless access points. Horizontal station cable will be provided and routed to the nearest Communications room located on the associated floor. Category 6 copper twisted pair cabling will be routed through the communications raceway system to each communications outlet in the building. Typically, each outlet will be served with two Category 6 cables.

WiFi Systems: WiFi system pathways, station cabling and outlets will be provided by the contractor. Required locations for wireless access points will be closely coordinated with EWU. All wireless access points will be provided and installed by EWU.

Clock System: Station cabling and outlets shall be provided by the contractor for Owner furnished Owner installed digital clocks.

Audio Visual

Audio visual systems will be provided and installed by the contractor. Spaces requiring audio visual system shall include, but not be limited to assembly spaces, classrooms and meeting rooms. The basis of design for assembly spaces and classrooms shall be a hybrid learning classroom which will include projectors, projector screens, overhead ceiling speakers, wireless microphone systems, assistive listening devices, room control, lecture capture camera and device inputs. Large meeting rooms will require a projector and screen or wall mounted display, reinforced sound and control systems. Small and medium size meeting rooms will require wall mounted display and media control systems. Computer labs will be treated as basic classrooms with either projectors and screen or wall mounted displays, overhead ceiling speakers, wireless microphone systems, assistive listening devices, room control, and wireless device connectivity.

D50: Security & Fire Alarm

Distributed Antenna System (DAS): A a complete distributed antenna system for emergency responder radio use is not planned for the new building. The contractor shall provide building infrastructure for a future DAS system. Upon completion of the building structure, walls and ceilings the contractor shall provide testing for responder radio coverage.

Access Control: A complete access control system will be provided in accordance with EWU campus standards. Required locations for miscellaneous access control devices will be closely coordinated with EWU. Typical spaces to be provided with access control include building office suite entries, exterior entries, classroom doors, MEP closets, telecom closets, and AV closets. Additional access controls shall be considered for building areas that have unique 24/7 access needs for students.

Video Surveillance (IPCCTV): Video Surveillance system cabling and pathways will be provided by the contractor. Contractor shall be responsible for installing Owner furnished cameras and camera mounting hardware. Required locations for IPCCTV devices will be closely coordinated with EWU. Typical spaces with IPCCTV devices include building entrances, building circulation, building exterior and parking. The installed cameras will connect to the existing campus IPCCTV network via CAT6 network cabling connections.

Fire Alarm: A complete battery backed addressable fire alarm system with manual pull stations, automatic detection and ADA compliant speaker/strobes will be provided throughout the facility. Initiating and annunciation devices will be installed as required by the governing codes, and in accordance with EWU campus standards. Notification devices shall be white in color and labeled ALERT to allow for dual use as mass notification. The building fire sprinkler system will be monitored by the fire alarm system for system flow and shutoff valve tampering. Central reporting capabilities will also be provided with the fire alarm system. Optical smoke imaging devices shall be considered for detection in large multi-story atriums or other large volume spaces. Fire alarm system shall be Edwards EST4 series.

E10:Equipment

The construction cost includes the supply and installation of all residential appliances to outfit staff break room and kitchenettes throughout. Also included is science prep area equipment, dishwashers, and ice machines. This also includes electrically operated projection screens and associated infrastructure.

E20:Fixed Furnishings

Fixed furnishings include walk off matts, built in casework and benches, and interior and exterior window treatments.

F10: Demolition

Major demolition as required to accommodate new construction. Preservation and shoring of the Northeast and Southeast facades to be utilized as part of the new construction.

G10: Site Preparation

Site Preparation and Excavation

Demolition will include removal of both buildings and foundations, leaving the façade of Martin Hall on the north and east faces. Existing utilities will be capped at the edge of work and left for reconnection. All demolished materials will be removed from site, reused, recycled or discarded, in appropriate, legal locations.

Site preparation for the project will include removal of the existing paving and miscellaneous site features in the work area. The topsoil and vegetative material will be removed, screened and saved for re-use in revised landscaped areas. The subgrade will be prepared prior to placing structural fill or building foundations, per future geotechnical recommendations. Structural fill will be approved imported material. Native silty or clayey material is not acceptable for use as structural fill and will be hauled off site. Some large trees very near the buildings and future construction will need to be removed to construct the new facility, and for future maintenance access to the façade.

Temporary Sediment and Erosion Control
During construction, all temporary erosion and sedimentation control systems will be designed and constructed in accordance with the Eastern Washington Regional Stormwater Manual Best Management Practices (BMP's), to protect of site properties as well as minimize the quantity of sediment-laden water from entering the City of Cheney's public storm system. The site will be graded to drain to sediment control ponds or temporary tanks at the site.

Temporary catch basin protection should be installed and maintained on existing and new catch basins to filter sediment-laden water entering the existing storm conveyance system during construction.

The size of this project will trigger coverage under the DOE's Construction General Stormwater Permit, with it's record keeping and reporting requirements for quality of water discharged from the construction site.

Temporary Construction Features
During construction, site access is expected to be from the empty lot south of the Martin-Williamson site, across the former Reid School parcel. This access and other contractor laydown and trailer space will need to be coordinated with ongoing campus activities and circulation needs.

Quarry spall work pads on disturbed soils, and silt fencing placed around the downhill portion of the site will further control soils and limit erosion. Soil stockpiles will need to be erosion protected, with plastic sheeting or other approved measures to prevent sediment migration from the site.

Construction Debris
The contractor will implement BMP's to prevent demolition and construction debris, waste, material, fuel, oil, lubricants, and other fluids from entering the public right of way and the existing storm conveyance system. All waste materials shall be disposed of in appropriate, legal locations. Recycling or reuse of demolished or excess material when appropriate is encouraged.

Foundation Subdrainage
A footing and slab drainage system will be incorporated, and discharge into the campus stormwater under adjacent walks and drives. This system discharges to the City system in 7th Street. Most areas of this campus have a thin near surface layer of porous soils, overlaying fractured and solid basalt. Depending on the depth and condition of this soil, an under-slab drainage system may be warranted for the new building. If recommended by geotechnical engineer, under-slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drainpipes in the free-draining layer will gravity drain to the existing campus storm system.

G20: Site Improvements

Site Development
The building will be accessed from all four sides, vehicular access could be made from the interior campus drive to the west, as currently used, or from the east near the entry to the P1 parking lot. Facilities for service, deliveries and waste staging should be provided.

Pedestrian access will be accommodated to all four faces of the complex. The historic Martin entrances have stairs at them to access the main level of the building. Revising the stairs with integrated ramps and landings from the adjacent pedestrian walks will accommodate all users, while maintaining the general appearance of the historic entries.

Site Paving
Site paving will consist of asphalt and concrete per university standards. Paving will be for new/replaced walks and drives around the new building and to patch utility trenches., in-kind matching existing surfaces. Asphalt for restored parking areas and new loading/utility yard, assume 6-in of ½-in HMA over 6-in Crushed base. Concrete walks and plazas around the buildings, 6-in w/ reinforcing. Where needed for fire lane, 8-in thick pavement. At University direction, some areas of new/replaced paving will have snow melt tubing and connection to campus or building boilers for heat.

Fire Truck Access
Fire truck access can be provided off the parking lot on the east side, at Eagle Lane and from 7th Street. Per a campus fire improvement study from 2007, the walks to the north and west are scheduled to be widened to 20-ft accommodating fire trucks. There are 4 existing fire hydrants within a 300-foot radius of the proposed building. These hydrants are near the corners of the complex.

Water Supply
Water mains: Existing Campus water mains are to the west, north and east faces of the buildings, No relocation or extension of existing mains is expected due to this construction. A single combined fire and domestic water service will be provided to the building from the University system water line. Analysis from the plumbing and fire design will be required to determine the size of the services for the new building.

Water Meter
An in-building water meter will be provided to measure the domestic water use in the new building for the purpose of; reporting trends in building systems consumption required by WA State law, reporting of meeting LEED criteria.

Sanitary Sewer
All floors of the addition m should be able to discharge waste by gravity to the campus sanitary sewer system located off the south edge of the site. At least one new 6-in connection to this system is anticipated, reuse of existing side sewers may be possible, depending on condition and location relative to the new facility.

Stormwater Treatment and Disposal
The University's stormwater system drains to the City of Cheney's public storm system. Development of this addition will conform to the City's current surface water development manual which specifies stormwater design standards. The city has adopted the Spokane Regional Stormwater Manual, April 2008, which also governs stormwater design for Spokane County, the City of Spokane, and the City of Spokane Valley. Storm water collected off new roof areas will not need to be treated for water quality but can be directed to the local campus system. If new and replaced vehicular use pavements exceed 5,000-sf within this project, the water quality treatment facilities will need to be provided for water collected off these surfaces. For small areas this is usually best done before detention. Cartridge filter systems or grass swales may be possible based on available space and locations.

Stormwater flow control system
Martin Hall dates from 1937, and Williamson from 1966, both buildings predate the writing and adoption of any drainage codes. The water from these roofs flows into the local campus system and into the city storm mains with no flow control. This condition is grandfathered and given that the new building and associated paving will be approximately the same footprint, flow control (detention) is not required.

If LEED or other sustainable practices are desired, several options may be available to obtain stormwater points for the redeveloped site. For LEED points, most of the water needs to be either infiltrated, or re-used within the LEED boundary.

Infiltration
The soils on the EWU campus are typically fine-grained and usually not suitable for infiltration as the sole source of stormwater disposal. Drywells have been used on campus at many of the buildings, overflow from them could be routed to the local storm drains. Verification of local soil infiltration by percolation testing is recommended.

Cistern to collect precipitation for reuse
Collection and holding water in winter for use later in the year is another possible storm water strategy, one nearby objective is to collect water under the quad from nearby buildings. Setting their new building up for such a system may be possible. Alternatively, a cistern could be constructed below the new plaza, with the possibility of reusing storm water for irrigation or other gray water uses.

Foundation Subdrainage
A footing and slab drainage system will likely be incorporated, and discharge directly into the campus stormwater system. Below slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drainpipes in the free-draining layer will gravity drain to the existing campus storm system.
The existing campus storm system is under the pedestrian plaza north of Martin Hall, and flows east and south to city systems.

Connection to Campus Utility Tunnel
West of the site, under the brick pedestrian walk, a branch of the campus utility tunnel provides access to many campus utilities, including power, communications, steam, and chilled water. Below grade, the new building will not directly affect the tunnel. Connection/reconnection to these utilities, through the existing points of connection in the tunnel are expected.

Future Geothermal Heating
The campus is developing plans for district heating from deep well geothermal systems. Under a separate project, a network of wells and heat exchangers would be installed nearby and a new low temperature looped pipe network to heat buildings, with low or no carbon footprint. Depending on the timing of the different projects, partial or full installation of such a system may be warranted in the new Martin-Williamson facility. See mechanical discussion for more detail on such a system.

Gas Distribution
Natural gas service to the campus is provided to the existing buildings by Avista Utilities, most new and renovated buildings on campus are not being reconnected to natural gas.

G30: Landscaping and Irrigation

Part of EWU's Landscape Master plan is to Promote Education, Demonstration, Experimentation, and Involvement. Campus landscapes and outdoor environments want to be used for teaching and research and facilitate connections between students, faculty and staff. Plantings will be selected with drought tolerance and prioritizing native species, creating a regionally appropriate campus planting palate and promoting biodiversity.

EWU has begun the implementation of a central controls system for irrigation. This will allow EWU maintenance staff to have much more oversight, and the ability to monitor and adjust irrigation timing to maximize efficiency.

5.1.2 SUMMARY TABLE

The following tables outline the cost summary of the preferred alternative. The complete C100 documents for both Phase 1 and Phase 2 and associated cost estimates are included in the Appendix.

Summary Construction Budget of Preferred Alternative			
	Phase 1	Phase 2	TOTAL
G10 - Site Preparation	$295,497	$313,043	$608,540
G20 - Site Improvements	$295,245	$316,595	$611,840
G30 - Site Mechanical Utilities	$153,090	$192,710	$345,800
G40 - Site Electrical Utilities	$420,000	$140,000	$560,000
G60 - Other Site Construction	$137,500	$0	$137,500
Design Contingency	$260,266	$192,470	$452,736
Contractor Mark-Up	$93,696	$69,289	$162,985
Site Work Subtotal	**$1,655,294**	**$1,224,107**	**$2,879,401**
Full Building Demolition	$2,280,000	$0	$2,280,000
Shoring Existing Historic Façade	$740,000	$0	$740,000
Related Project Costs	**$3,020,000**	**$0**	**$3,020,000**
A10 - Foundations	$1,508,137	$1,153,502	$2,661,639
A20 - Basement Construction	$0	$0	$0
B10 - Superstructure	$4,494,742	$3,320,779	$7,815,521
B20 - Exterior Closure	$4,616,977	$3,923,050	$8,540,027
B30 - Roofing	$767,624	$568,314	$1,335,938
C10 - Interior Construction	$4,921,975	$3,718,501	$8,640,476
C20 - Stairs	$140,000	$215,000	$355,000
C30 - Interior Finishes	$3,181,807	$2,396,006	$5,577,813
D10 - Conveying	$225,000	$225,000	$450,000
D20 - Plumbing Systems	$2,246,631	$1,435,890	$3,682,521
D30 - HVAC Systems	$7,212,100	$4,409,062	$11,621,162
D40 - Fire Protection Systems	$456,500	$291,763	$748,263
D50 - Electrical Systems	$5,752,498	$4,070,256	$9,822,754
F10 - Special Construction	$828,750	$610,650	$1,439,400
F20 - Selective Demolition	$0	$0	$0
E10 - CFCI Equipment	$45,000	$35,000	$80,000
E20 - Casework & Furnishings	$836,163	$626,425	$1,462,588
General Conditions	$1,500,000	$1,500,000	$3,000,000
Design Contingency	$7,446,781	$5,399,840	$12,846,621
Contractor Mark-Up	$2,680,841	$1,943,942	$4,624,783
Facility Construction Subtotal	**$48,861,526**	**$35,842,980**	**$84,704,506**
Unesclated MACC	**$53,536,820**	**$37,067,087**	**$90,603,907**

Summary Budget of Preferred Alternative						
	Phase 1 - Cost Estimate	Phase 2 - Cost Estimate	Total Cost	Phase 1 - Escalated Costs	Phase 2 - Escalated Costs	Total Cost - Escalated
Acquisition	$0	$0	$0	$0	$0	$0
Consultants	$8,056,326	$5,466,907	$13,523,233	$8,789,190	$6,117,967	$14,907,157
Construction	$64,423,332	$44,402,726	$108,826,058	$73,112,861	$53,879,081	$126,991,942
Equipment	$3,308,181	$2,448,205	$5,756,386	$3,762,394	$2,973,101	$6,735,495
Artwork	$441,683	$325,913	$767,596	$441,685	$325,913	$767,598
Project Admin	$2,349,834	$1,821,884	$4,171,718	$2,672,466	$2,212,496	$4,884,962
Other Costs	$0	$0	$0	$0	$0	$0
Total Project	**$78,579,356**	**$54,465,635**	**$133,044,991**	**$88,778,596**	**$65,508,558**	**$154,287,154**

	Cost Estimate	Cost/ SF	Escalated Cost Estimate	Cost/ SF
MACC Phase 1	$53,536,820	$749	$60,744,363	$850
MACC Phase 2	$37,067,087	$701	$44,974,243	$850
MACC	**$90,603,907**	**$728**	**$105,718,606**	**$850**

5.2 PROPOSED FUNDING

5.2.1 FUND SOURCES

The proposed project is expected to be funded through state General Obligation Bonds. Design funding is being requested as a first priority in the 2025-27 Capital Budget. Construction for the Phase 1 funding will be requested as part of the 2027-2029 capital budget and the Phase 2 funding will be requested in the 2029-2031 capital budget.

5.2.2 ALTERNATIVE FINANCE ASSUMPTIONS

The project does not plan to use any alternative finance options.

5.2.3 BIENIA BREAKDOWN

The preferred alternative funding for both Phases are shown below. Design funding for both Phase 1 and Phase 2 are requested in the 25-27 Biennium. This allows the complete project to be designed and permitted under the same code cycles and provides design and construction continuity. Construction for Phase 1 is requested in the 27-29 Biennium as is the portion of the consultant services dedicated to CA. Construction for Phase 2 will be requested in the 29-31 Biennium as well as the portion of consultant services dedicated to CA. Project Admin for EWU will be allocated across all three Biennia for continual project oversight.

Escalated Project Costs	23-25 Bienium	25-27 Bienium	27-29 Bienium	29-31 Bienium
Predesign	$281,446			
Consultant Services - Design (Phase 1)		$6,442,235		
Consultant Services - Design (Phase 2)		$4,495,038		
Consultant Services - CA (Phase 1)			$2,065,509	
Consultant Services - CA (Phase 2)				$1,622,929
Construction (Phase 1)			$73,112,861	
Construction (Phase 2)				$53,879,081
Project Admin Agency (Phase 1 and Phase 2)		$1,628,320	$1,628,320	$1,628,320
Equipment (Phase 1 and Phase 2)			$3,762,394	$2,973,101
Artwork (Phase 1 and Phase 2)				$767,598
Projected Costs/Yr	**$281,446**	**$12,565,593**	**$80,569,084**	**$60,871,029**

5.3 FACILITY OPERATIONS AND MAINTENANCE REQUIREMENTS

5.3.1 OPERATING BUDGET IMPACT

The proposed project is expected to increase the schools ongoing maintenance and operations costs. These costs have been estimated based on assumed occupancy in June 2029 for Phase 1 and June 2031 for Phase 2. Funding for the increase in operating cost will be requested within the overall state appropriated budget.

5.3.2 OPERATING COSTS

The following charts illustrate the projected maintenance and operations costs over the first six biennial of the building occupancy.

	31-32 Bienium		33-34 Bienium		35-37 Bienium	
M&O Expense	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Utilities	$4.65	$4.78	$4.93	$5.08	$5.23	$5.39
Building Maintenance	$3.25	$3.35	$3.45	$3.56	$3.66	$3.77
Custodial & Grounds	$4.25	$4.38	$4.51	$4.65	$4.79	$4.93
Ops & Mgmt Support	$4.45	$4.58	$4.72	$4.86	$5.01	$5.16
Projected Costs/Yr	**$16.60**	**$17.10**	**$17.61**	**$18.14**	**$18.69**	**$19.25**

	37-38 Bienium		39-40 Bienium		41-42 Bienium	
M&O Expense	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**
Utilities	$5.55	$5.71	$5.88	$6.06	$6.24	$6.43
Building Maintenance	$3.89	$4.00	$4.12	$4.25	$4.37	$4.51
Custodial & Grounds	$5.08	$5.23	$5.39	$5.55	$5.72	$5.89
Ops & Mgmt Support	$5.31	$5.47	$5.64	$5.81	$5.98	$6.16
Projected Costs/Yr	**$19.83**	**$20.42**	**$21.03**	**$21.66**	**$22.31**	**$22.98**

5.3.3 MAINTENANCE AND OPERATIONS RESPONSIBILITY

The university as the owner will be responsible for all ongoing maintenance and operations. The building renovation will result in increased maintenance costs for the campus, however energy costs will be significantly reduced. The renovated building will require an increase in custodial, maintenance, and technology staff.

New Building Operating Costs	Change in FTE from current levels
Utilities	No change
Janitorial Services	+ .5 FTE
Grounds	No change
Security	No change
Maintenance and Repair	+ .25 FTE
Management	No change
Technology	+ .25 FTE
Total Increase in FTE	**+1 FTE**

5.4 FURNITURE, FIXTURES AND EQUIPMENT

The Budget for furniture, fixtures, and equipment has been included in the C-100 cost outline. This budget includes built-in items such as casework and equipment that will require coordinating with building systems and utilities. The budget also includes funds for information technology, telecommunication, and audio-visual equipment.

SECTION 6

APPENDICES

6.1 PREDESIGN CHECKLIST

(c) Identify consultant services, DES resources or additional staff needed to manage the project.

L. Schedule

vii. Provide a high-level milestone schedule for the project, including key dates for budget approval, design, bid, acquisition, construction, equipment installation, testing, occupancy and full operation.

viii. Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).

ix. Describe factors that may delay the project schedule, such as an environmentally sensitive location, possible presence of archaeological or historical assets, or possible contamination of the site or buildings undergoing renovation.

x. Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.

xi. Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are part of the process.

Project budget analysis for the preferred alternative

A. Cost estimate. Provide the following:

i. Major assumptions used in preparing the cost estimate
ii. Summary table of Uniformat II Level 2 cost estimates
iii. The C-100 in Excel

B. Proposed funding

i. Identify the fund sources and expected receipt of the funds.
ii. If alternatively financed, such as through a Certificate of Participation (COP), provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates. For assistance, please contact Brianna May, Office of the State Treasurer, 360-902-9022 or email.

C. Facility operations and maintenance requirements

i. Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs) and moving costs.
ii. Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repairs, replacement, and maintenance.
iii. Identify the agency responsible for ongoing maintenance and operations, if not maintained by the owner.

D. Furniture, fixtures, and equipment. Clarify whether furniture, fixtures and equipment are included in the project budget. If not included, explain why.

8.3 Appendices

Appendix 1: Predesign checklist and outline

A predesign should include the content detailed here. OFM will approve limited scope predesigns on a case-by-case basis.

Executive summary

Problem statement, opportunity, or program requirement

☒ Identify the problem, opportunity, or program requirement that the project addresses and how it will be accomplished.

- ☒ Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location, or physical accommodations. Include anticipated caseload projections (growth or decline) and assumptions, if applicable.
- ☒ Explain the connection between the agency's mission, goals, and objectives; statutory requirements; and the problem, opportunity, or program requirements.
- ☒ Describe in general terms what is needed to solve the problem.
- ☒ Include any relevant history of the project, including previous predesigns or budget funding requests that did not go forward to design or construction.

Analysis of alternatives (including the preferred alternative)

- ☒ Describe all alternatives that were considered, including the preferred alternative. Include:
- ☒ A no action alternative.
- ☒ Advantages and disadvantages of each alternative. Please include a high-level summary
- ☒ table with your analysis that compares the alternatives, including the anticipated cost for each alternative.
- ☒ Cost estimates for each alternative:
- ☒ Provide enough information so decision makers have a general understanding of the costs.
- ☒ Complete OFM's Life Cycle Cost Model (RCW 39.35B.050).
- ☒ Schedule estimates for each alternative. Estimate the start, midpoint, and completion dates.

Detailed analysis of preferred alternative

- ☒ Nature of space – how much of the proposed space will be used for what purpose (i.e., office, lab, conference, classroom, etc.)
- ☒ Occupancy numbers.
- ☒ Basic configuration of the building, including square footage and the number of floors.
- ☒ Space needs assessment. Identify the guidelines used.
- ☒ Site analysis:
  - ☒ Identify site studies that are completed or under way and summarize their results.
  - ☒ Location.
  - ☒ Building footprint and its relationship to adjacent facilities and site features. Provide aerial view, sketches of the building site and basic floorplans.
  - ☒ Water rights and water availability.
  - ☒ Stormwater requirements.
  - ☒ Ownership of the site, easements, and any acquisition issues.
  - ☒ Property setback requirements.
  - ☒ Potential issues with the surrounding neighborhood, during construction and ongoing.
  - ☒ Utility extension or relocation issues.
  - ☒ Potential environmental impacts.
  - ☒ Parking and access issues, including improvements required by local ordinances, local road impacts and parking demand.
  - ☒ Impact on surroundings and existing development with construction lay-down areas and construction phasing.
  - ☒ Consistency with applicable long-term plans (such as the Thurston County and Capitol campus master plans and agency or area master plans) as required by RCW 43.88.110.

- ☐ Consistency with other laws and regulations:
  - ☐ High-performance public buildings (Chapter 39.35D RCW).
  - ☐ State efficiency and environmental performance, if applicable (Executive Order 20-01).
  - ☐ State energy standards for clean buildings (RCW 19.27A.210).
  - ☐ Compliance with required vehicle charging capability for new buildings that provide on-site parking (RCW 19.27.540).
  - ☐ Greenhouse gas emissions reduction policy (RCW 70.235.070).
  - ☐ Archeological and cultural resources (Executive Order 21-02 and Section 106 of the National Historic Preservation Act of 1966). If mitigation is anticipated, please note this in the predesign with narrative about how mitigation is worked into the project schedule and budget.
  - ☐ Americans with Disabilities Act (ADA) implementation (Executive Order 96-04).
  - ☐ Compliance with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.
  - ☐ Information required by RCW 43.88.0301(1).
  - ☐ Other codes or regulations.
- ☐ Identify problems that require further study. Evaluate identified problems to establish probable costs and risk.
- ☐ Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.
- ☐ Identify planned technology infrastructure and other related IT investments that affect the building plans.
- ☐ Identify any site-related and/or physical security measures for the project.
- ☐ Describe planned commissioning to ensure systems function as designed.
- ☐ Describe any future phases or other facilities that will affect this project, including impacts to current lease contracts. Include detail on the need to backfill space or cost assumptions for vacant space.
- ☐ Provide a comparative discussion of the pros and cons of the project delivery methods considered for this project and offer a recommendation of proposed procurement method for the preferred alternative. The proposed method of project delivery must be justified.
- ☐ Describe how the project will be managed within the agency.
- ☐ Schedule.
- ☐ Provide a high-level milestone schedule for the project, including key dates for budget
- ☐ approval, design, bid, acquisition, construction, equipment installation, testing, occupancy and full operation.
- ☐ Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).
- ☐ Describe factors that may delay the project schedule.
- ☐ Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
- ☐ Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are a part of the process.

Project budget analysis for the preferred alternative

- ☒ Cost estimate.
  - ☒ Major assumptions used in preparing the cost estimate.
  - ☒ Summary table of Uniformat Level II cost estimates.
  - ☒ The C-100.
- ☒ Proposed funding.
  - ☒ Identify the fund sources and expected receipt of the funds.
  - ☒ If alternatively financed, such as through a COP, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.
- ☒ Facility operations and maintenance requirements.
  - ☒ Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs) and moving costs.
  - ☒ Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repair, replacement, and maintenance.
  - ☒ Identify the agency responsible for ongoing maintenance and operations, if not maintained by the owner.
- ☒ Clarify whether furniture, fixtures and equipment are included in the project budget. If not included, explain why.

Predesign appendices

- ☒ Completed Life Cycle Cost Model.
- ☒ A letter from DAHP.
- ☒ Title report for projects including proposed acquisition.

Appendix 2: Glossary

Acquisition. This type of project includes the acquisition of land, structures, and buildings. These are fixed assets that have no relationship to the addition or improvement to, or the repair or replacement of, existing fixed assets. Examples of an acquisition are the purchase of a tract of land or a building.

Alternate financing. Proposals that cover a wide range of financial contracts that call for the development or use of space by state agencies through a contractual arrangement with a developer or financing entity. Financing may involve the sale of debt obligations (certificates of participation, or COPs, through the State Treasurer) or funding from a private developer. Title to the property involved may transfer to the state either upon exercise of an option or at the termination of the contract.

Constructability review. A review by an independent consultant or contractor to determine if a project can be physically built as designed. This is to reduce construction change orders and claims. Conduct this review at 75–95 percent completion of the construction documents.

Consultant. A person or entity who provides advice or services to an agency/institution.

Contractor. A person, firm, or corporation who, in the pursuit of an independent business, undertakes or submits a bid to construct, alter, repair, add to, subtract from, improve, move, or

SECTION 6

APPENDICES

6.2 ROOM DIAGRAMS & DATA SHEETS

PSYCHOLOGY

DEPARTMENT: Psychology Research & Instructional Lab	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 1.1
SPACE NAME: Research Suite - 6 Pod	**# of Students:** Varies	**NSF:** 800	

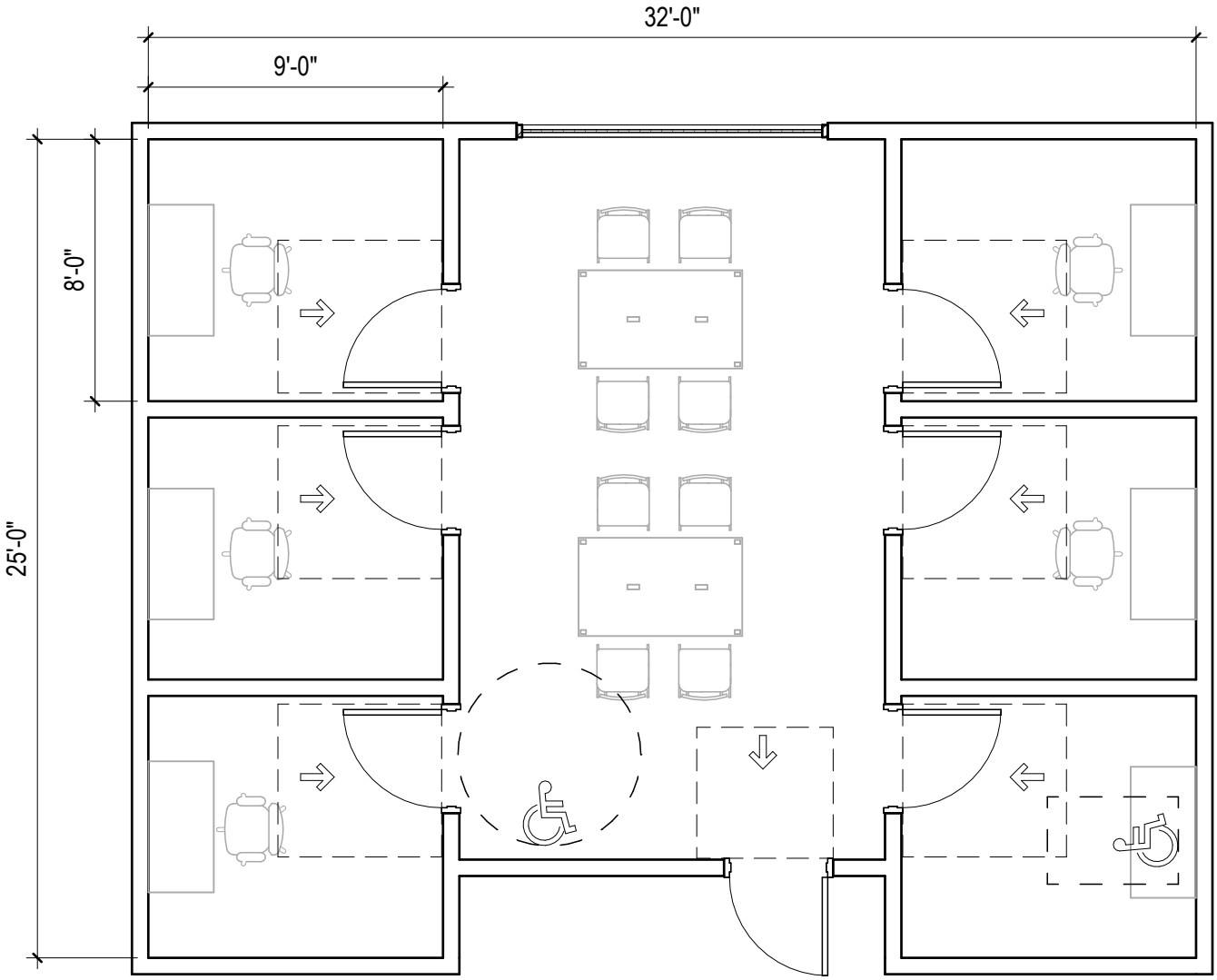
Describe the function of the space:

6 separate rooms off of a central space for investigators and research assistants to introduce and monitor research.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	No Glazing
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

PSYCH - SUITE 6 POD

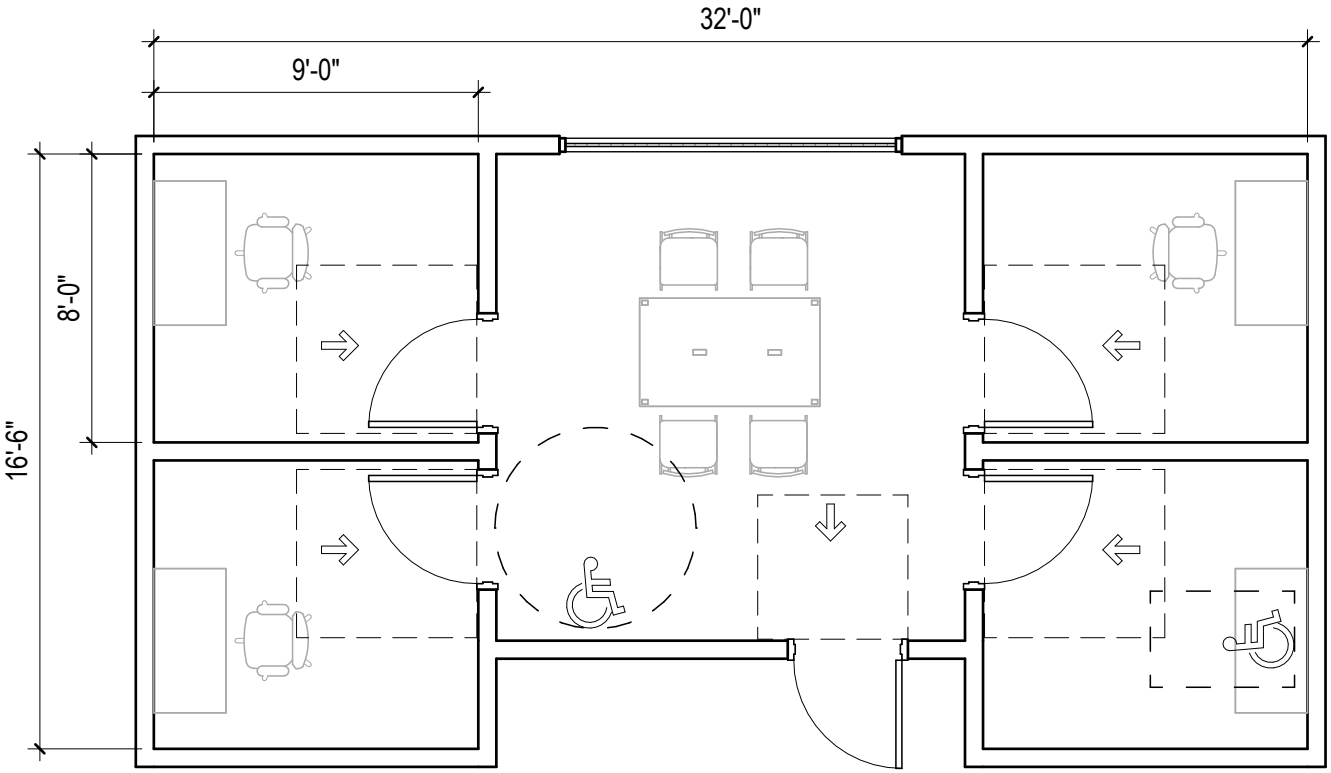
DEPARTMENT: School of Psychology Research & Instructional Lab	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 1.2
SPACE NAME: Research Suite - 4 Pod	**# of Students:** Varies	**NSF:** 530	

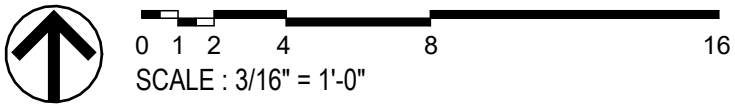
Describe the function of the space:

4 separate rooms off of a central space for investigators and research assistants to introduce and monitor research - used for cognitive studies.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	No Glazing
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





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PSYCH - SUITE 4 POD

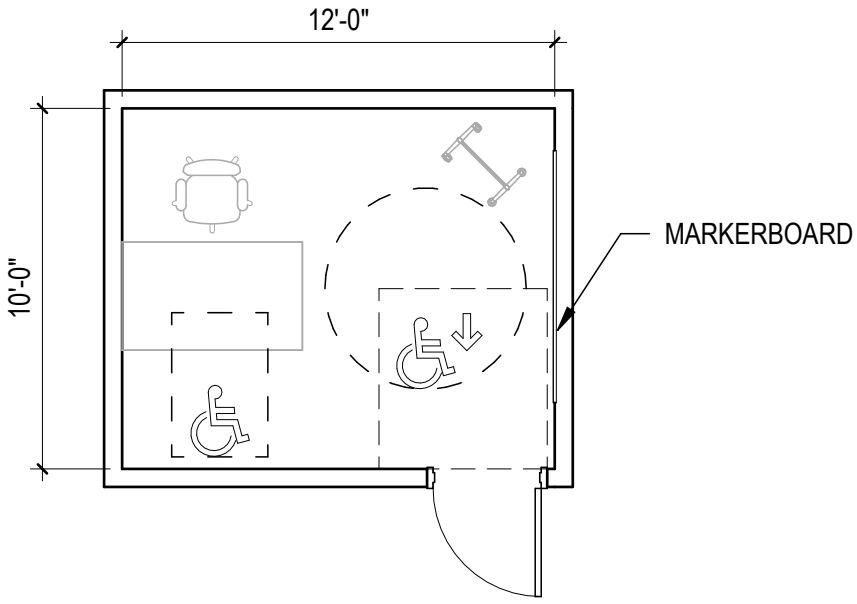
DEPARTMENT: School of Psychology Research & Instructional Lab	**# of Faculty/Staff:** 1	**# OF SPACES:** 8	**SPACE ID NO:** 1.3
SPACE NAME: Research Lab	**# of Students:** 1	**NSF:** 960	

Describe the function of the space:

Small adaptable rooms for research use by tenure and tenure track faculty. Rooms should have no windows.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	No Glazing
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - RESEARCH LAB

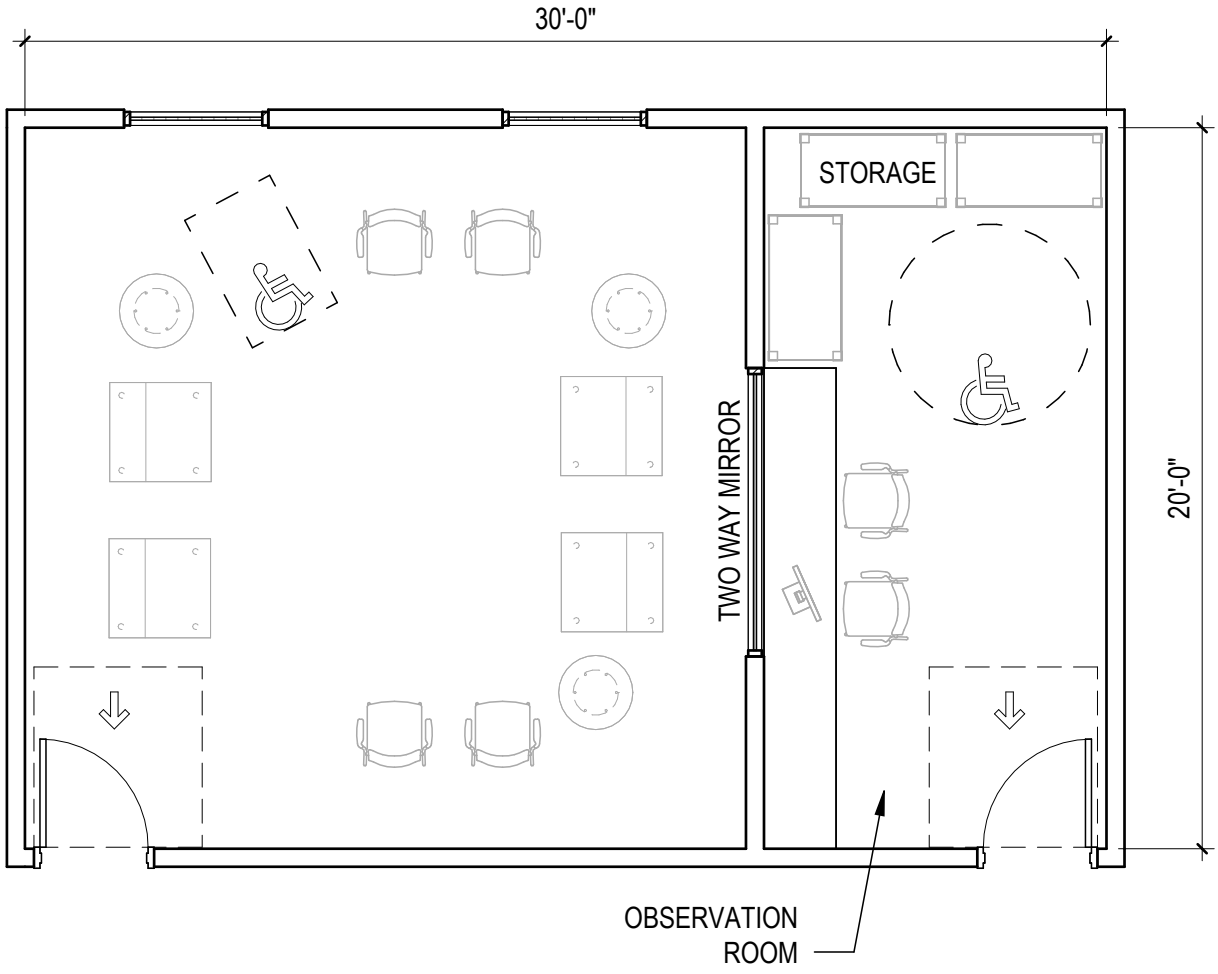
DEPARTMENT: School of Psychology Research & Instructional Lab	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 1.5
SPACE NAME: Play/Group Therapy & Autism Center	**# of Students:** Varies	**NSF:** 600	

Describe the function of the space:

Large room with adjacent observation/control room and storage space for sensory materials.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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PSYCH - PLAY / GROUP THERAPY

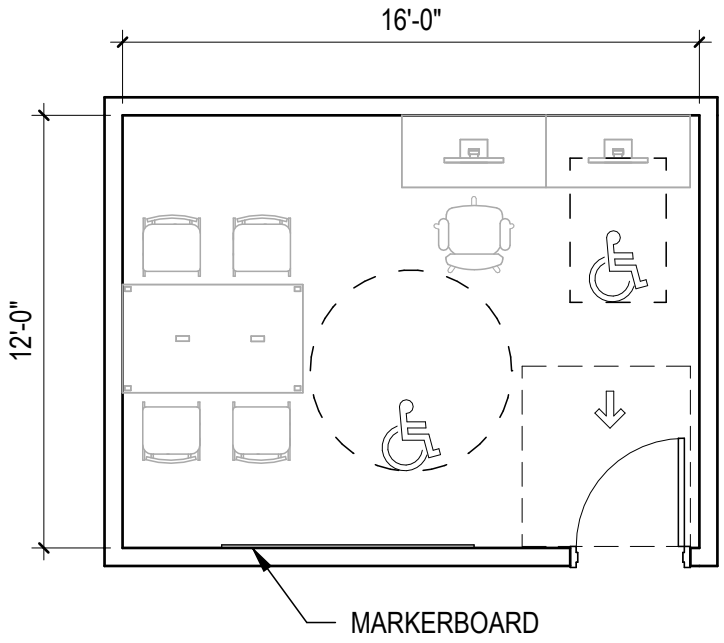
DEPARTMENT: School of Psychology Research & Instructional Lab	**# of Faculty/Staff:** TBD	**# OF SPACES:** 1	**SPACE ID NO:** 1.7
SPACE NAME: Research Assistant Area	**# of Students:** 6	**NSF:** 200	

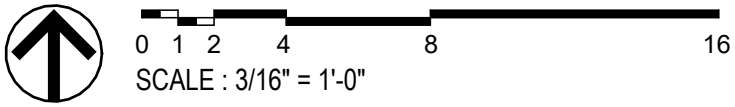
Describe the function of the space:

Place for research assistants to complete confidential data entry and laptop use.

Adjacencies: Research Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	No Glazing
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





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PSYCH - RESEARCH ASSITANT AREA

DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 1.9/1.10
SPACE NAME: Reception / Waiting	**# of Students:** 10	**NSF:** 480	

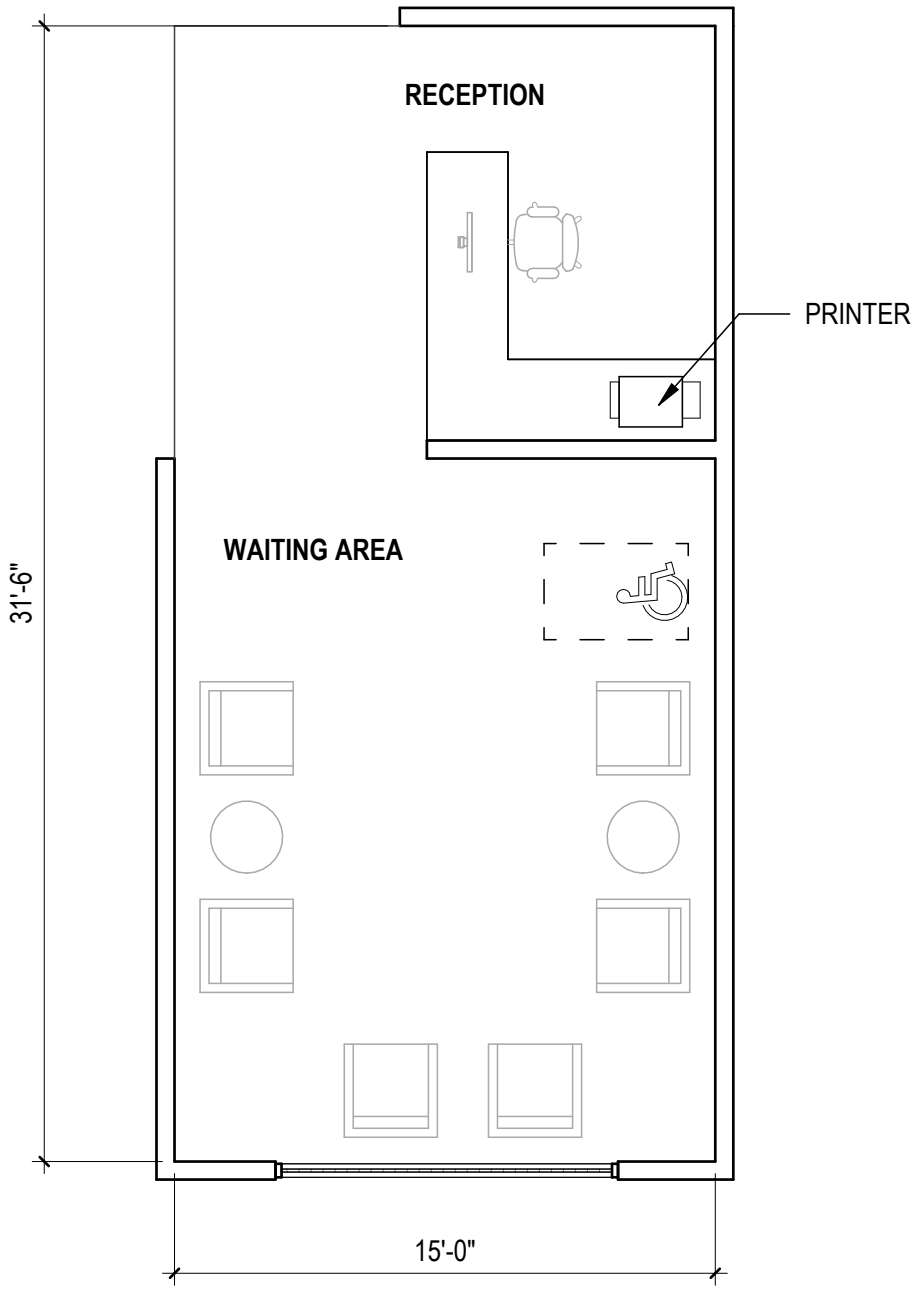
Describe the function of the space:

Reception and waiting area to clients utilizing the Training Clinic.

Adjacencies: Training Clinic Entry & Group Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

PSYCH -
TRAINING CLINIC RECEPTION / WAITING

DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 5	**SPACE ID NO:** 1.4
SPACE NAME: Observation Suite	**# of Students:** 1-3	**NSF:** 2,100	

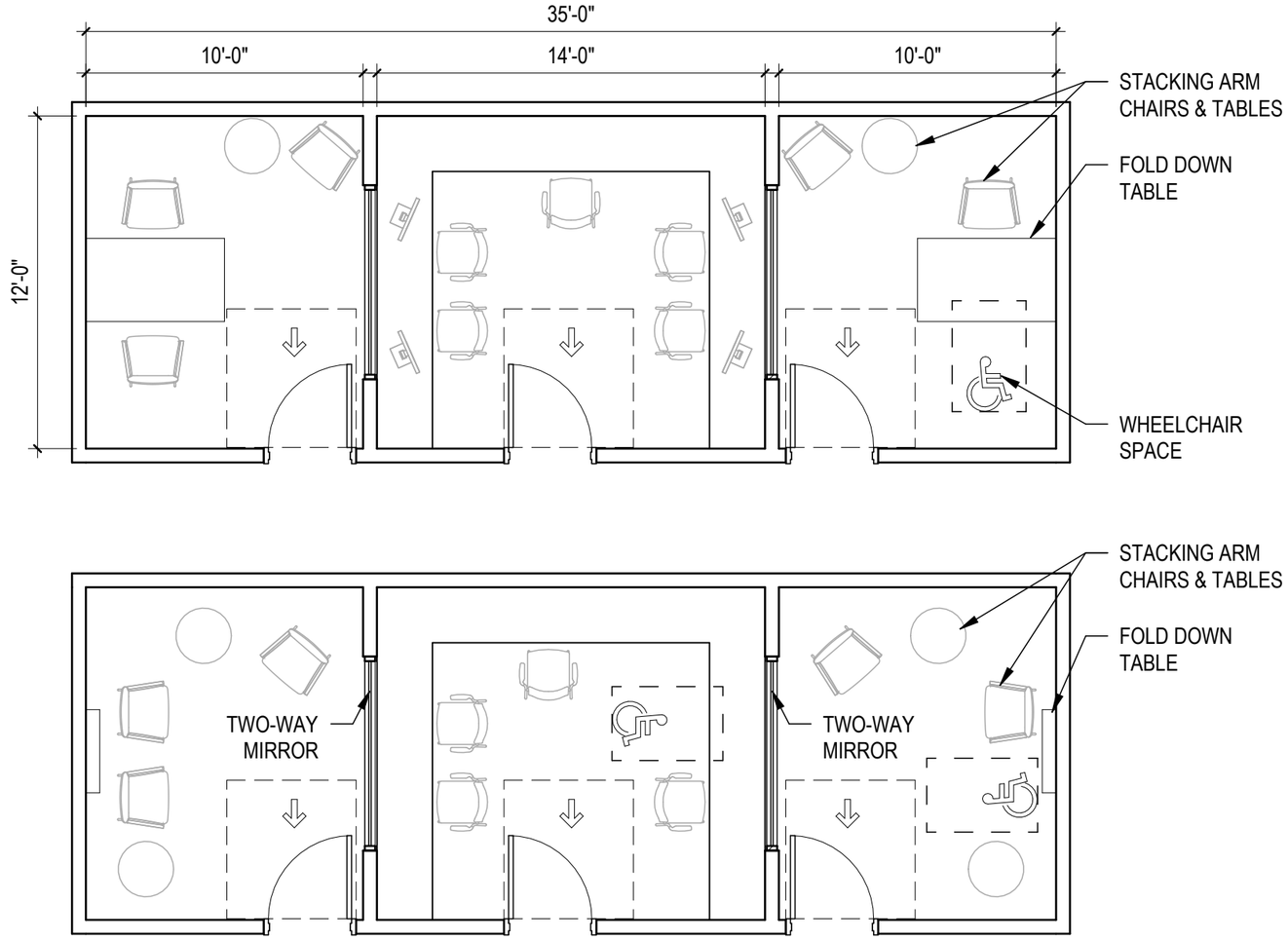
Describe the function of the space:

These suites will double as Treatment Rooms for the Training Clinic and Observation Rooms for student practice in mental health counseling and evaluation.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	Two-Way Mirror
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



PSYCH - OBSERVATION SUITE

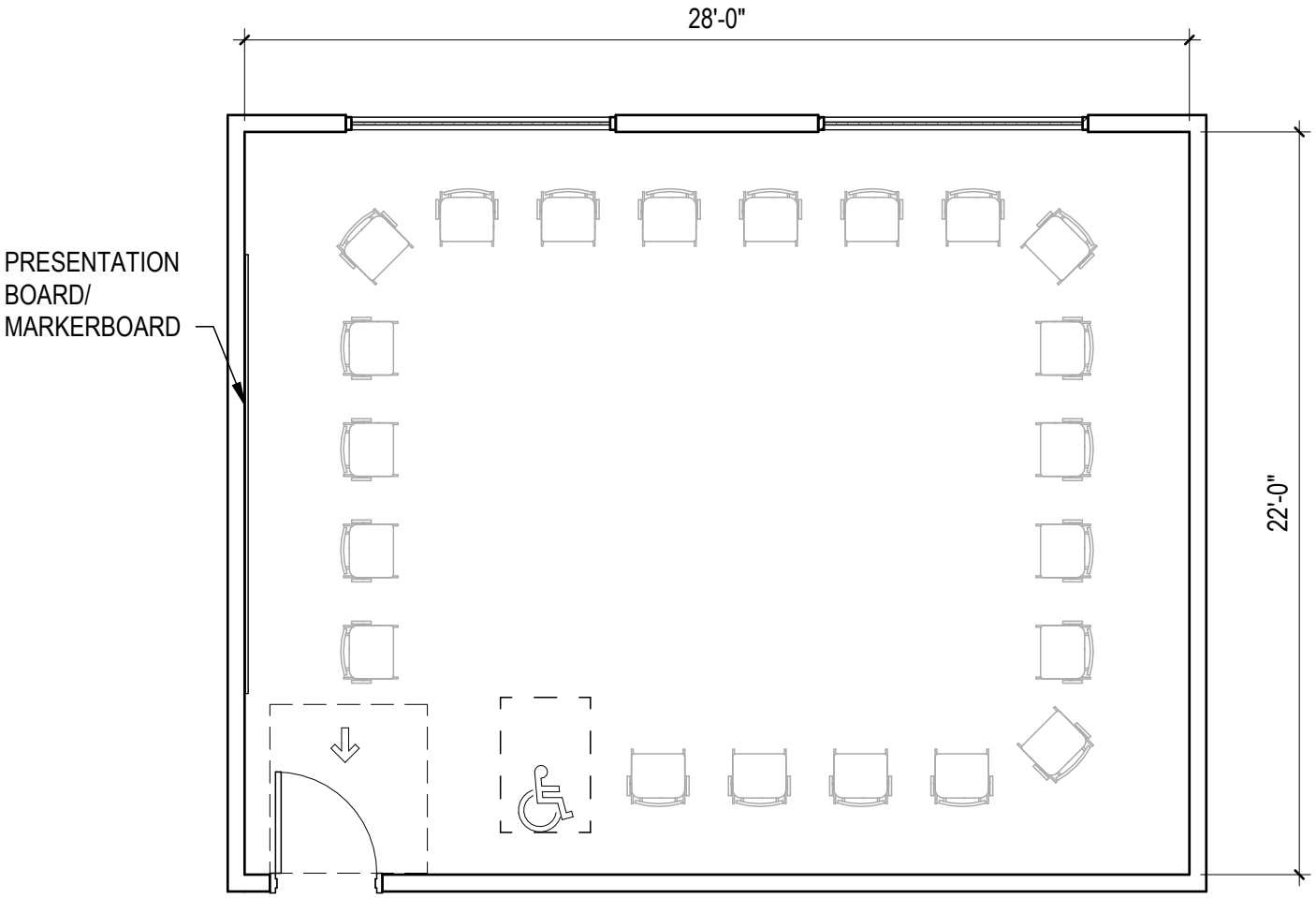
DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 1.12
SPACE NAME: Group Room	**# of Students: 20**	**NSF:** 620	

Describe the function of the space:

Space with flexible stackable seating and markerboard for group therapy sessions.

Adjacencies: Reception & Waiting

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - GROUP ROOM

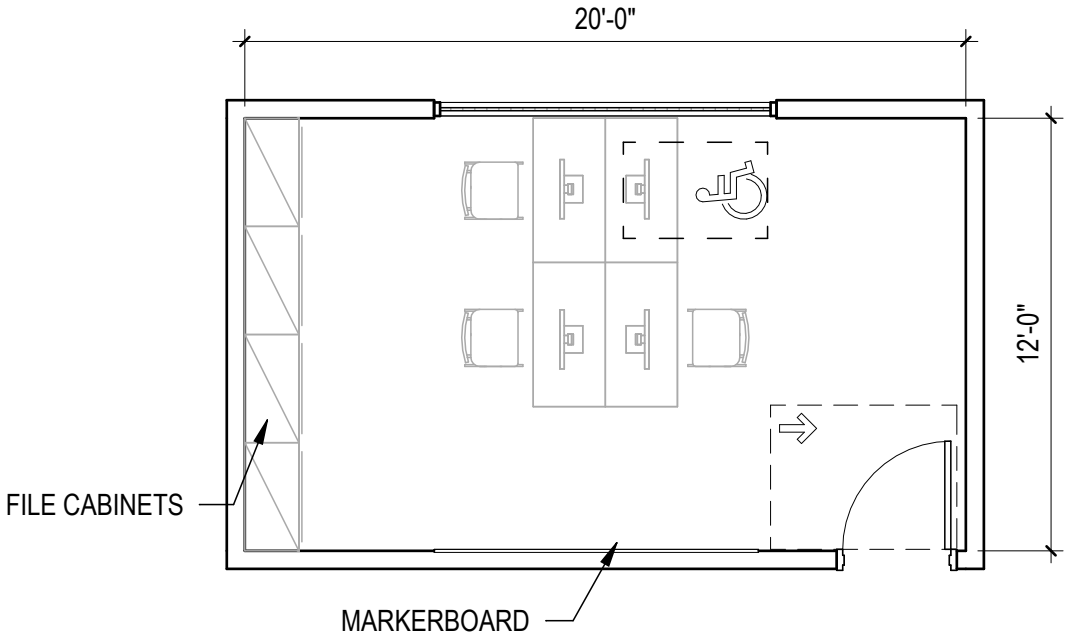
DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** 4	**# OF SPACES:** 1	**SPACE ID NO:** 1.13
SPACE NAME: Work Area	**# of Students:** -	**NSF:** 240	

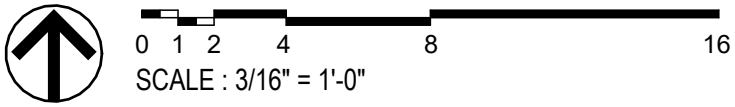
Describe the function of the space:

Data entry space with filing area and printer for those working in the clinic.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

PSYCH - WORK AREA

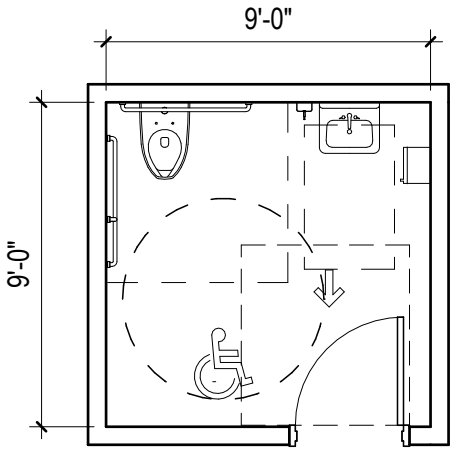
DEPARTMENT: School of Psychology Training Clinic	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 1.14
SPACE NAME: Toilet Room	# of Students: 1	NSF: 85	

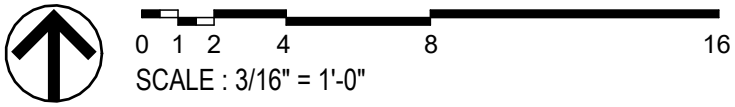
Describe the function of the space:

Restroom use by Training Clinic staff and clients.

Adjacencies: Waiting, Group Room, & Treatment Rooms

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Porcelain Tile	-	-
base	casework finishes	acoustic
Porcelain Tile	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Ceramic Tile	Gypsum	-





SCALE : 3/16" = 1'-0"

PSYCH - TOILET ROOM

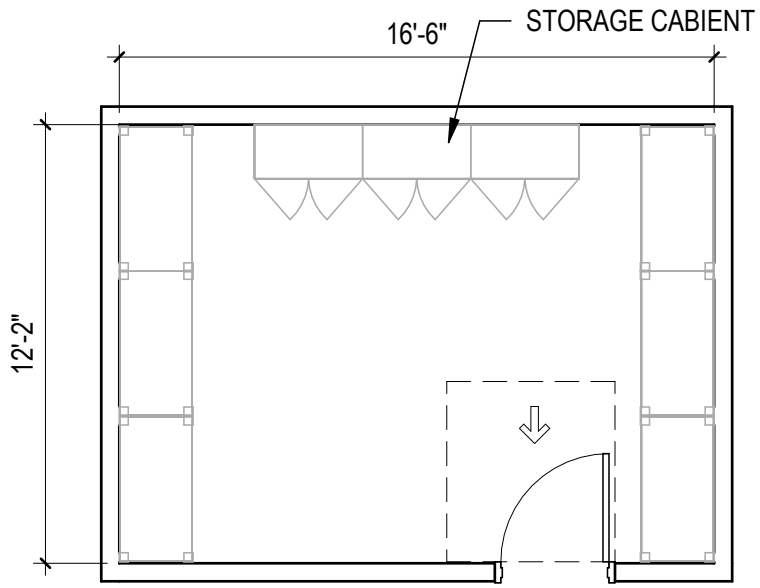
DEPARTMENT: School of Psychology Training Clinic	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 1.15
SPACE NAME: Storage	**# of Students:** -	**NSF:** 200	

Describe the function of the space:

Storage for test kits, materials, and therapeutic devices.

Adjacencies: Reception & Work Area

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - STORAGE

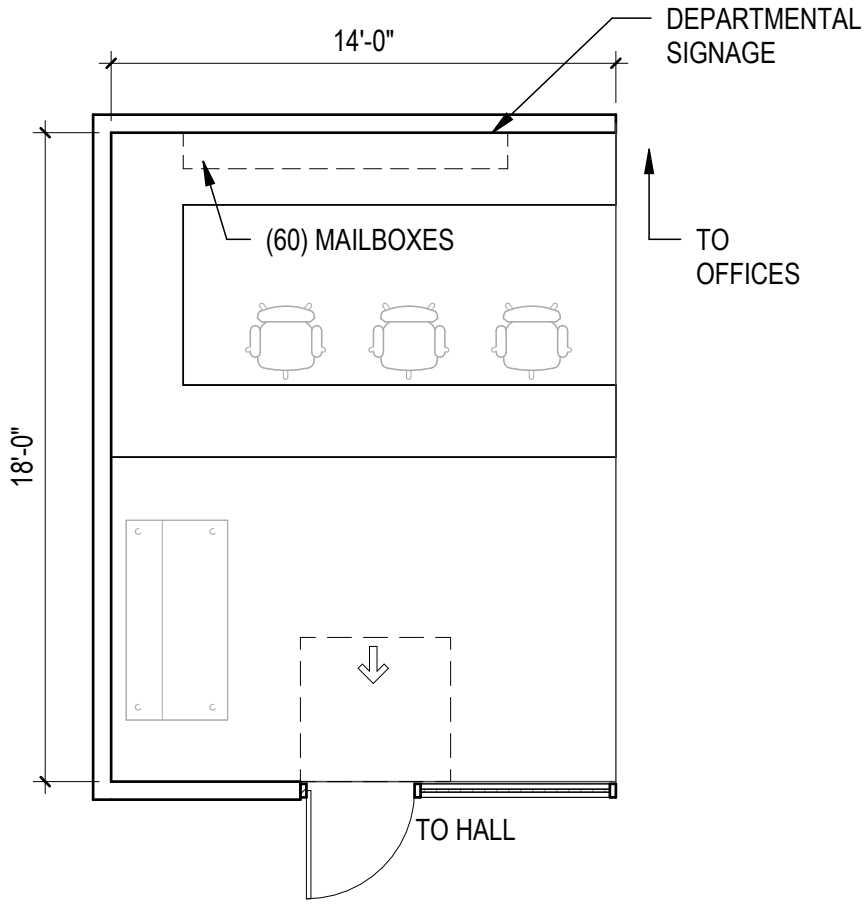
DEPARTMENT: School of Psychology Office & Administration	**# of Faculty/Staff:** 1-3	**# OF SPACES:** 1	**SPACE ID NO:** 1.16
SPACE NAME: Main Office Entry	**# of Students:** 1-3	**NSF:** 250	

Describe the function of the space:

Main office entry suite and point of contact for School of Psychology.

Adjacencies: Director Office, (3) Staff Offices, Psi Chi Office, & Break / Work Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Accoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - MAIN OFFICE ENTRY

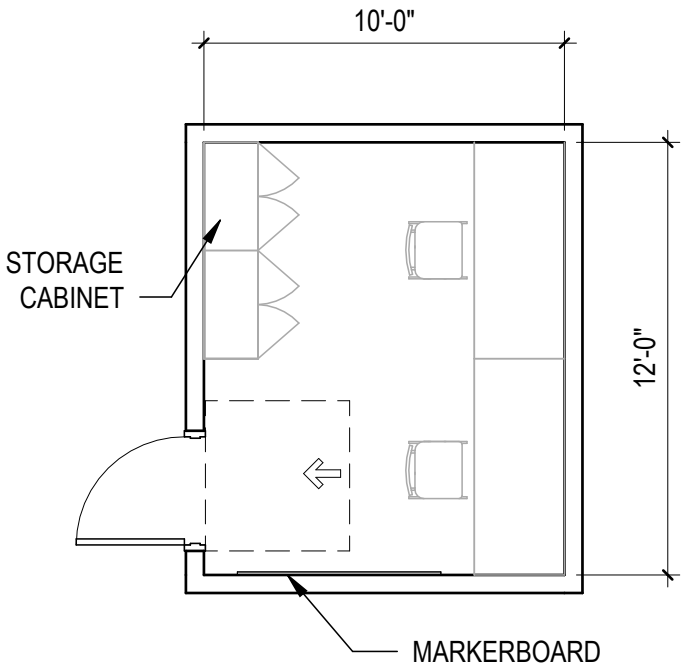
DEPARTMENT: School of Psychology Office & Administration	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 1.21
SPACE NAME: Office - Psi Chi	**# of Students:** 2	**NSF:** 120	

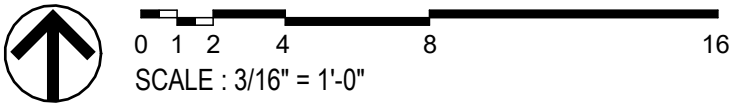
Describe the function of the space:

Office for Psi Chi club leaders to conduct operational activities and work with club member's confidential information.

Adjacencies: Main Office Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

PSYCH - OFFICE PSI CHI

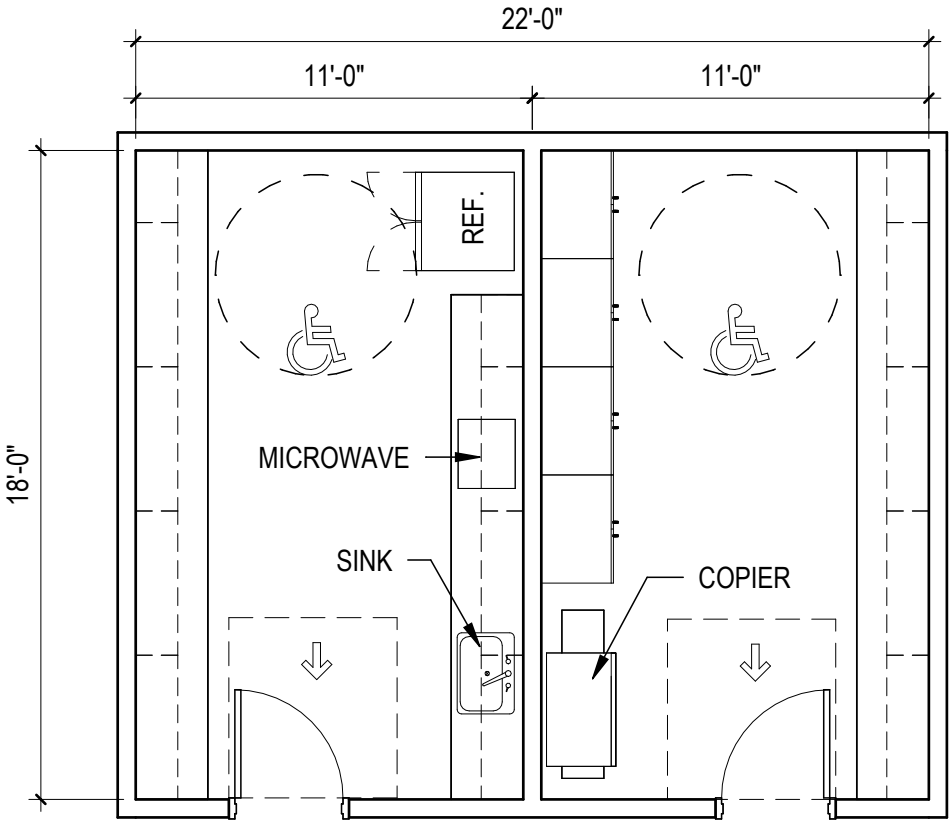
DEPARTMENT: School of Psychology Office & Administration	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 1.23
SPACE NAME: Break / Work Room	**# of Students:** -	**NSF:** 400	

Describe the function of the space:

Break / Work Room with kitchenette, copier, and office supplies.

Adjacencies: Main Office Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - BREAK / WORK ROOM

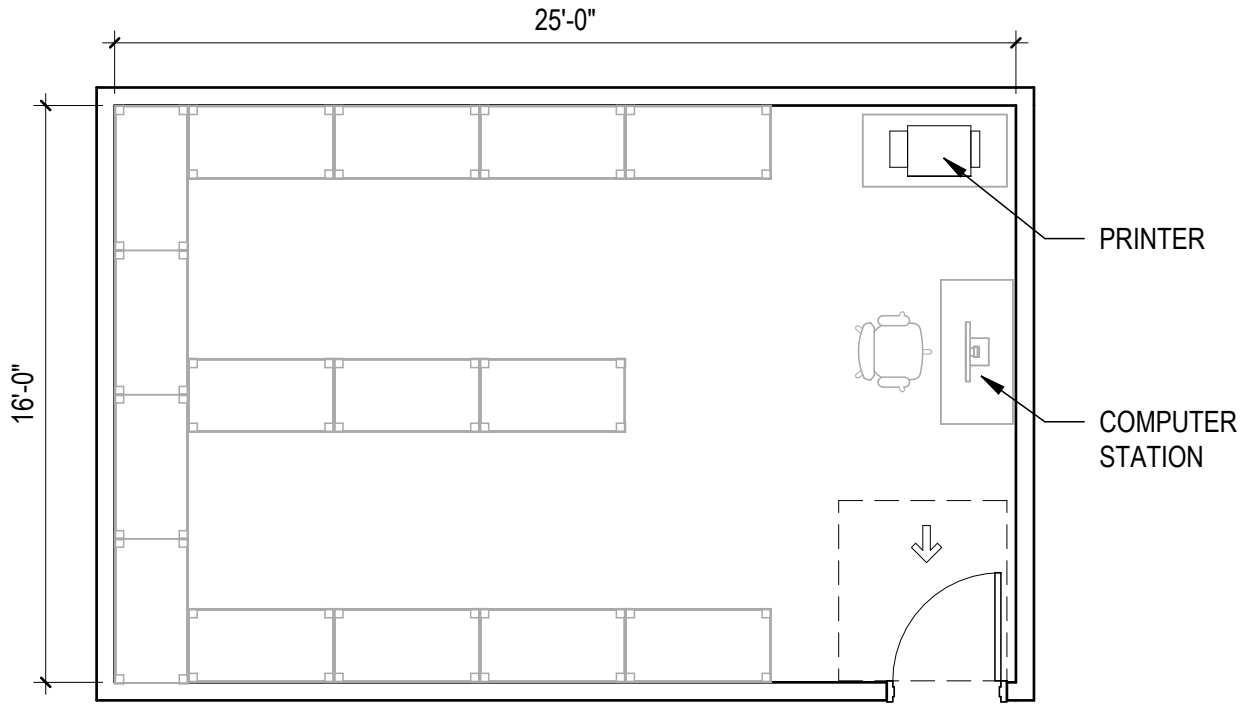
DEPARTMENT: School of Psychology Office & Administration	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 1.22
SPACE NAME: Storage - Testing	**# of Students:** -	**NSF:** 400	

Describe the function of the space:

Storage with deep shelving and computer station for testing checkout and printing.

Adjacencies: Main Office Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

PSYCH - STORAGE TESTING

EDUCATION

DEPARTMENT: School of Education Instructional Lab	**# of Faculty/Staff:** 1	**# OF SPACES:** 2	**SPACE ID NO:** 2.1
SPACE NAME: Science Education Lab	**# of Students: 24**	**NSF:** 2400	

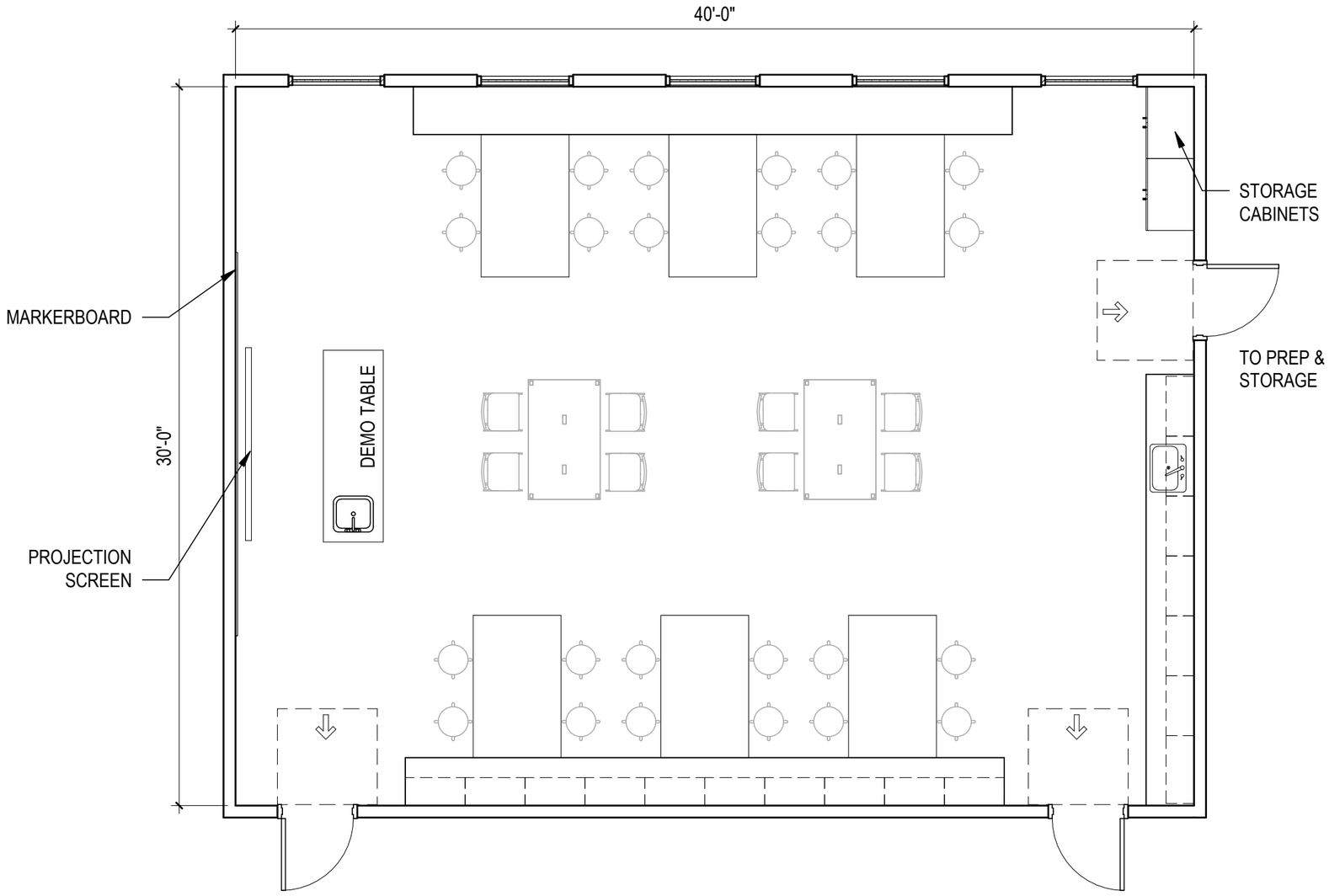
Describe the function of the space:

Lab outfitted as a k-12 science classroom with no fume hood or chemical use. Used for Social Studies too.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate & Epoxy	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

ED - SCIENCE EDUCATION LAB

DEPARTMENT: School of Education Instructional Lab	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 2.2
SPACE NAME: Literacy Library Lab	**# of Students: 24**	**NSF:** 1,200	

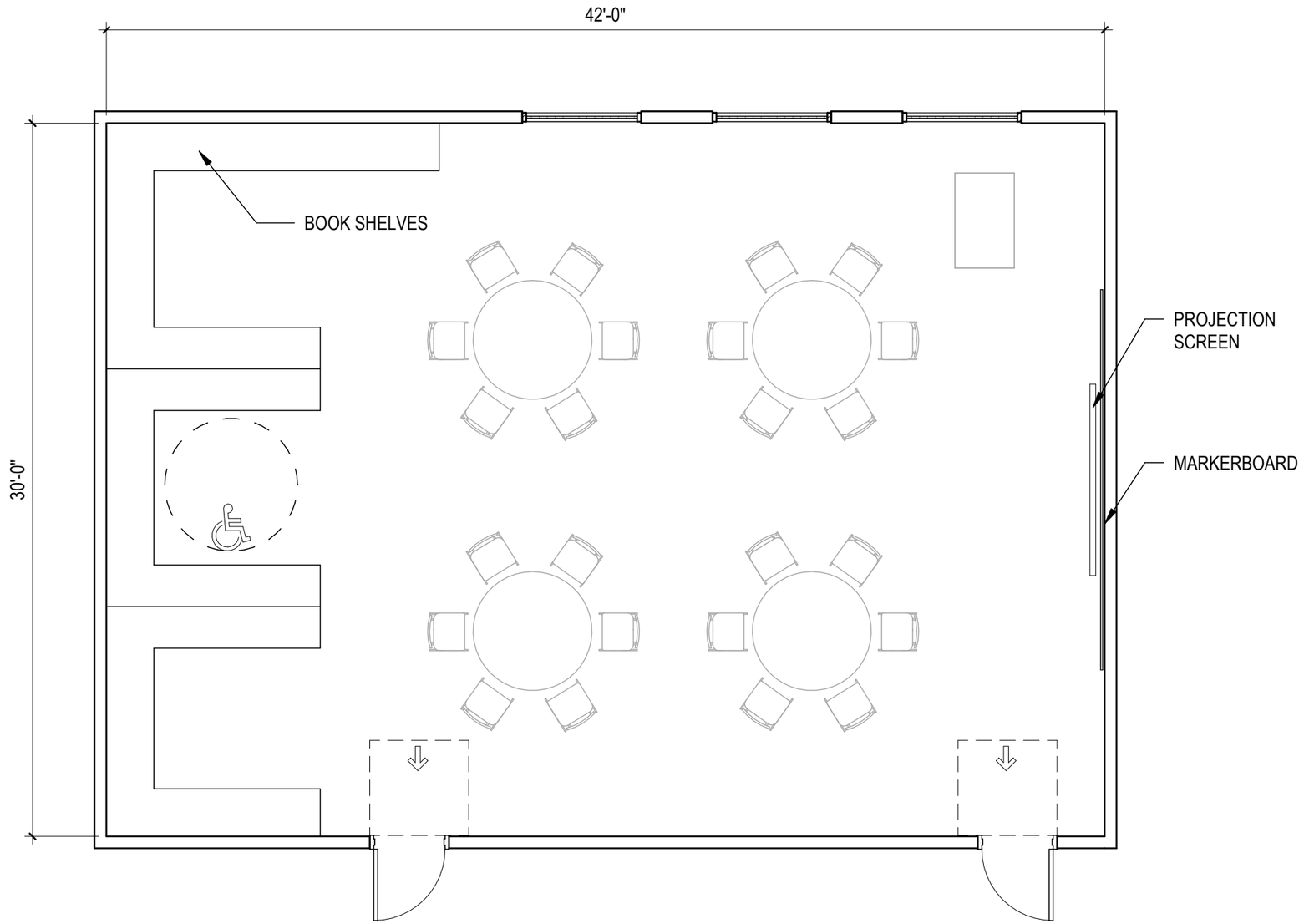
Describe the function of the space:

Lab outfitted as a k-12 library with instructional area.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

ED - LITERACY LIBRARY LAB

DEPARTMENT: School of Education Instructional Lab	**# of Faculty/Staff:** 1-4	**# OF SPACES:** 1	**SPACE ID NO:** 2.6
SPACE NAME: Sci Ed Prep & Storage	**# of Students:** -	**NSF:** 250	

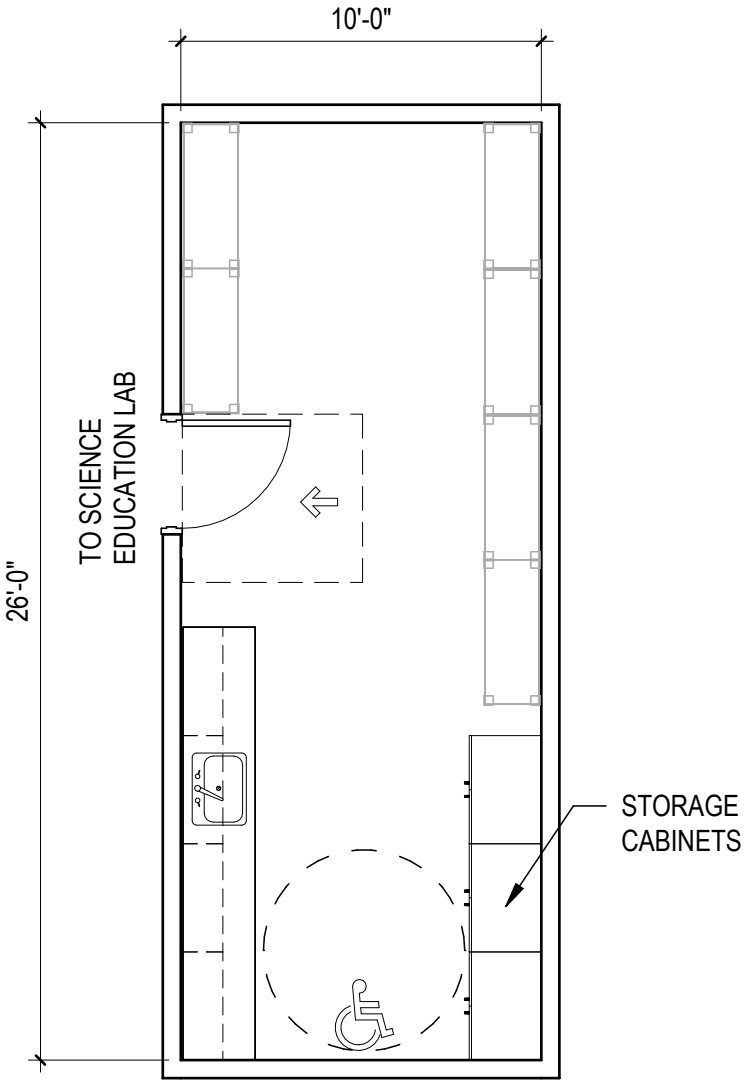
Describe the function of the space:

Storage to store and prepare materials for Science Education.

Adjacencies: Science Education Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate & Epoxy	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

ED - SCI ED PREP & STORAGE

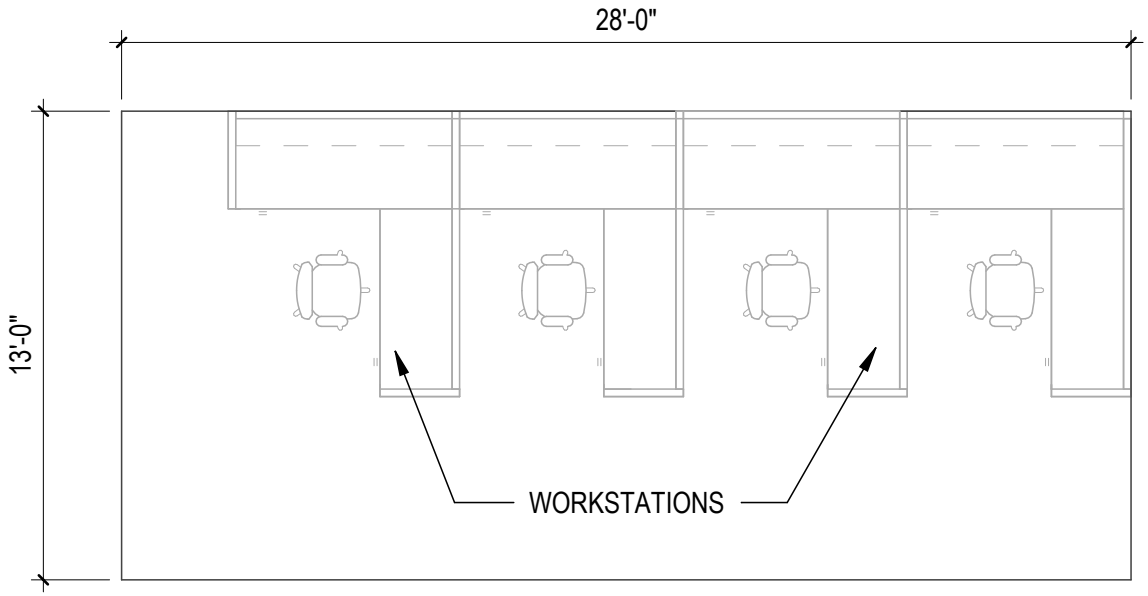
DEPARTMENT: School of Education Field Experience Program	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 2.8
SPACE NAME: Open Workstations	**# of Students:** 8	**NSF:** 360	

Describe the function of the space:

Workstations for the Field Experience Program.

Adjacencies: Offices

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

ED - OPEN WORKSTATIONS

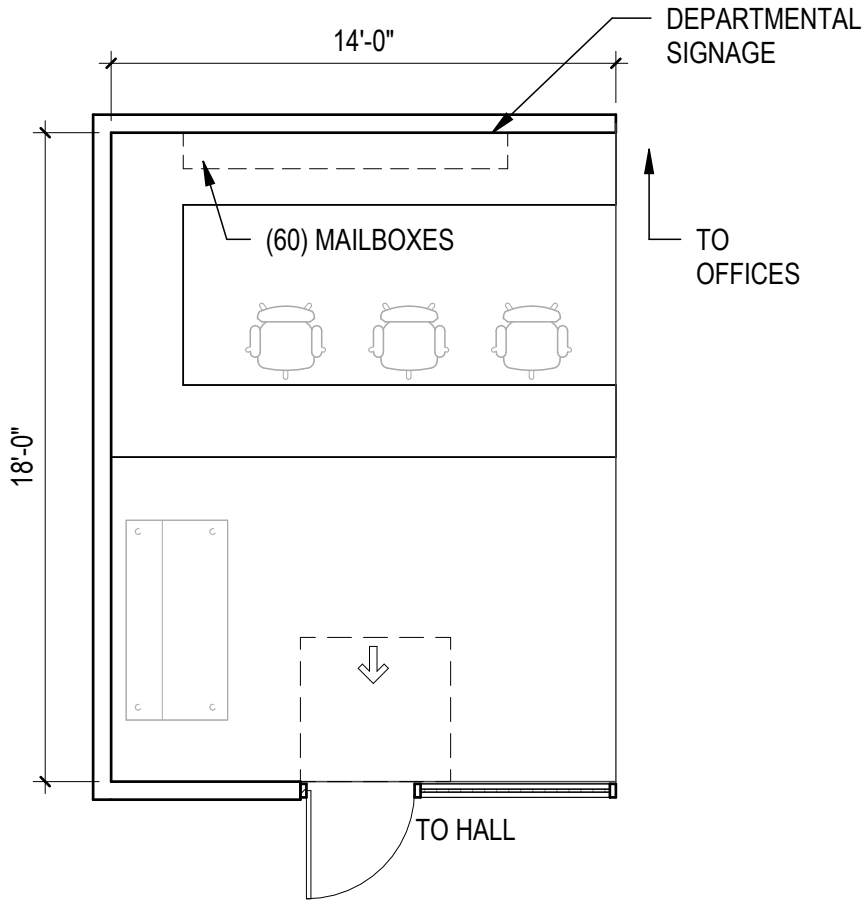
DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** 1-3	**# OF SPACES:** 1	**SPACE ID NO:** 2.14
SPACE NAME: Main Office Entry	**# of Students:** 1-3	**NSF:** 200	

Describe the function of the space:

Main office entry suite and point of contact for the School of Education.

Adjacencies: Director Office & Work Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

ED - MAIN OFFICE ENTRY

DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 2.12
SPACE NAME: Clothing Closet	**# of Students:** -	**NSF:** 500	

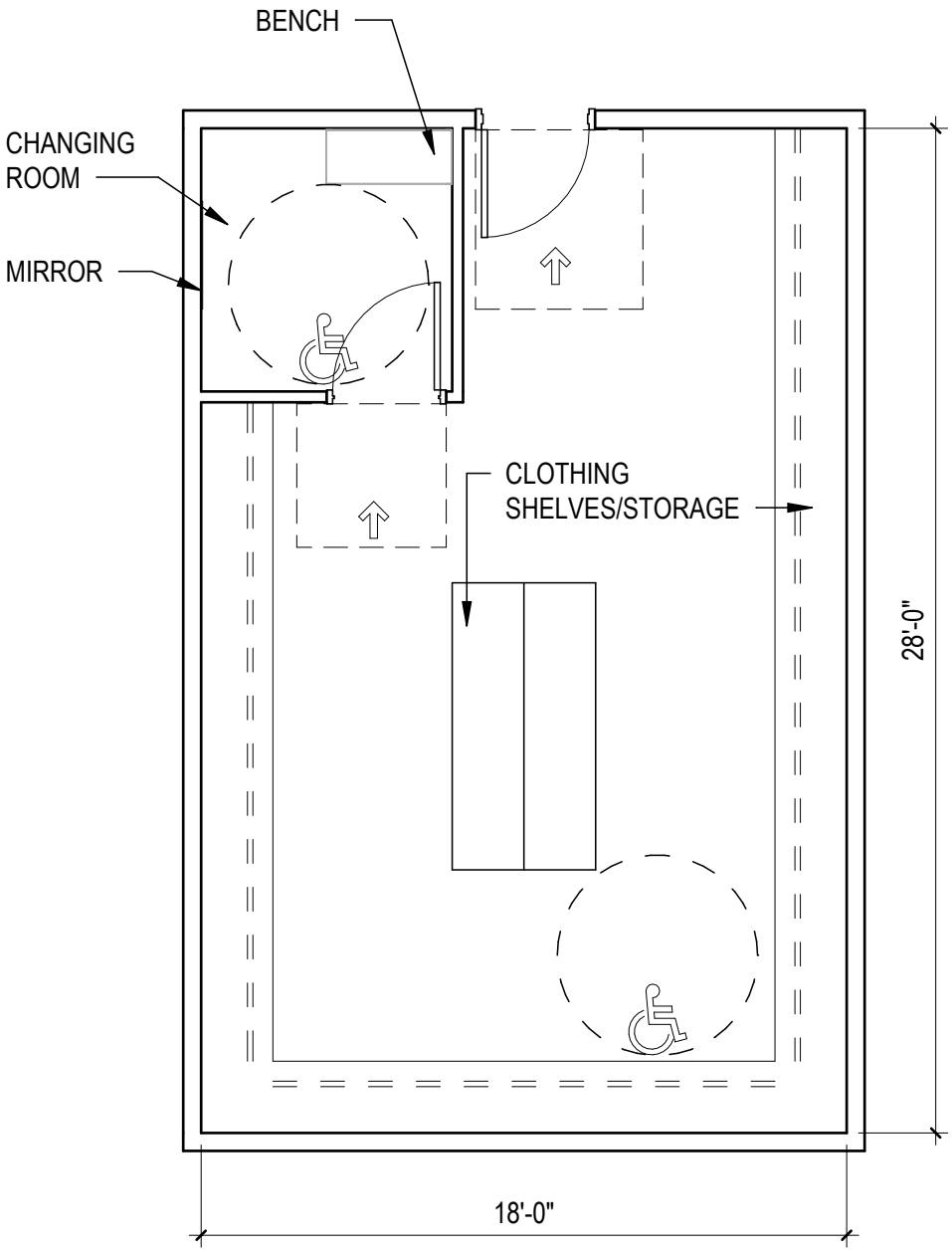
Describe the function of the space:

Space for clothing storage, display, and changing room to support this grant funded program.

Adjacencies: Field Experience Suite

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

ED - CLOTHING CLOSET

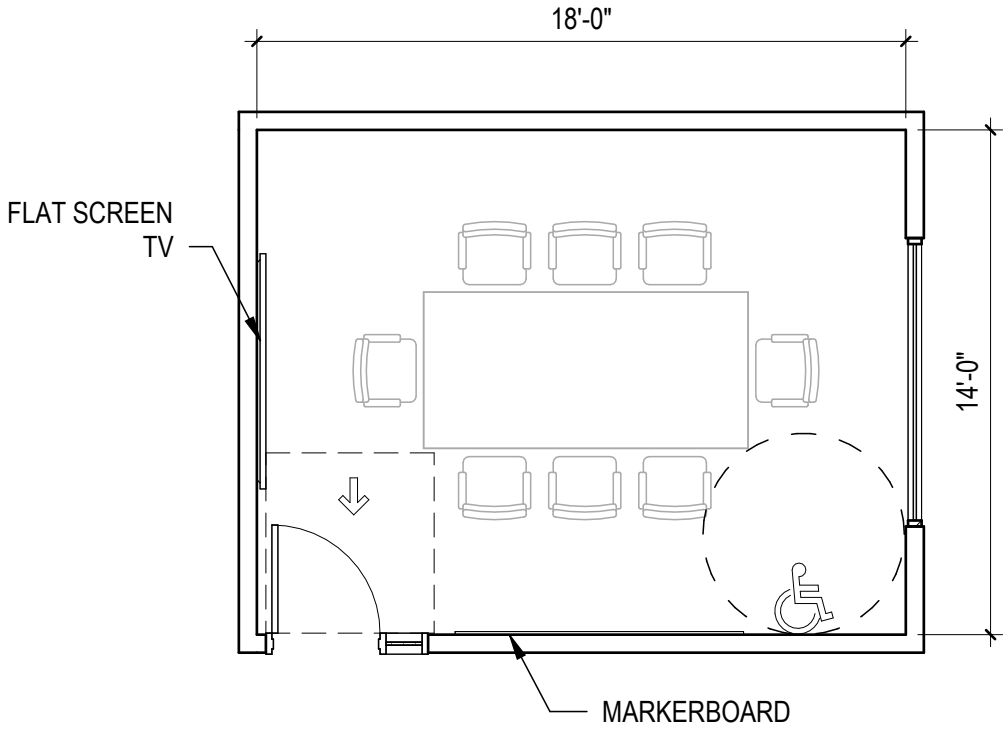
DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** 8	**# OF SPACES:** 1	**SPACE ID NO:** 5.13
SPACE NAME: Meeting Room	**# of Students:** -	**NSF:** 250	

Describe the function of the space:

Meeting space for regular use by School of Education faculty and staff.

Adjacencies: Main Office Entry & Director Office

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SHARED SPACES - MEETING ROOM 8

DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** 16	**# OF SPACES:** 1	**SPACE ID NO:** 5.14
SPACE NAME: Break Room	**# of Students:** -	**NSF:** 560	

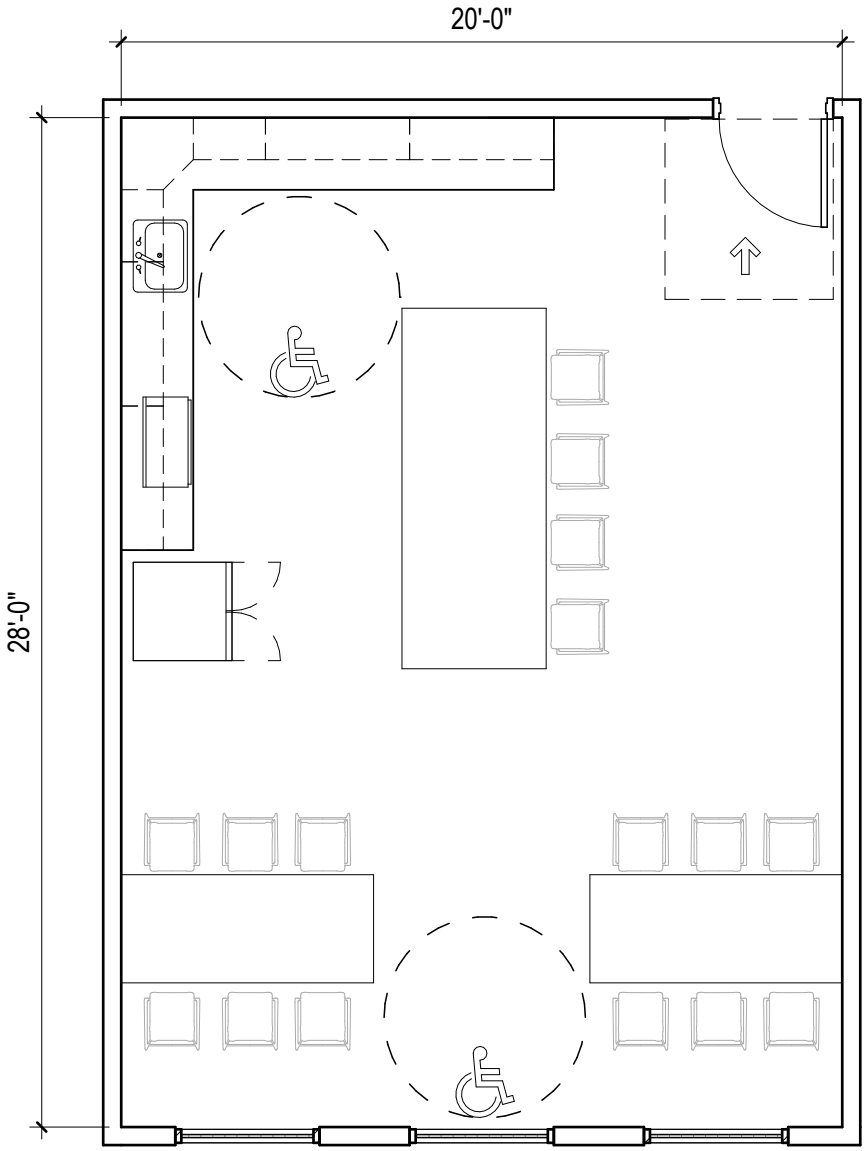
Describe the function of the space:

Break Room and gathering space for School of Education faculty and staff.

Adjacencies: Offices

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - BREAK ROOM

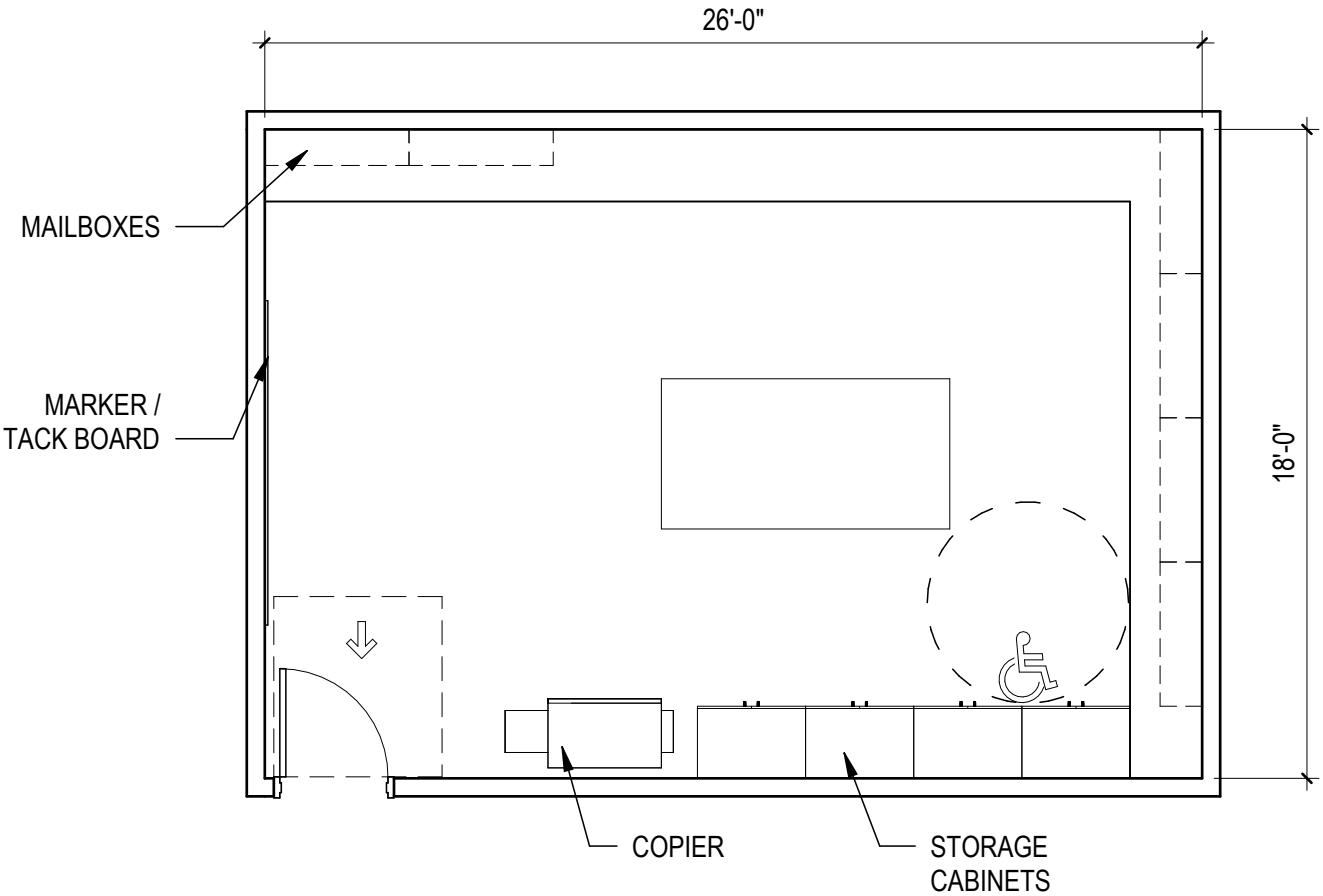
DEPARTMENT: School of Education Office & Administration	**# of Faculty/Staff:** 3	**# OF SPACES:** 1	**SPACE ID NO:** 5.15
SPACE NAME: Work Room	**# of Students:** -	**NSF:** 460	

Describe the function of the space:

Work Room and support space for School of Education faculty and staff.

Adjacencies: Offices

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SHARED SPACES - WORK ROOM

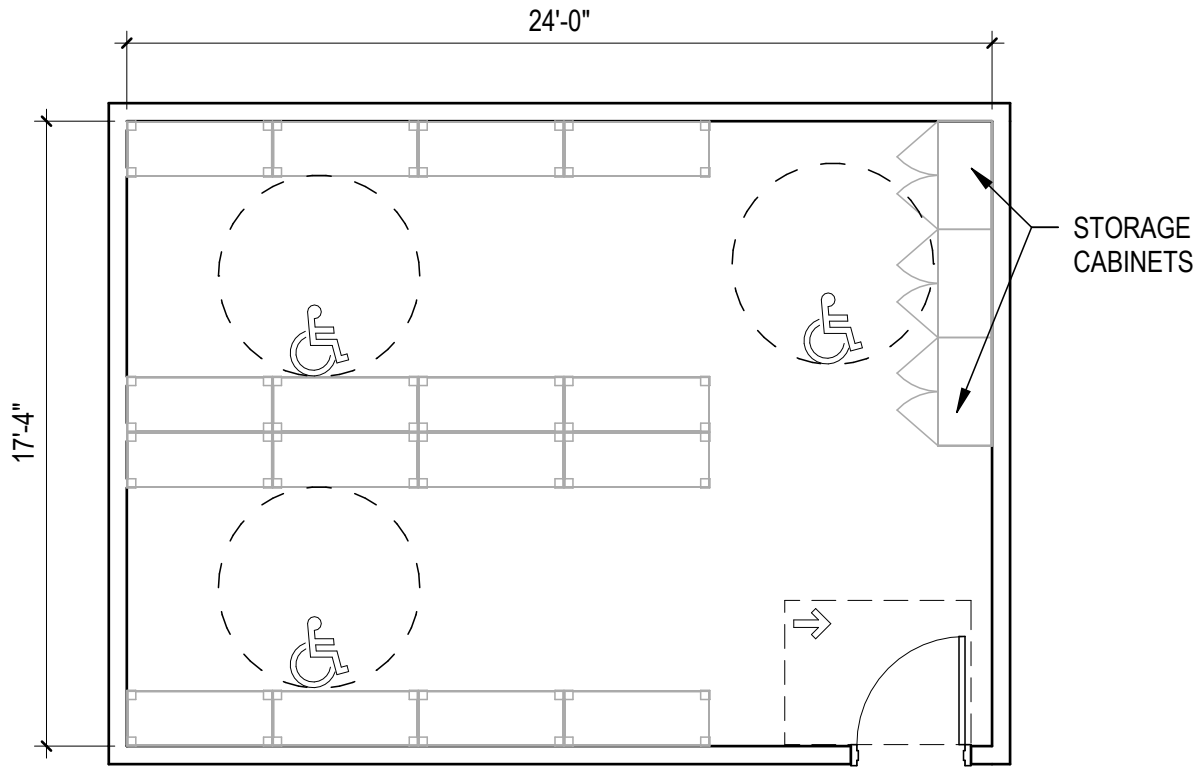
DEPARTMENT: School of Education Office & Administration	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 2.13
SPACE NAME: Storage	# of Students: -	NSF: 400	

Describe the function of the space:

Storage space for educational materials used in the instructional labs.

Adjacencies: Instructional Labs

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

ED - STORAGE

COUNSELING & WELLNESS SERVICES

DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: 2	# OF SPACES: 1	SPACE ID NO: 3.1
SPACE NAME: Counseling Reception	# of Students: Varies	NSF: 600	

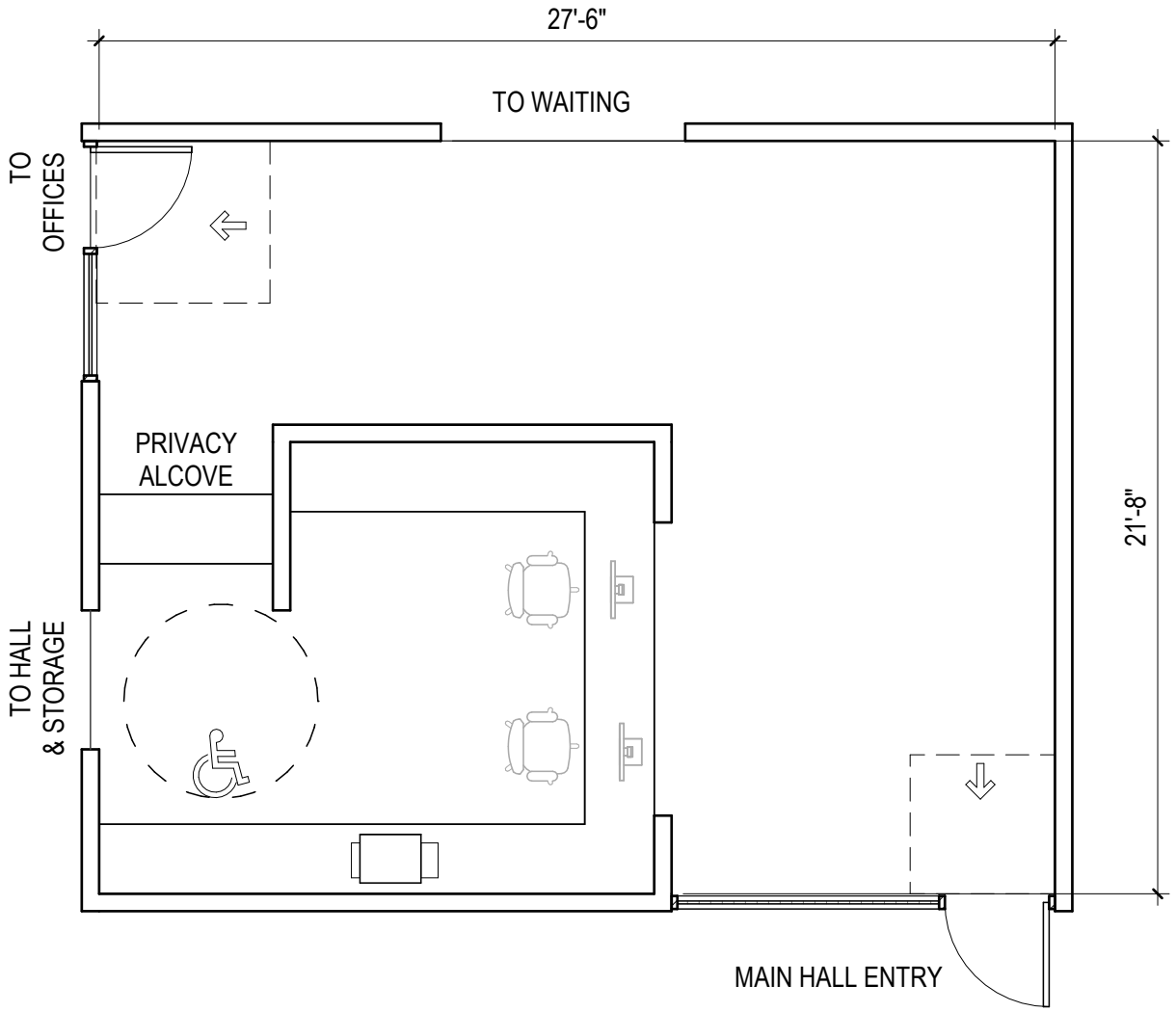
Describe the function of the space:

Reception and check-in area for Counseling Services clients.

Adjacencies: Entry, Waiting Area, & Controlled Storage

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems - Translucent
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

C&WS - COUNSELING RECEPTION

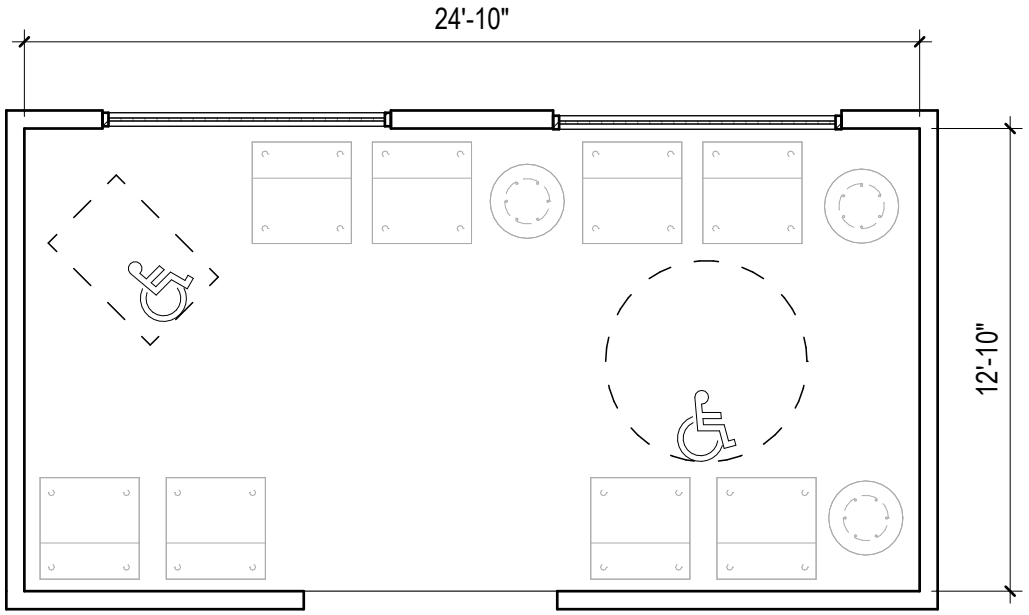
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.2
SPACE NAME: Counseling Waiting Area	# of Students: 8	NSF: 320	

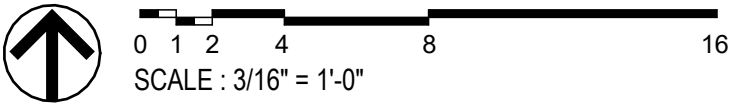
Describe the function of the space:

Waiting area for clients attending counseling sessions or receiving other support from Counseling Services.

Adjacencies: Counseling Reception & Suite Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

C&WS - COUNSELING WAITING

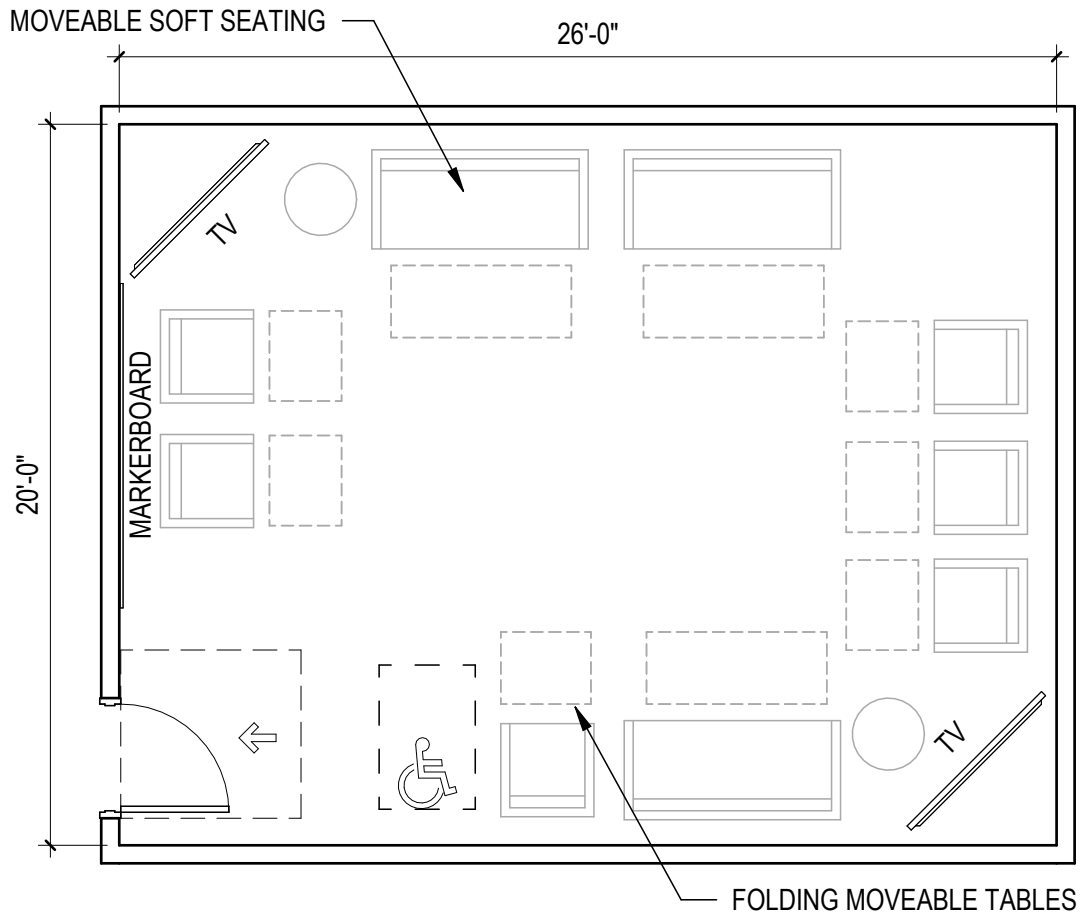
DEPARTMENT: Counseling & Wellness Services Counseling	**# of Faculty/Staff:** 1	**# OF SPACES:** 2	**SPACE ID NO:** 3.3
SPACE NAME: Group Room	**# of Students:** 12	**NSF:** 1,100	

Describe the function of the space:

Space for group therapy sessions and activities which may include games, training, and more.

Adjacencies: Counseling Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems - Translucent
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - GROUP ROOM

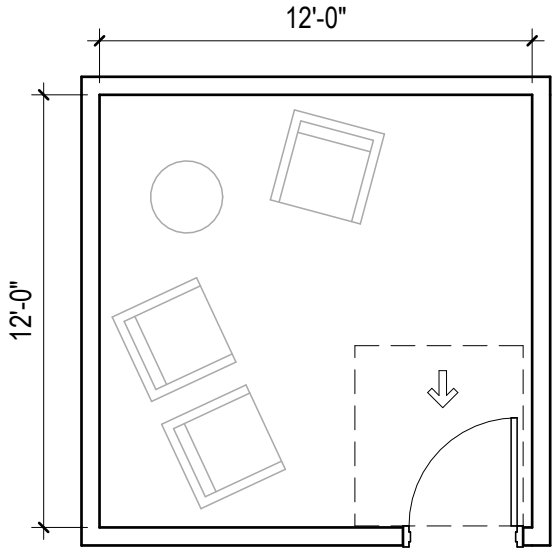
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 3	SPACE ID NO: 3.5
SPACE NAME: Trainee Room	# of Students: 1-3	NSF: 435	

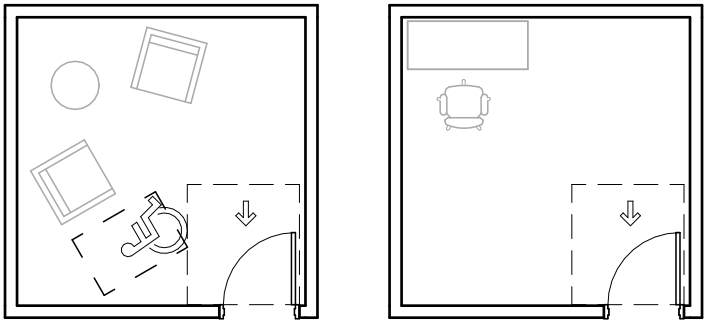
Describe the function of the space:

Space for counseling trainees to hold in-person and virtual practice sessions that will be recorded.

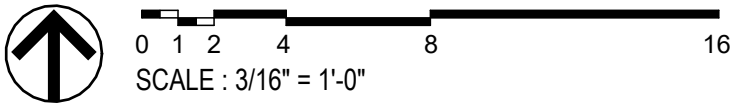
Adjacencies: Work Area - Trainee

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





ALTERNATIVE LAYOUTS SHOWN FOR REFERENCE (NTS)



SCALE : 3/16" = 1'-0"

C&WS - TRAINEE ROOM

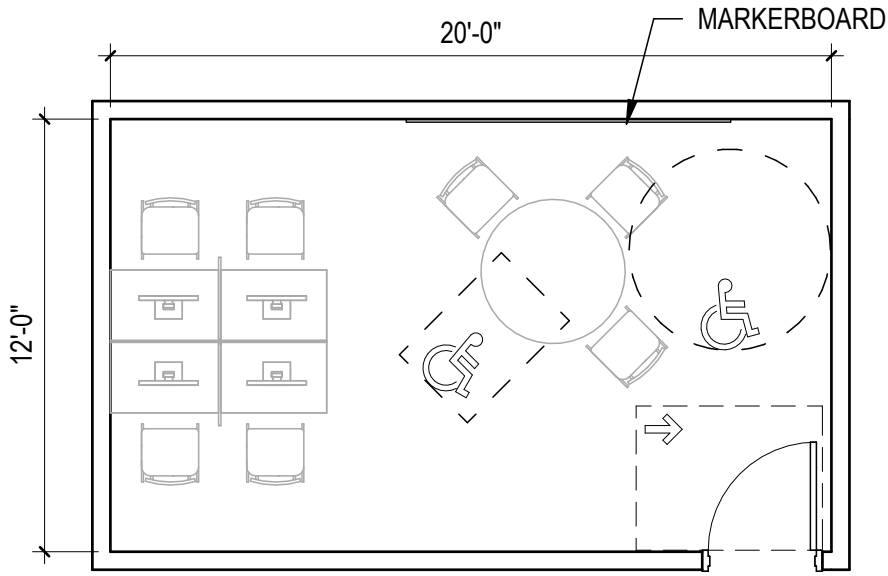
DEPARTMENT: Counseling & Wellness Services Counseling	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 3.6
SPACE NAME: Work Area - Trainee	**# of Students:** 3-6	**NSF:** 240	

Describe the function of the space:

Computer space for 3-5 students to share and collaborate.

Adjacencies: Training Rooms

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - WORK AREA TRAINEE

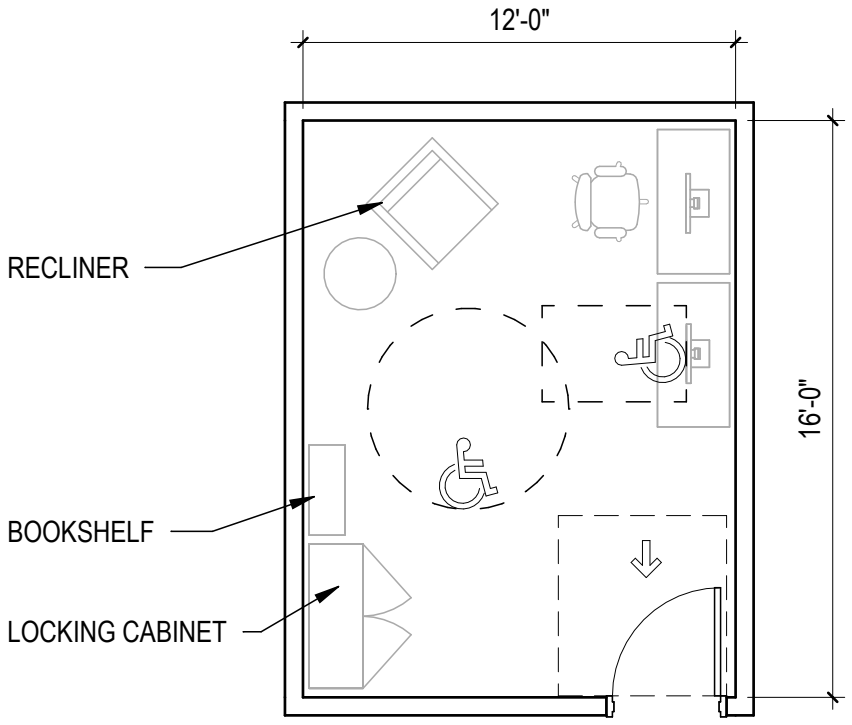
DEPARTMENT: Counseling & Wellness Services Counseling	**# of Faculty/Staff:** 1-2	**# OF SPACES:** 1	**SPACE ID NO:** 3.7
SPACE NAME: Bio Feedback Room	**# of Students:** 1-2	**NSF:** 200	

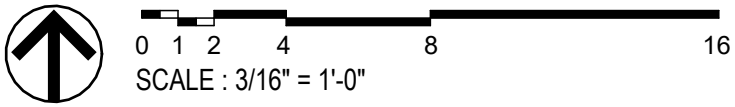
Describe the function of the space:

Space with specialized equipment for biofeedback sessions with clients.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

C&WS - BIO FEEDBACK ROOM

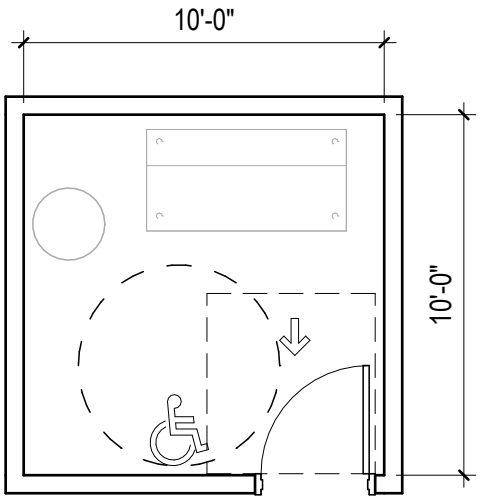
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.8
SPACE NAME: Quiet Room	# of Students: 1	NSF: 100	

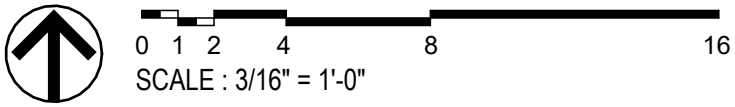
Describe the function of the space:

Space for students, faculty or staff who need to decompress from over stimulation, an emotional event, or other occurrence.

Adjacencies: Counseling Reception, Waiting Area, & Zoom Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

C&WS - QUIET ROOM

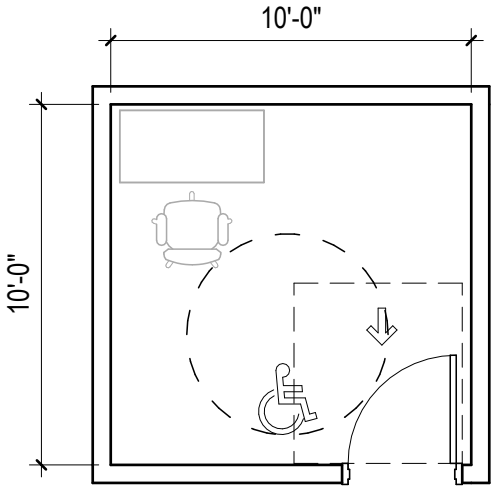
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.9
SPACE NAME: Zoom Room	# of Students: 1	NSF: 100	

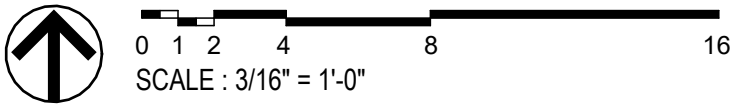
Describe the function of the space:

Space for students, faculty or staff to take virtual consultations, make calls to schedule consultations, and more.

Adjacencies: Counseling Reception, Waiting Area, & Quiet Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





C&WS - ZOOM ROOM

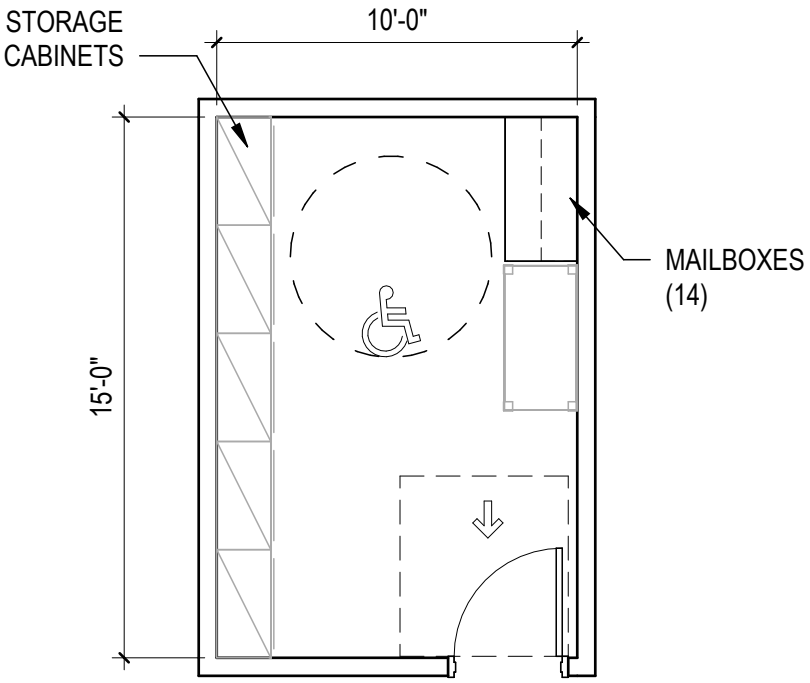
DEPARTMENT: Counseling & Wellness Services Counseling	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.11
SPACE NAME: Storage - Controlled	# of Students: -	NSF: 150	

Describe the function of the space:

Controlled storage space for Counseling Services recording equipment, records, mailboxes, and more.

Adjacencies: Counseling Reception

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - STORAGE CONTROLLED

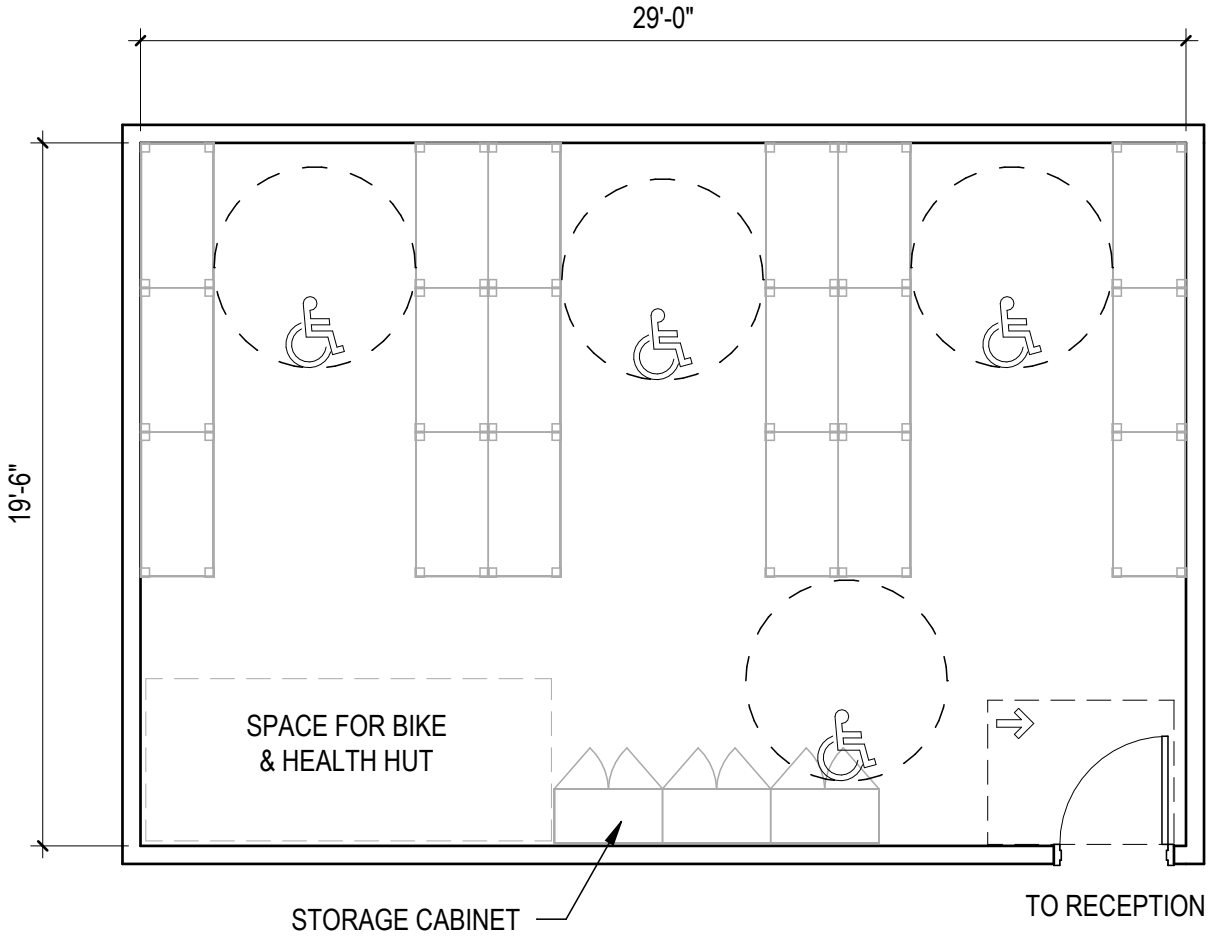
DEPARTMENT: Counseling & Wellness Services Wellness	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.14
SPACE NAME: Storage	# of Students: -	NSF: 560	

Describe the function of the space:

Storage space for Wellness equipment and supplies.

Adjacencies: Peer Health Educators & Offices

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - WELLNESS STORAGE

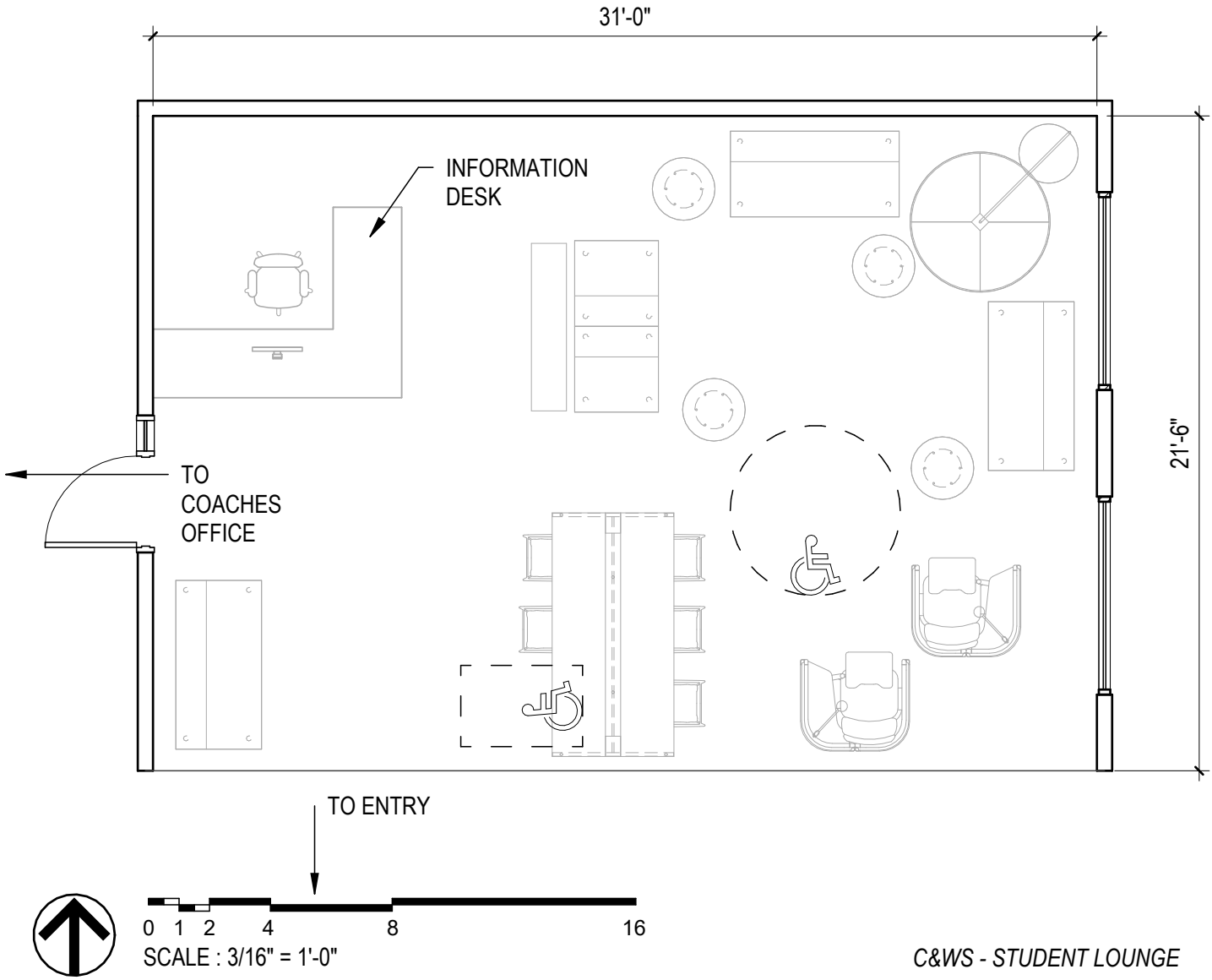
DEPARTMENT: Counseling & Wellness Services Eagles For Recovery Program	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 3.15
SPACE NAME: Student Lounge	**# of Students:** 16	**NSF:** 650	

Describe the function of the space:

Space for Eagles in Recovery students to meet or get support on their journey.

Adjacencies: Peer Health Educators & Coach Office

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



C&WS - STUDENT LOUNGE

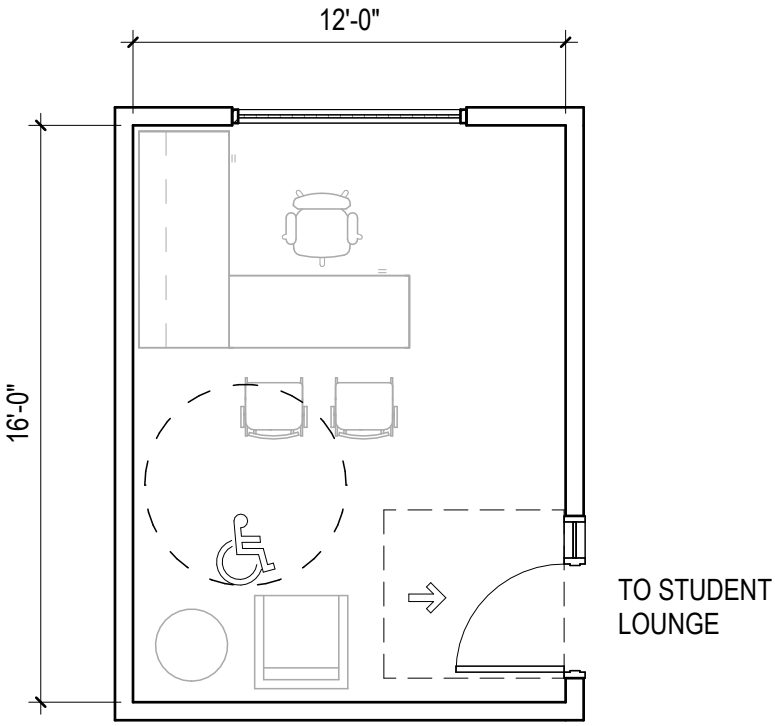
DEPARTMENT: Counseling & Wellness Services Eagles For Recovery Program	# of Faculty/Staff: 1	# OF SPACES: 1	SPACE ID NO: 3.16
SPACE NAME: Office - Coach	# of Students: 1-3	NSF: 200	

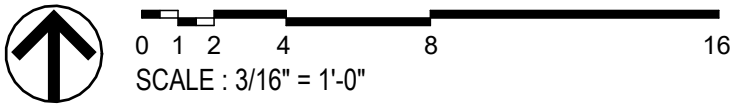
Describe the function of the space:

Office for confidential meetings with students and staff supporting the Eagles for Recovery program.

Adjacencies: Eagles for Recovery Lounge & Peer Health Educators

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





SCALE : 3/16" = 1'-0"

C&WS - OFFICE COACH

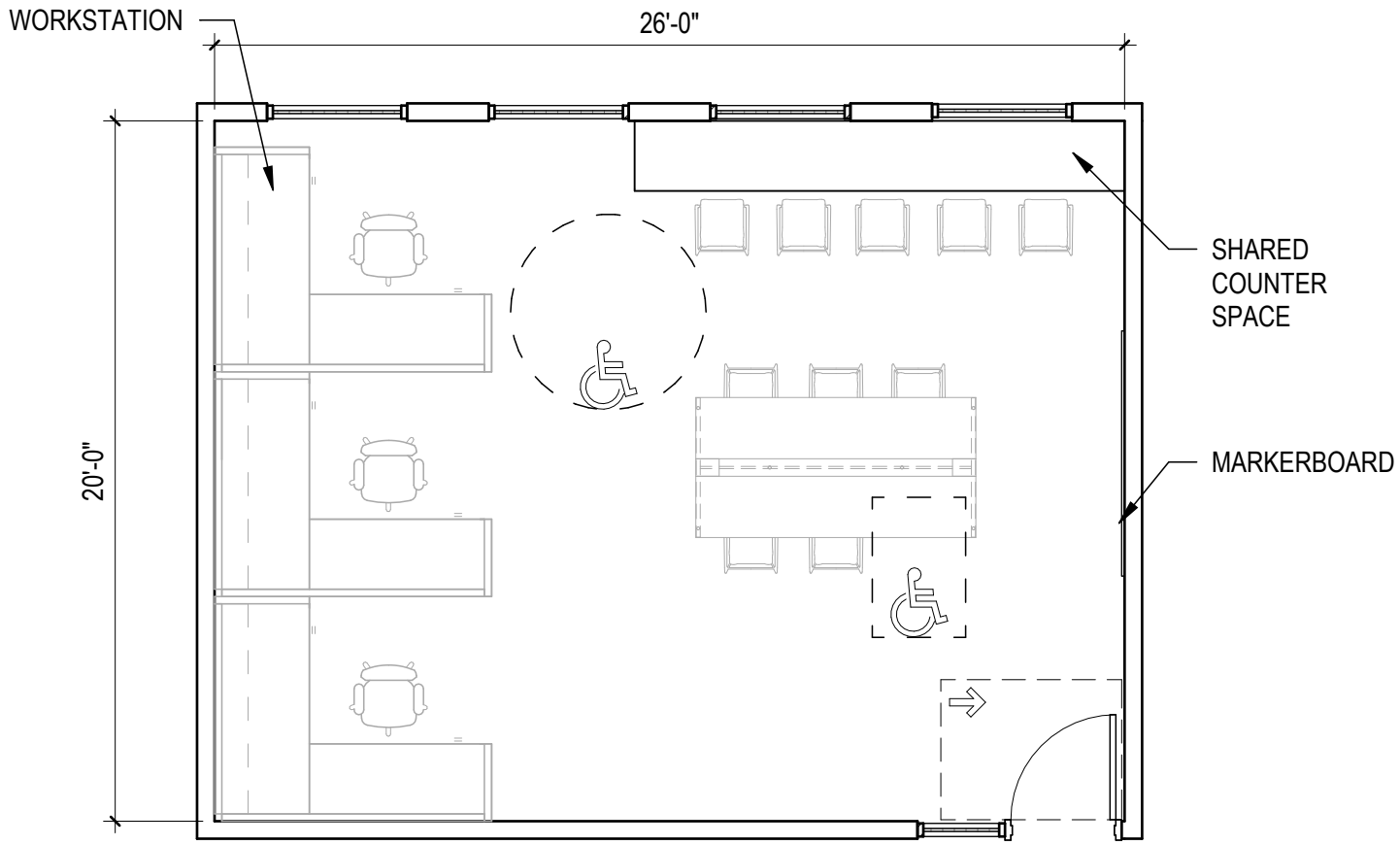
DEPARTMENT: Counseling & Wellness Services Eagles For Recovery Program	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 3.17
SPACE NAME: Peer Health Educators	**# of Students:** 6	**NSF:** 500	

Describe the function of the space:

Space for Peer Health Educators to work, plan, and prepare for campus wellness outreach and events.

Adjacencies: Eagles for Recovery Lounge & Coach Office

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - PEER HEALTH EDUCATORS

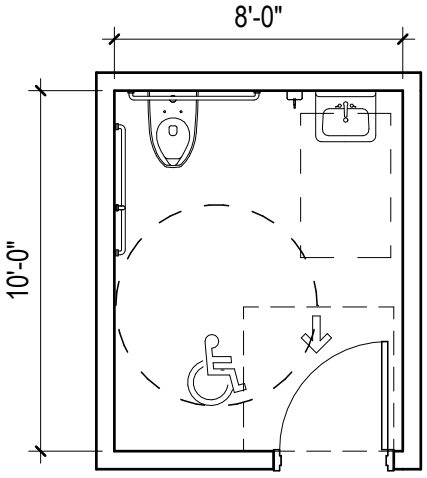
DEPARTMENT: Counseling & Wellness Services Shared Support	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 3.18
SPACE NAME: Toilet Room	# of Students: 1	NSF: 80	

Describe the function of the space:

Toilet Room for use by counselors, coaches, and staff in Counseling and Wellness Services to ensure that staff have a private space to utilize the facilities that is separate from clients.

Adjacencies: Work Room & Break Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Porelain Tile	-	-
base	casework finishes	acoustic
Porcelain Tile	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Ceramic Tile	Gypsum	-



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SCALE : 3/16" = 1'-0"

C&WS - TOILET ROOM

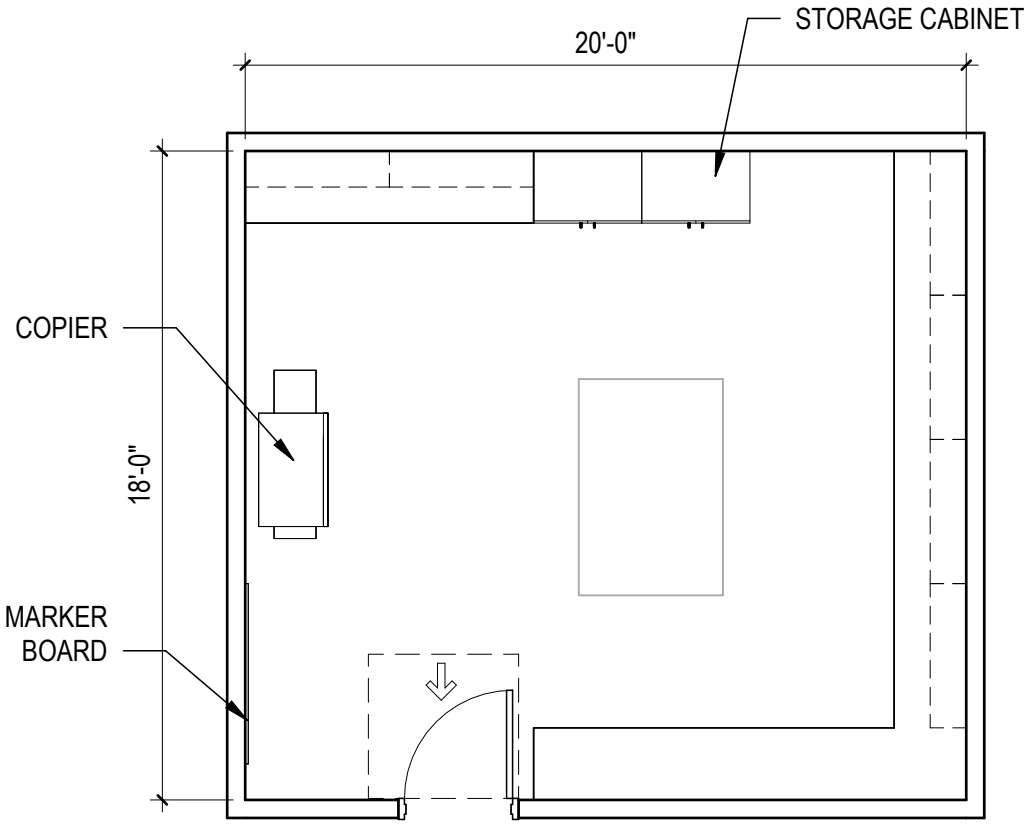
DEPARTMENT: Counseling & Wellness Services Shared Support	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 3.19
SPACE NAME: Work Room	**# of Students:** 3	**NSF:** 360	

Describe the function of the space:

Space for the production and preparation of materials to support the Counseling and Wellness programs and events.

Adjacencies: Break Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

C&WS - WORK ROOM

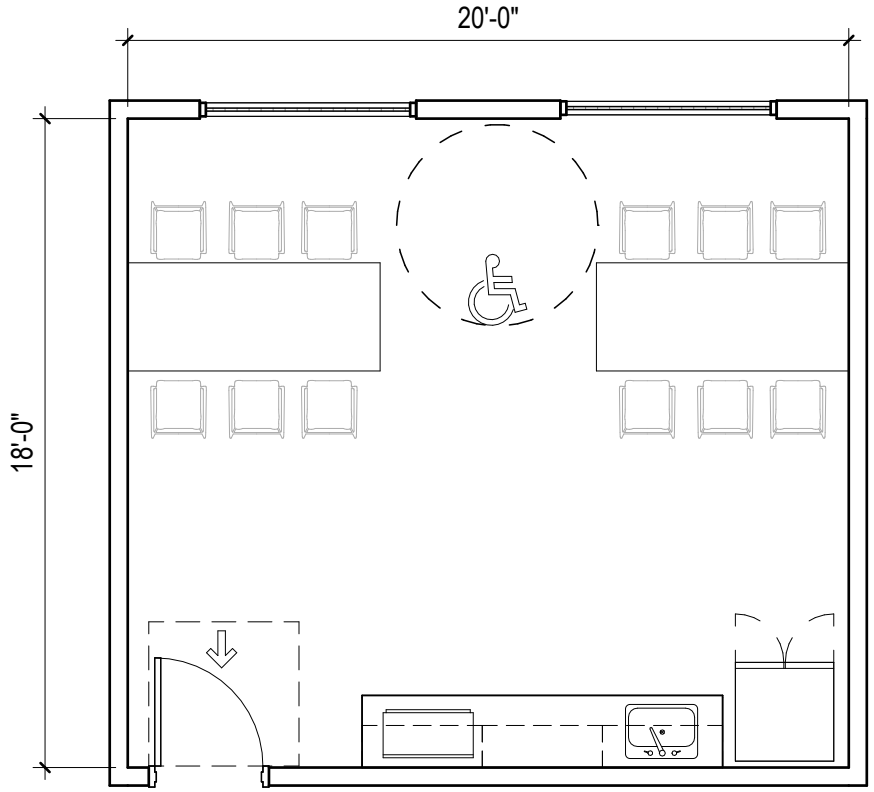
DEPARTMENT: Counseling & Wellness Services Shared Support	**# of Faculty/Staff:** 12	**# OF SPACES:** 1	**SPACE ID NO:** 3.20
SPACE NAME: Break Room	**# of Students:** -	**NSF:** 360	

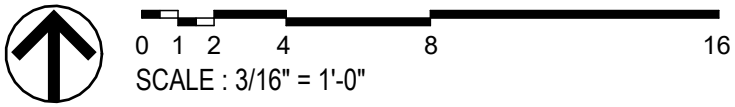
Describe the function of the space:

Break Room for use by counselors, coaches, and staff in Counseling and Wellness Services to ensure that staff have a private space to decompress that is separate from clients.

Adjacencies: Work Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic tile	-





SCALE : 3/16" = 1'-0"

C&WS - BREAK ROOM

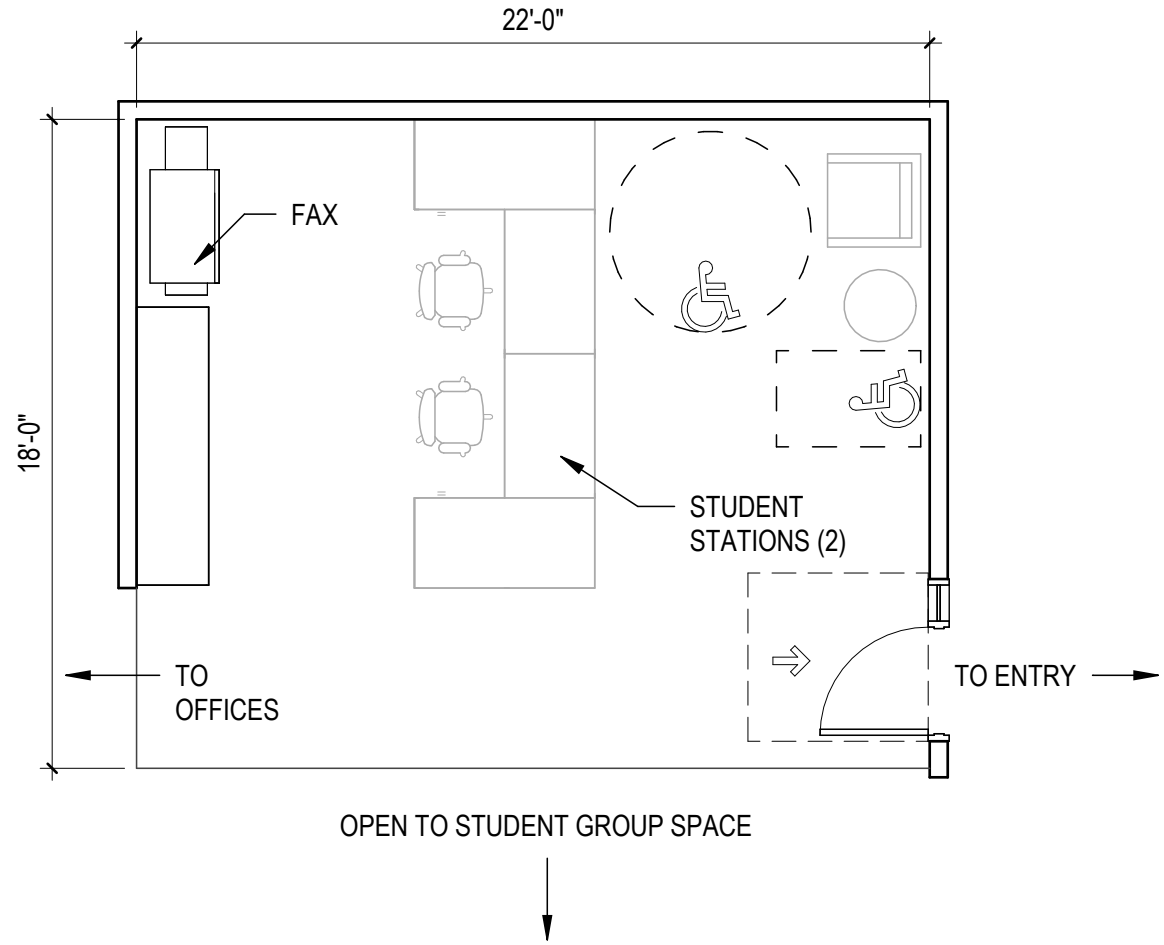
STUDENT ACCOMMODATIONS & SUPPORT SERVICES

DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.1
SPACE NAME: Reception & Waiting Area	# of Students: 4	NSF: 400	

Describe the function of the space:
Initial point of contact for Student Accommodations and Support Services.

Adjacencies: Entry

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - RECEPTION & WAITING

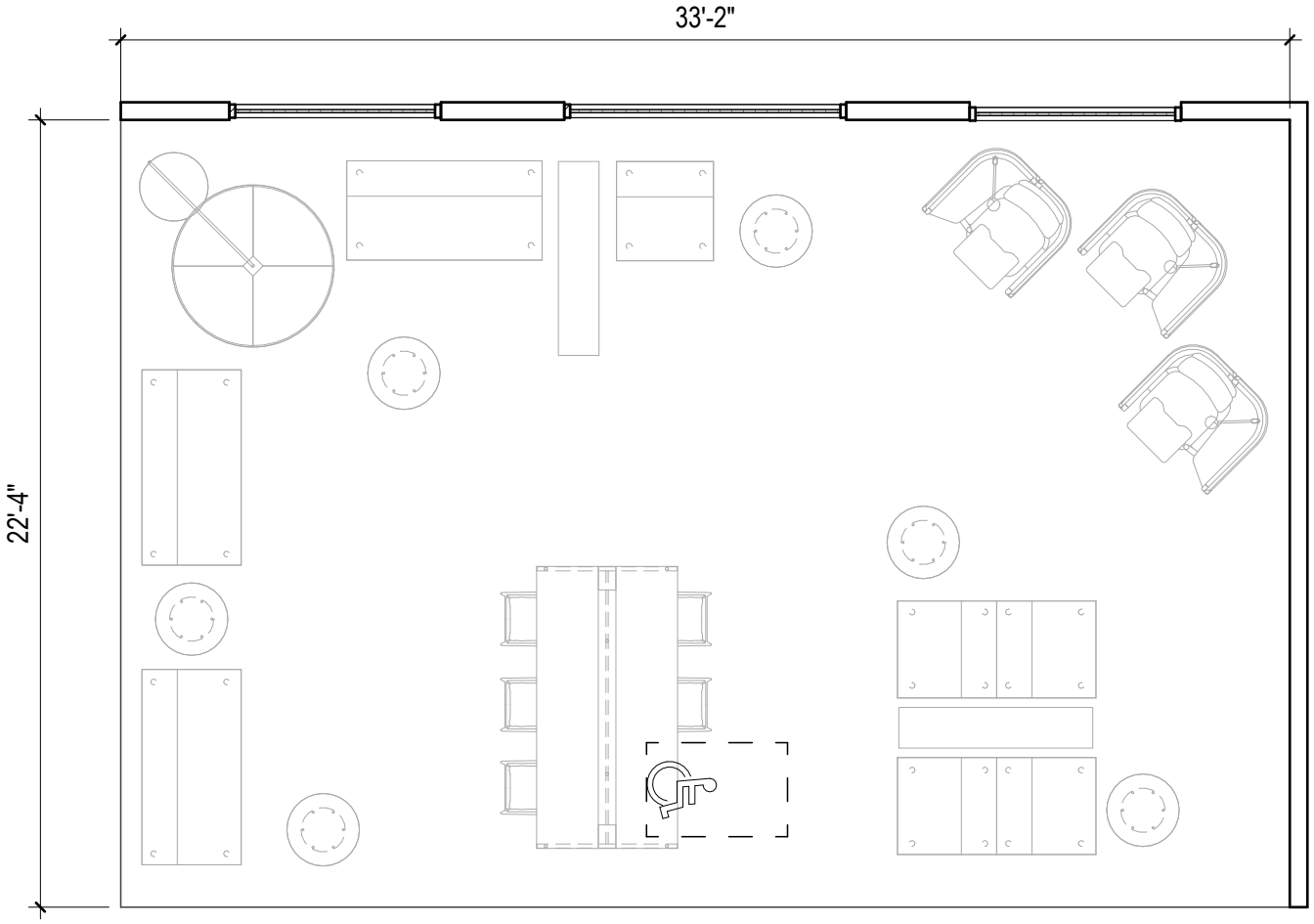
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.2
SPACE NAME: Student Group Space / Living Room	# of Students: 20	NSF: 800	

Describe the function of the space:

Space open to students utilizing SASS support to gather, study, collaborate, have a meal, and more.

Adjacencies: SASS Reception & Student Break Area

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

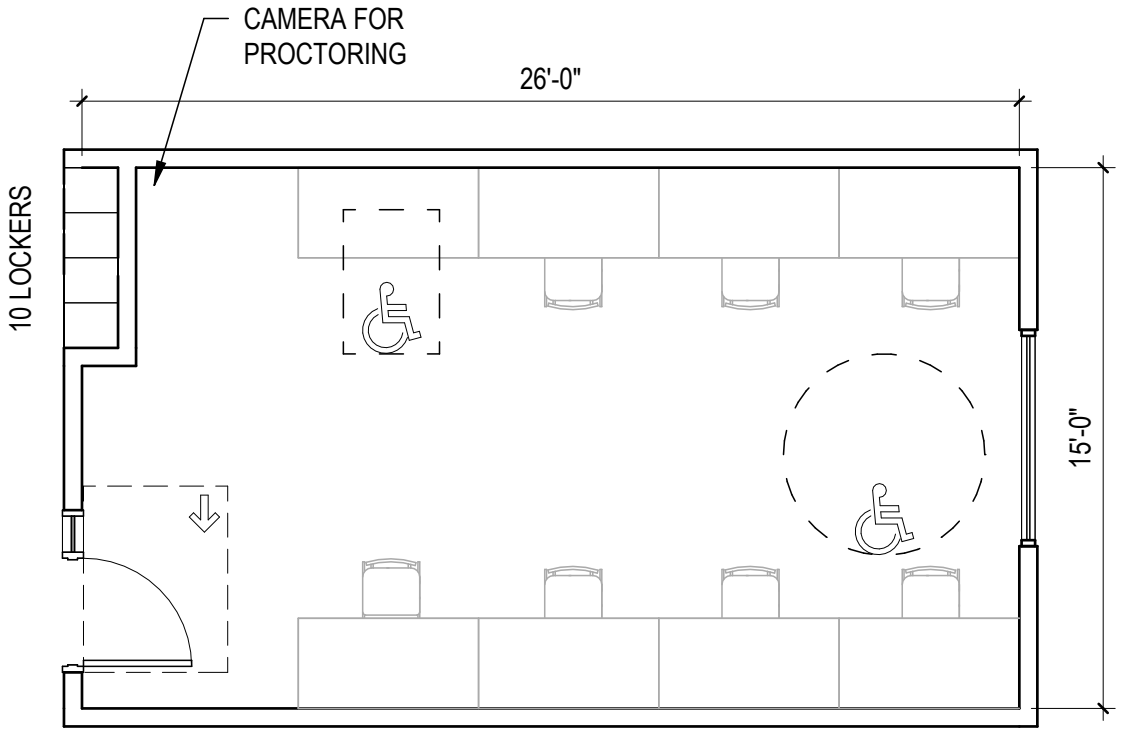
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.5
SPACE NAME: Testing Room	# of Students: 8	NSF: 400	

Describe the function of the space:

Space for proctored testing and exams of students requiring accommodations.

Adjacencies: Reception

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - TESTING ROOM

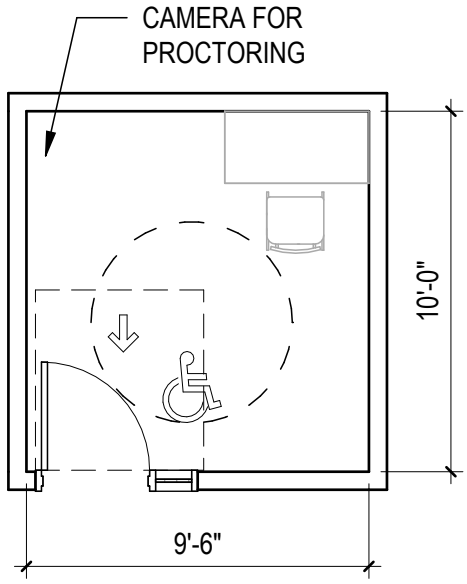
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 2	SPACE ID NO: 4.6
SPACE NAME: Testing Room - Individual	# of Students: 1	NSF: 200	

Describe the function of the space:

Private space for proctored testing and exams of students requiring accommodations.

Adjacencies: Reception

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - TESTING ROOM INDIVIDUAL

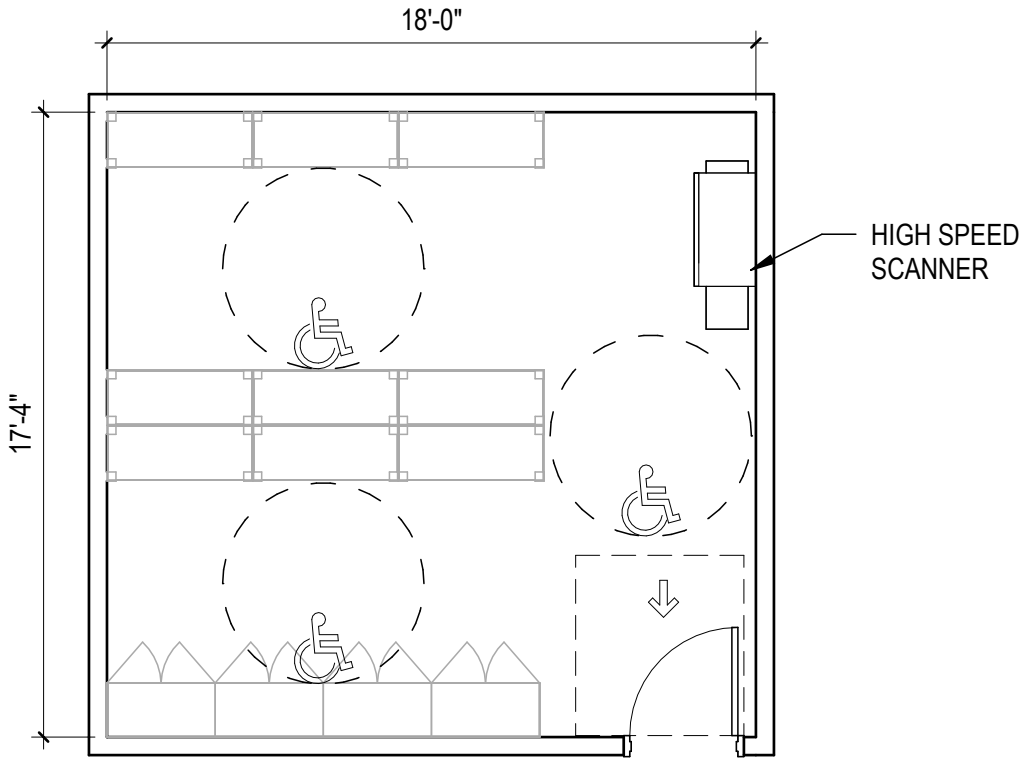
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.7
SPACE NAME: Storage	# of Students: -	NSF: 300	

Describe the function of the space:

Storage for passport supplies, student accommodation supplies, and a high-speed scanner.

Adjacencies: Reception

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - STORAGE

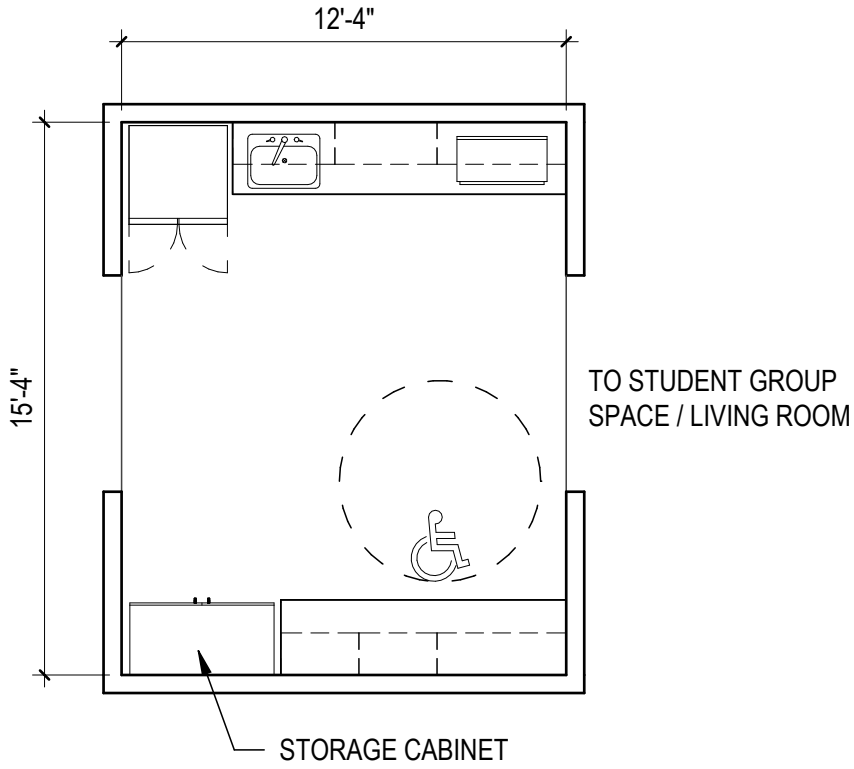
DEPARTMENT: SASS	# of Faculty/Staff: -	# OF SPACES: 1	SPACE ID NO: 4.8
SPACE NAME: Student Break Area	# of Students: -	NSF: 200	

Describe the function of the space:

Break area with open kitchenette for students utilizing SASS support to use with microwave, fridge, and access to basic needs supplies.

Adjacencies: Student Group Space / Living Room

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	-	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SASS - STUDENT BREAK AREA

SHARED SPACES

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** varies	**# OF SPACES:** 1	**SPACE ID NO:** 5.1
SPACE NAME: Commons / Atrium	**# of Students:** varies	**NSF:** 1,600	

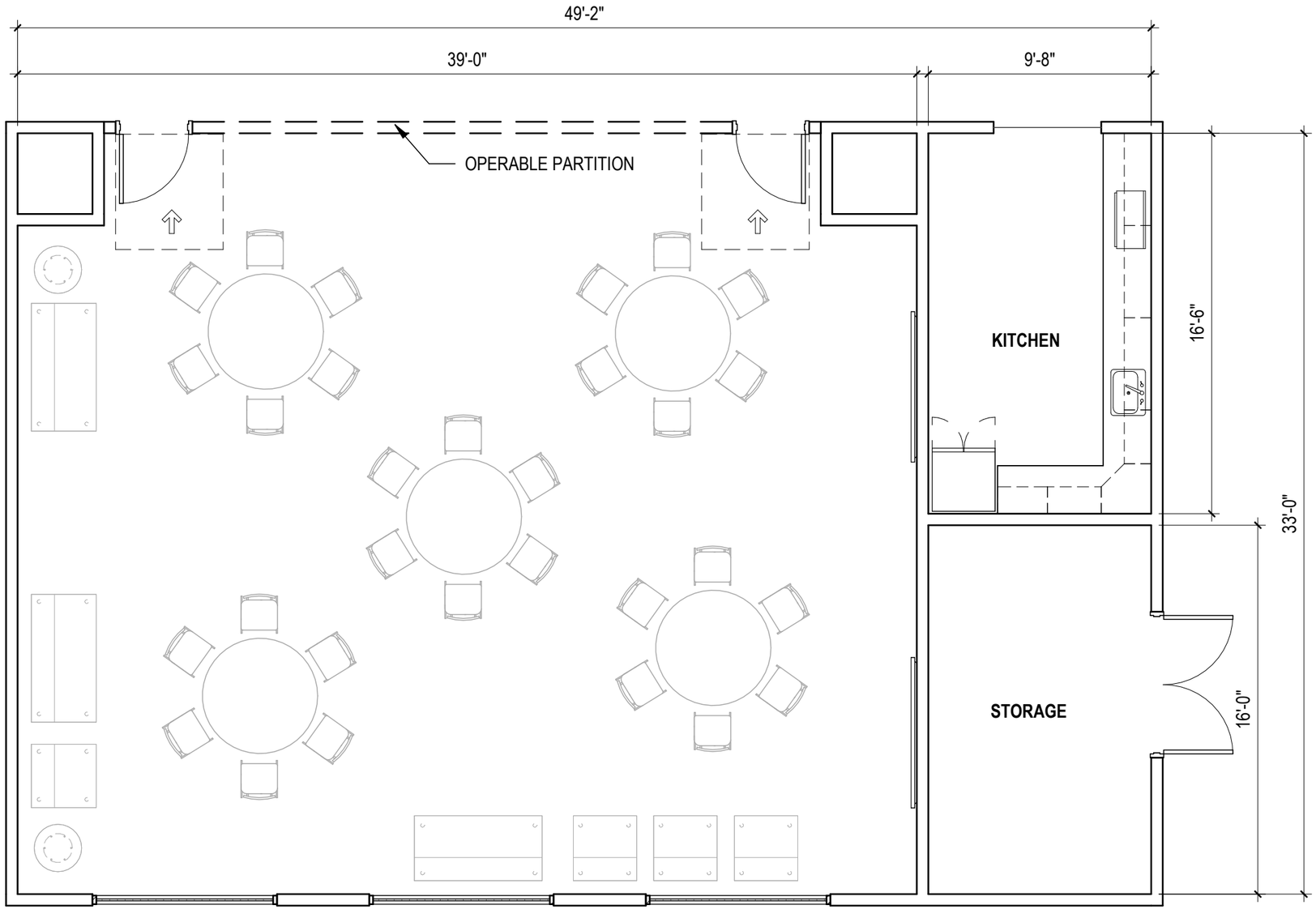
Describe the function of the space:

Event and community space with living room feel. Open to all when there are no events but should be able to host 'closed off' events. Includes adjacent kitchen and table/chair storage.

Adjacencies: Kitchen & Storage

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Polished Concrete	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Porcelain Tile	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	Operable Partition

ROOM DIAGRAM ON FOLLOWING PAGE



0 1 2 4 8 16
SCALE : 3/16" = 1'-0"

SHARED SPACES - COMMONS / ATRIUM

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** varies	**# OF SPACES:** 1	**SPACE ID NO:** 5.18
SPACE NAME: Collaboration Hub	**# of Students:** varies	**NSF:** 2,000	

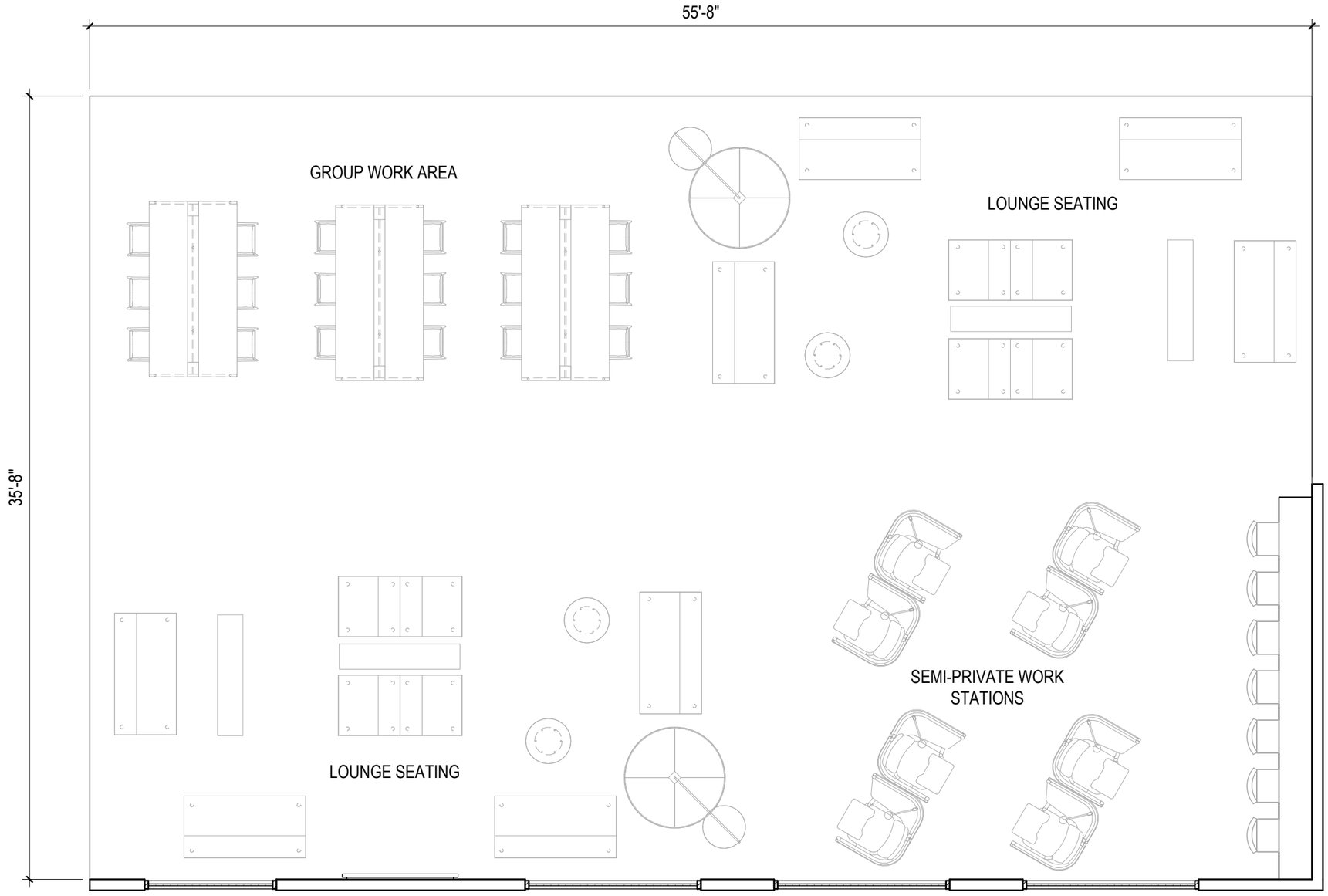
Describe the function of the space:

Open student-centered space for collaboration, study, gathering, and more.

Adjacencies: Near Primary Circulation

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

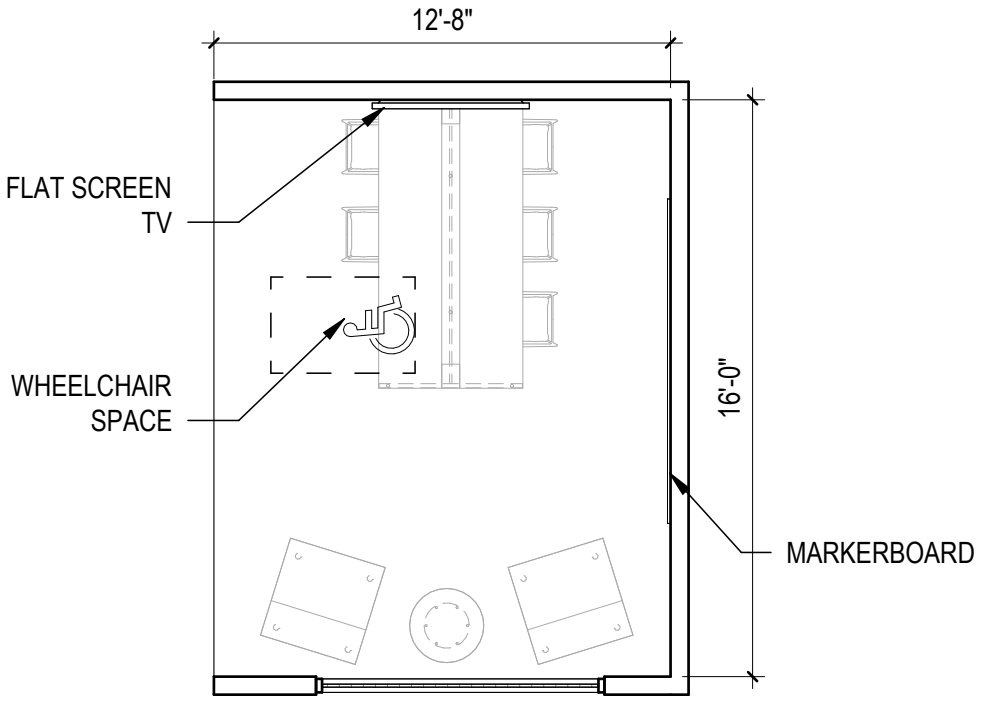
SHARED SPACES - COLLABORATION HUB

DEPARTMENT: Shared Spaces	# of Faculty/Staff: -	# OF SPACES: 3	SPACE ID NO: 5.3
SPACE NAME: Breakout Space	# of Students: 8	NSF: 600	

Describe the function of the space:
Collaboration space for student or faculty use.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



0 1 2 4 8 16
SCALE : 3/16" = 1'-0"

SHARED SPACES - BREAKOUT SPACE

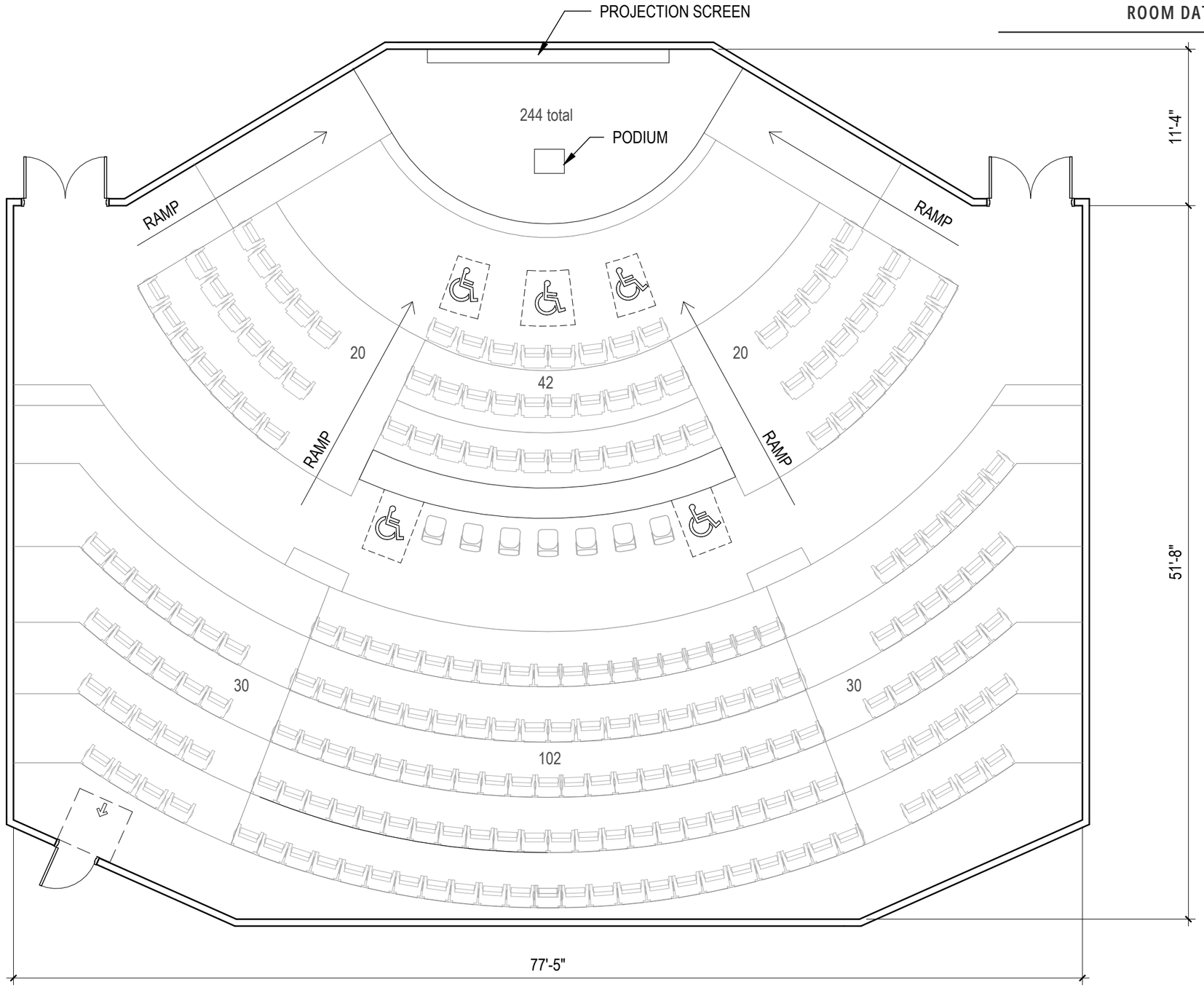
DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 5.5
SPACE NAME: Lecture Hall	**# of Students:** 240	**NSF:** 5,000	

Describe the function of the space:
Auditorium for use by entire campus for lectures and presentations.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet & Polished Concrete	Shades - Dual Motorized	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



0 1 2 4 8 16
SCALE : 3/16" = 1'-0"

SHARED SPACES - LECTURE HALL 240

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** 1	**# OF SPACES:** 2	**SPACE ID NO:** 5.6
SPACE NAME: Lecture Hall	**# of Students:** 80	**NSF:** 3,200	

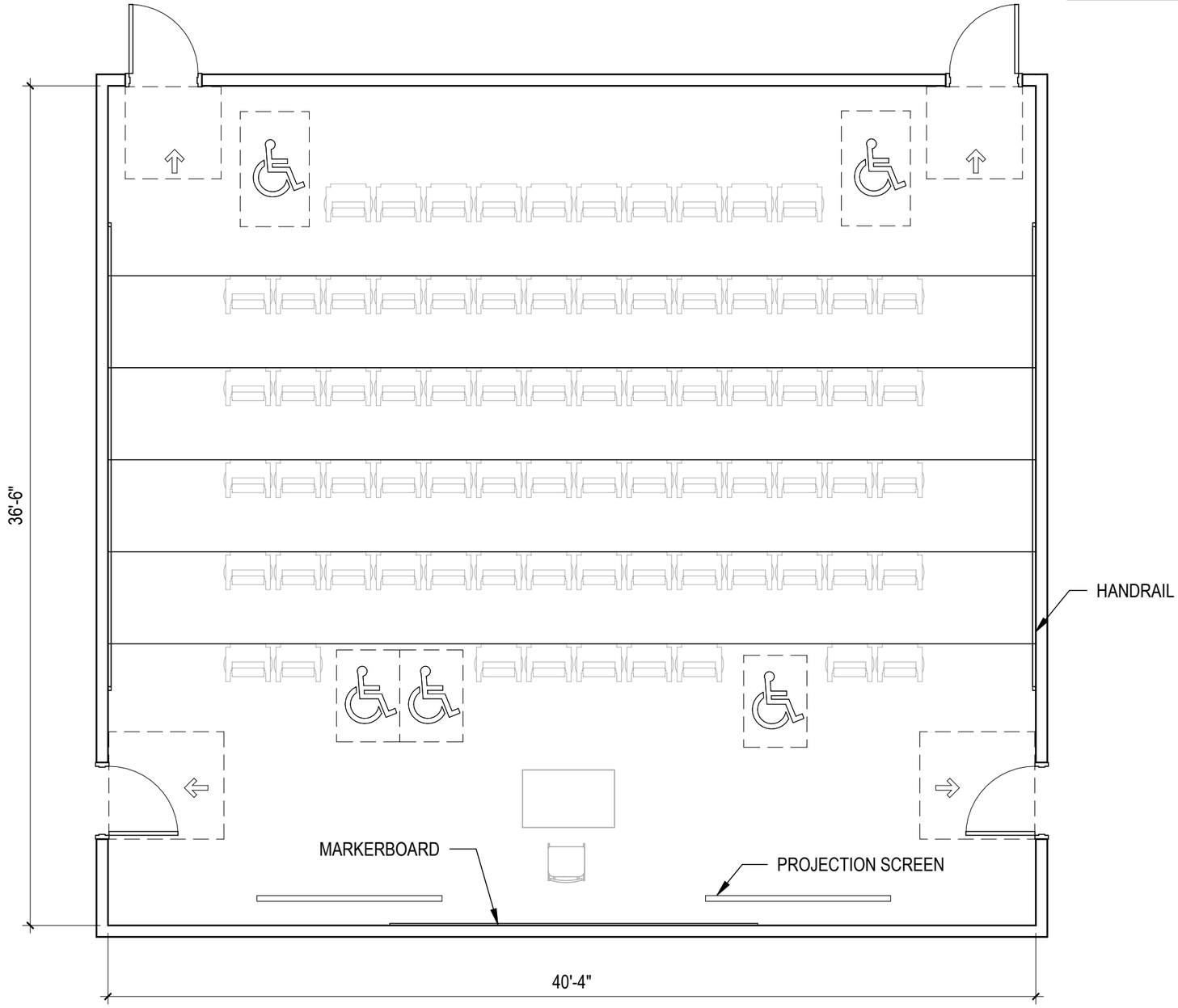
Describe the function of the space:

Auditorium for use by entire campus for lectures and presentations.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - LECTURE HALL 80

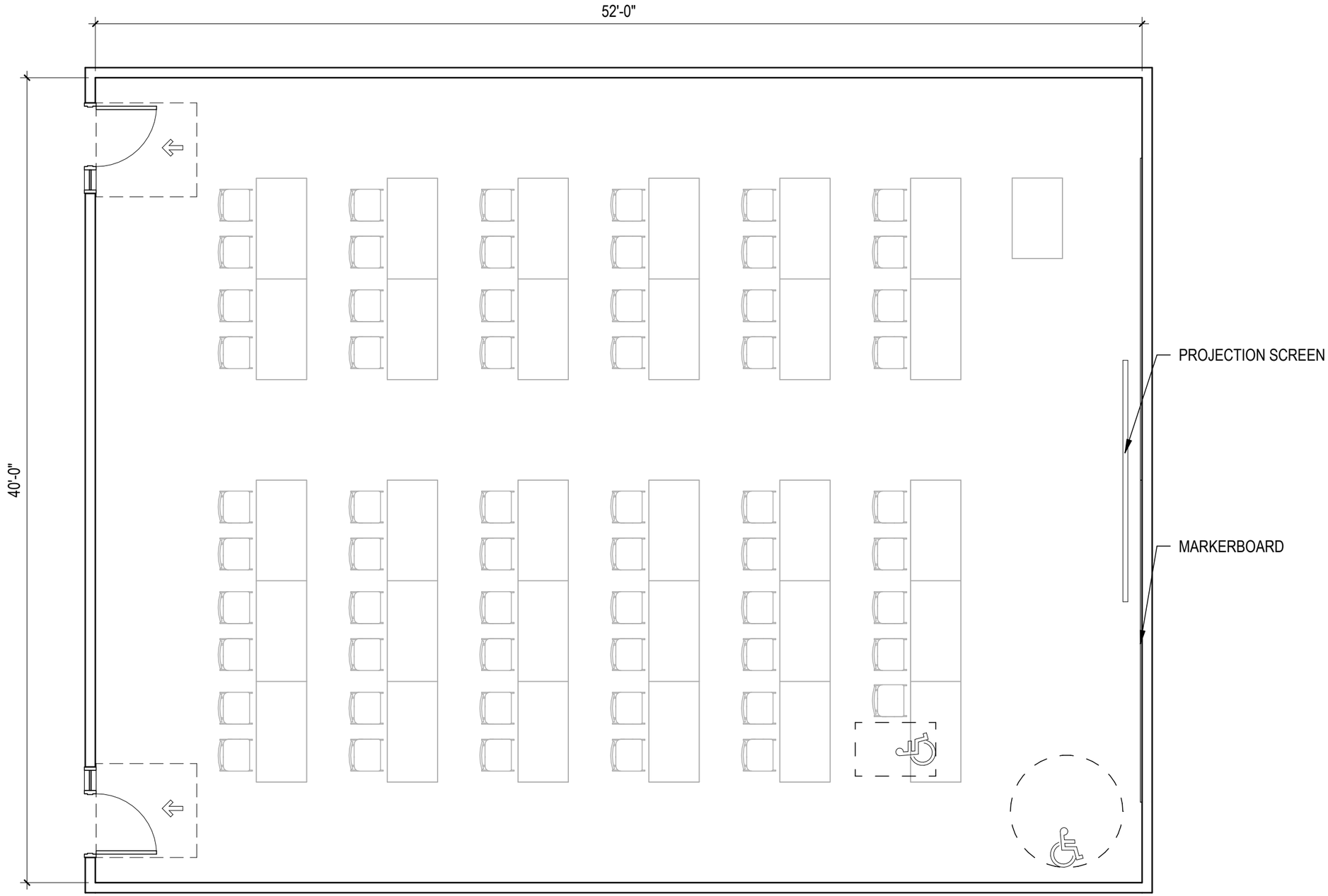
DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** 1	**# OF SPACES:** 4	**SPACE ID NO:** 5.16
SPACE NAME: Classroom	**# of Students:** 60	**NSF:** 8,160	

Describe the function of the space:
Classroom to support lecture, presentation, and group work.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet	Roller Shades	-
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - CLASSROOM 60

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** 1	**# OF SPACES:** 1	**SPACE ID NO:** 5.2
SPACE NAME: Multi-Use Classroom	**# of Students:** 40	**NSF:** 1,350	

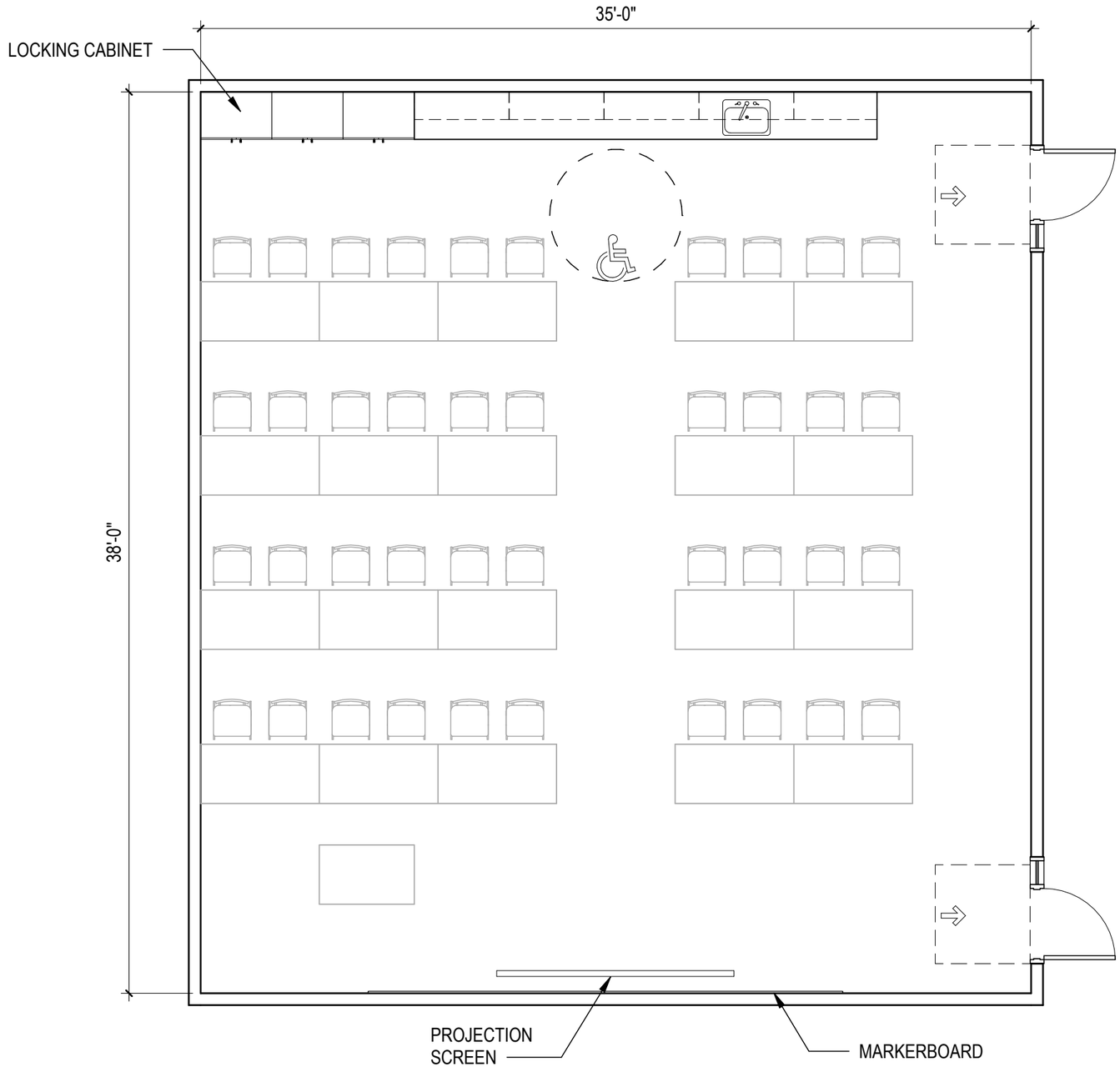
Describe the function of the space:

Flexible classroom to support lecture, presentation, workshops, and group work.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Polished Concrete	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



0 1 2 4 8 16
SCALE : 3/16" = 1'-0"

SHARED SPACES - MULTI-USE CLASSROOM 40

DEPARTMENT: Shared Spaces	# of Faculty/Staff: -	# OF SPACES: 4	SPACE ID NO: 5.7
SPACE NAME: Classroom	# of Students: 25	NSF: 4,400	

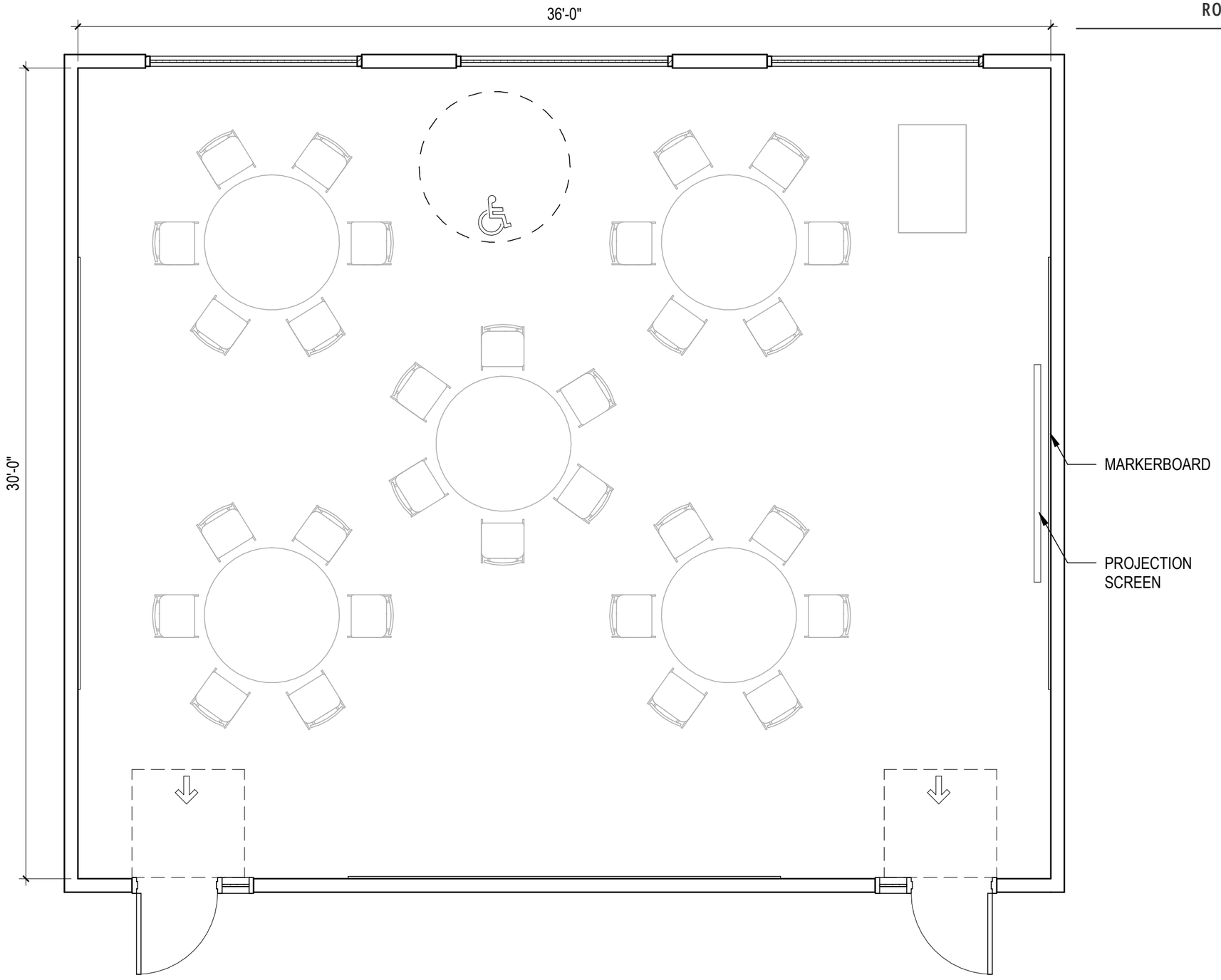
Describe the function of the space:

Active learning classroom with flexible furnishings and technology to support collaborative learning.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



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SCALE : 3/16" = 1'-0"

SHARED SPACES - CLASSROOM 25

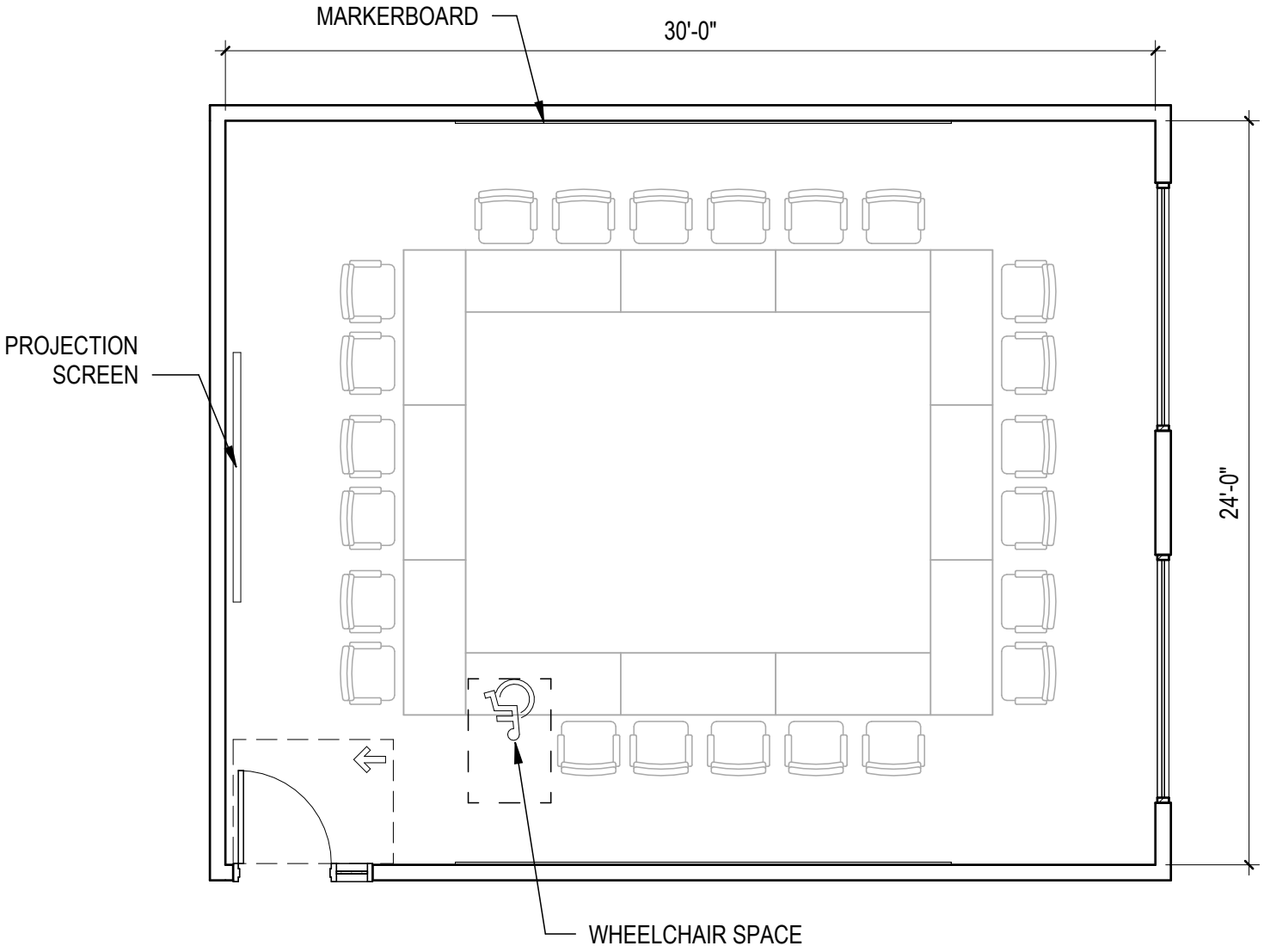
DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** -	**# OF SPACES:** 2	**SPACE ID NO:** 5.10
SPACE NAME: Seminar Room	**# of Students:** 24	**NSF:** 1,440	

Describe the function of the space:
Seminar space for Psychology and Education programs.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-

ROOM DIAGRAM ON FOLLOWING PAGE



0 1 2 4 8 16

SCALE : 3/16" = 1'-0"

SHARED SPACES - SEMINAR ROOM 24

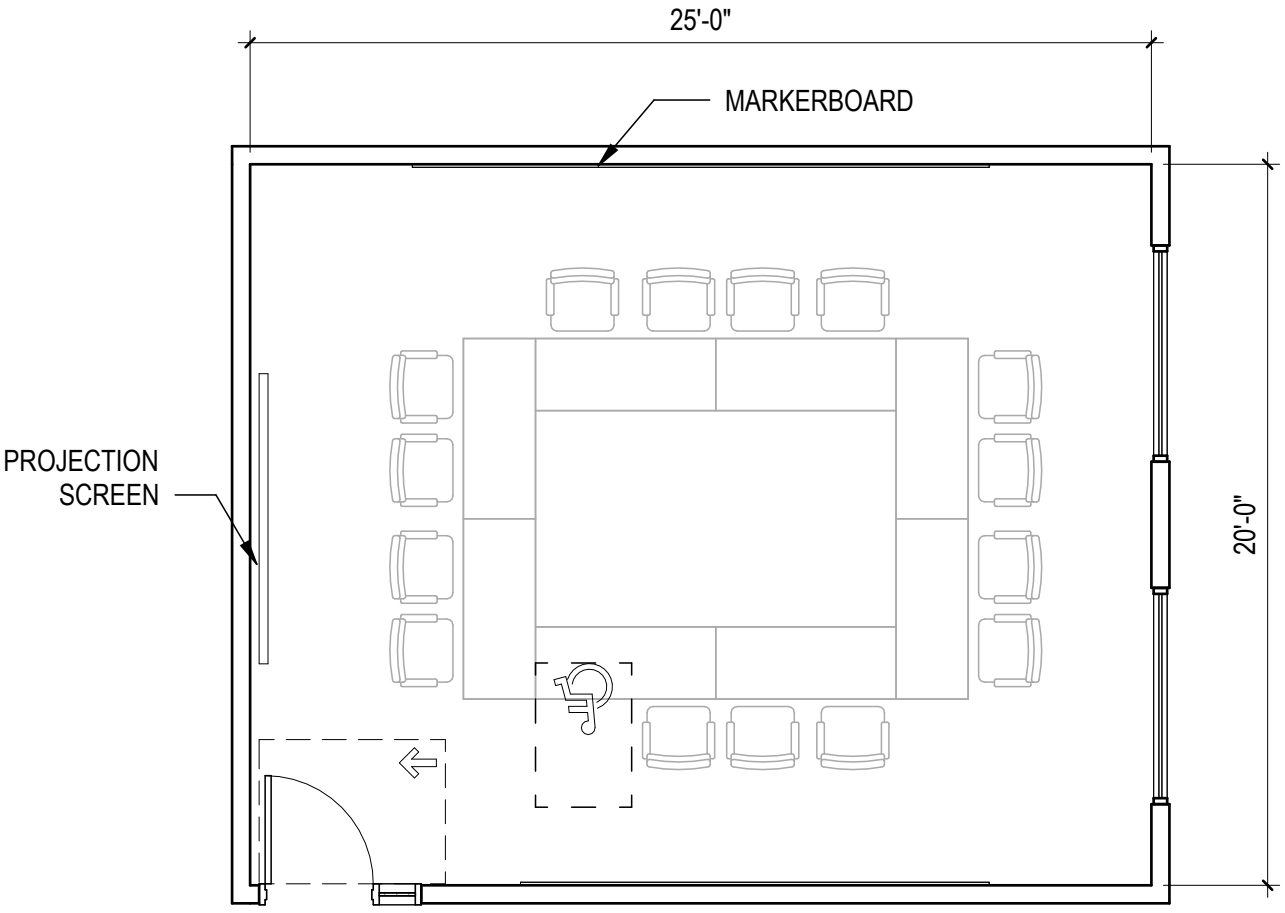
DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 5.17
SPACE NAME: Seminar Room	**# of Students:** 16	**NSF:** 500	

Describe the function of the space:

Seminar space for Psychology and Education programs.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

SHARED SPACES - SEMINAR ROOM 16

DEPARTMENT: Shared Spaces	**# of Faculty/Staff:** -	**# OF SPACES:** 1	**SPACE ID NO:** 5.11
SPACE NAME: Meeting Room	**# of Students:** 40	**NSF:** 1,575	

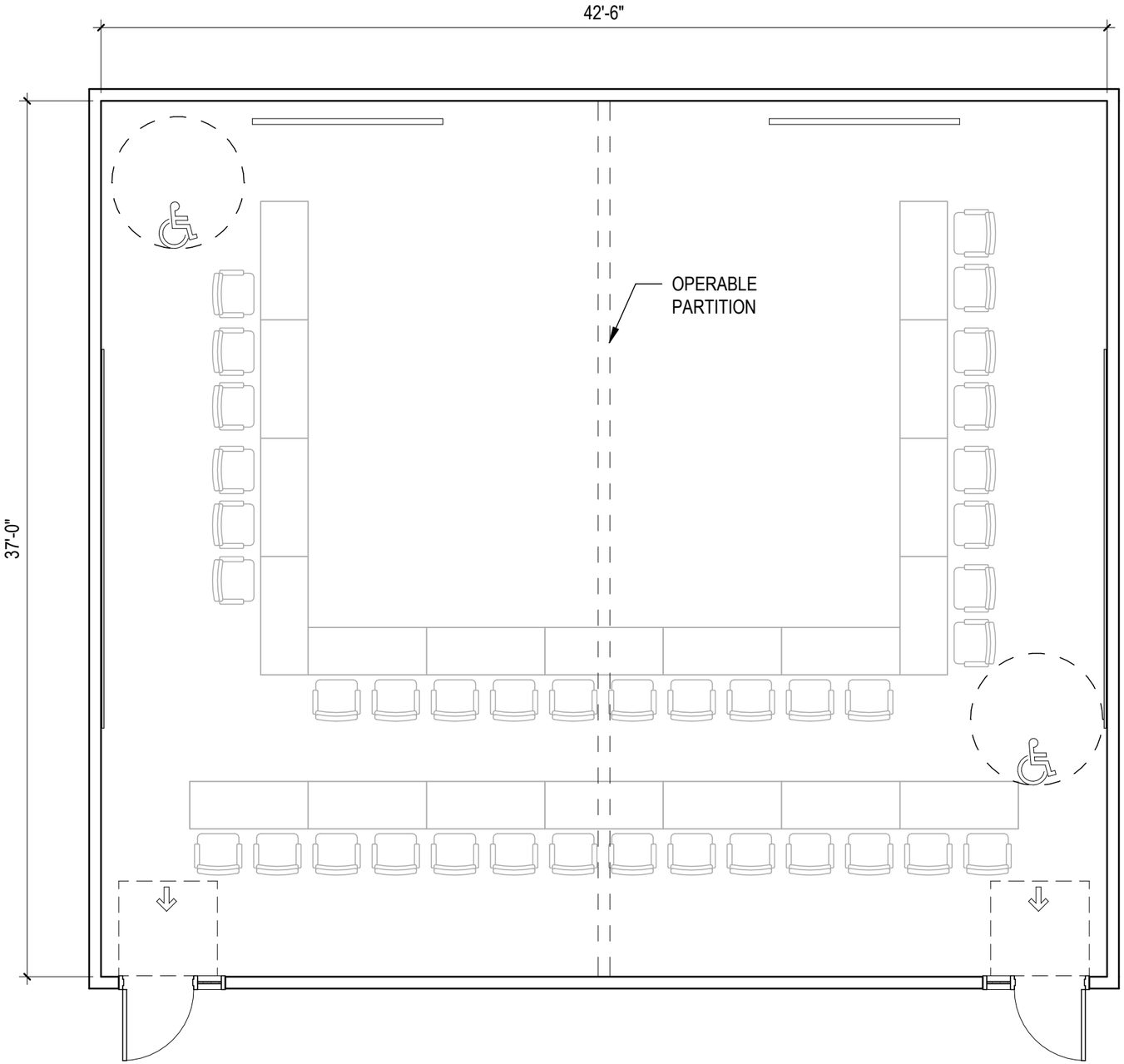
Describe the function of the space:

Flexible divisible meeting space to support a variety of meeting types and group sizes.

Adjacencies: n/a

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
Acoustic Panel	Suspended Acoustic Tile	Operable Partition

ROOM DIAGRAM ON FOLLOWING PAGE



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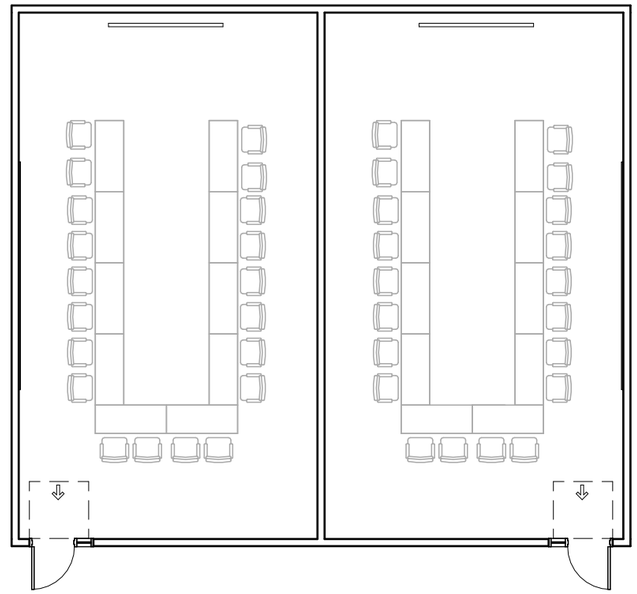
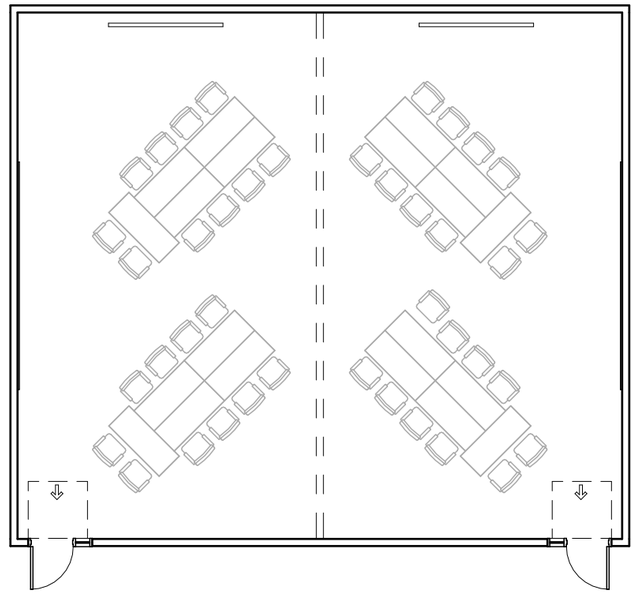
SCALE : 3/16" = 1'-0"

SHARED SPACES - MEETING ROOM 40

ALTERNATIVE LAYOUTS SHOWN FOR REFERENCE (NTS)





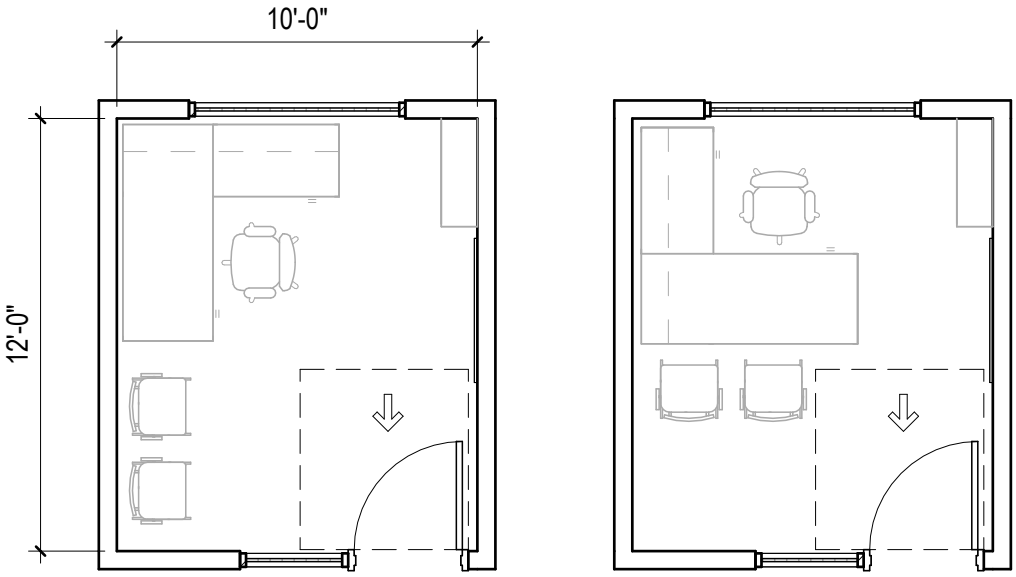
OFFICES

DEPARTMENT: Offices	# of Faculty/Staff: 1	# OF SPACES: -	SPACE ID NO: 7.1
SPACE NAME: Typical	# of Students: -	NSF: 120	

Describe the function of the space:
Standard faculty and staff offices.

Adjacencies: Varies

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic tile	-



0 1 2 4 8 16
SCALE : 3/16" = 1'-0"

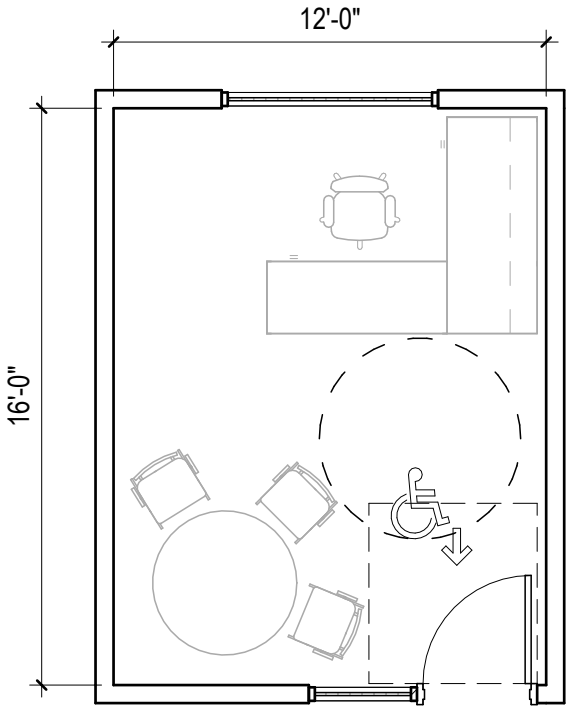
OFFICES - TYPICAL

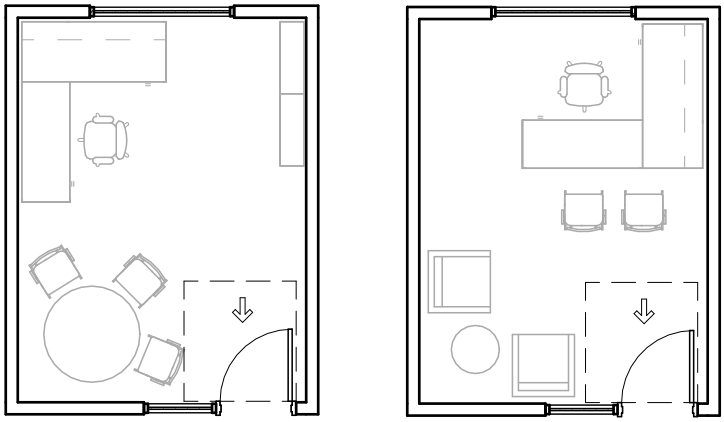
DEPARTMENT: Offices	# of Faculty/Staff: 1	# OF SPACES: -	SPACE ID NO: 7.2
SPACE NAME: Chair / Director	# of Students: -	NSF: 200	

Describe the function of the space:
Standard offices for Chair and Director positions.

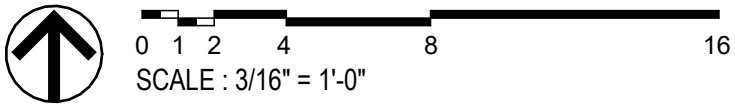
Adjacencies: Varies

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-





ALTERNATIVE LAYOUTS SHOWN FOR REFERENCE (NTS)



SCALE : 3/16" = 1'-0"

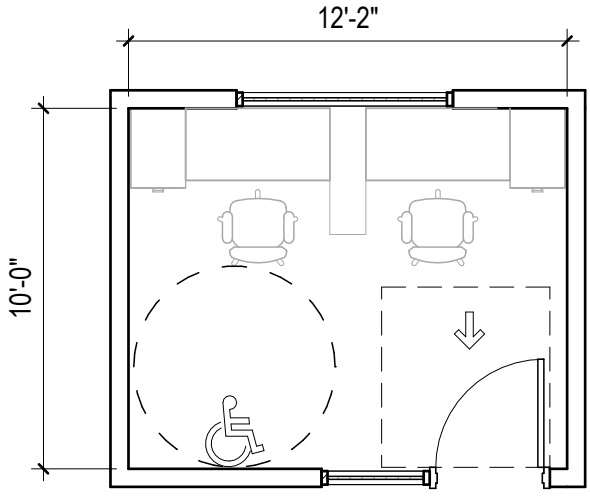
OFFICES - CHAIR/DIRECTOR

DEPARTMENT: Offices	# of Faculty/Staff: 2	# OF SPACES: -	SPACE ID NO: 7.3
SPACE NAME: Quarterly Faculty / Adjunct	# of Students: -	NSF: 120	

Describe the function of the space:
Standard shared offices for quarterly or adjunct faculty.

Adjacencies: Varies

SPACE NEEDS		
floor covering	daylight control	doors & frame type
Carpet Tile	Roller Shades	Interior Glazing Systems - Translucent
base	casework finishes	acoustic
Rubber	-	Full Height Walls
wall surface	ceiling finish	miscellaneous
-	Suspended Acoustic Tile	-



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SCALE : 3/16" = 1'-0"

OFFICES - QUARTERLY FACULTY / ADJUNCT

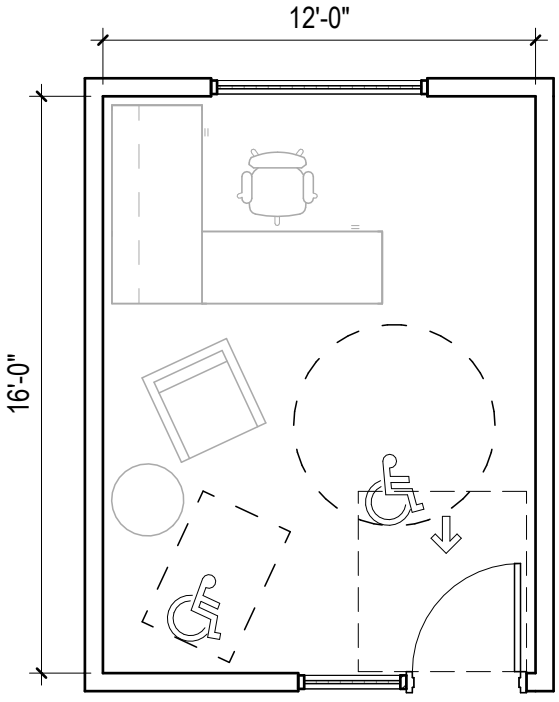
DEPARTMENT: Offices	# of Faculty/Staff: 2	# OF SPACES: -	SPACE ID NO: 7.4
SPACE NAME: Counselor	# of Students: -	NSF: 200	

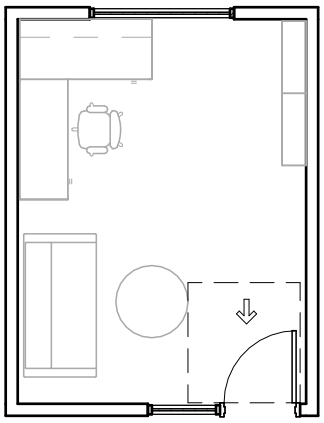
Describe the function of the space:

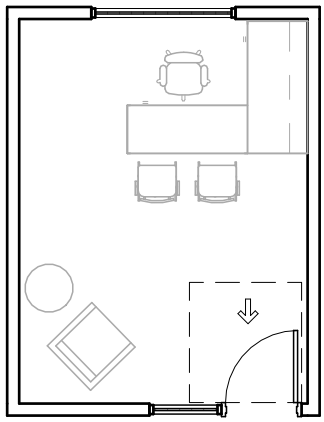
Standard offices for Counselor, Case Manager, and Coach positions.

Adjacencies: Varies

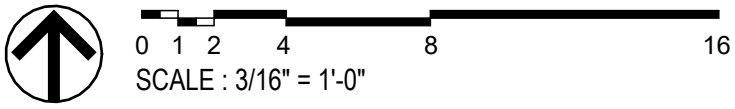
SPACE NEEDS		
floor covering	daylight control	doors & frame type
Resilient Tile	Louvered Blinds, Roller	Interior Glazing Systems
base	casework finishes	acoustic
Rubber	Plastic Laminate Casework	Full Height Walls
wall surface	ceiling finish	miscellaneous
Dry Erase Wall Covering	tbd	Outdoor Access







ALTERNATIVE LAYOUTS SHOWN FOR REFERENCE (NTS)



OFFICES - COUNSELOR

SECTION 6

APPENDICES

6.3 COMPLETED LIFE CYCLE COST MODEL

Project and Existing Facility Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Agency**	Eastern Washington University
*	**Project Title**	Martin Williamson Hall
*	**Date of Analysis:**	**5/7/2024**
	Analysis Period	
*	Years of Analysis (If not 30 or 50)	

Existing Facility Description	

Existing Lease Information	**Lease 1**	**Lease 2**	**Lease 3**	**Lease 4**	**Lease 5**	**Lease 6**	**Total**
Existing Square Feet							-
Lease Start Date / Last Lease Increase							
Lease End Date							
Lease Rate per Month							$ -
Lease Rate per SF per Year at End Date							
Additional Operating Costs per Month	$ -						$ -
Total Lease Costs per Month							$ -
* Persons Relocating							-
SF per Person Calculated							
Estimated Lease Renewal Rate - 5 Year							$ -

Lease Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

* **New Lease Option 1 Description**	

	New Lease Information		
*	Lease Location		Market Area:
*	Lease Square Feet Type		
*	New Facility Square Feet		
*	New Lease Start Date		
	SF per Person Calculated		

	New Lease Costs	Years of Term	Rate / SF / Year	Rate / Month	Adjusted to FS Rate	Total FS Rate / Month	Estimated FSG Market Rate	Estimated FSG Rate / Month	Real Estate Transaction Fees for Term
*	Year				$ -	$ -	$ -		
	Years				$ -	$ -			
	Years				$ -	$ -			
	Years				$ -	$ -			
	Years				$ -	$ -			
	Total Length of Lease	0							$ -
	Transaction Fee for first 5 Years	2.50%	*of total rent for first 5 years of term*						
	Transaction Fee for Additional Years	1.25%	*of total rent for term beyond 5 years*						

Note: Real estate transaction fees calculated on base lease - not full service rate including added services and utilities.

Added Services	New Lease Operating Costs (Starting in current year)	Known Cost / SF / Year	Estimated Cost / SF / Year	Total Cost / Year	Cost / Month
☐	Energy (Electricity, Natural Gas)	$ -	$ -	$ -	$ -
☐	Janitorial Services	$ -	$ -	$ -	$ -
☐	Utilities (Water, Sewer, & Garbage)	$ -	$ -	$ -	$ -
☐	Grounds	$ -	$ -	$ -	$ -
☐	Pest Control	$ -	$ -	$ -	$ -
☐	Security	$ -	$ -	$ -	$ -
☐	Maintenance and Repair	$ -	$ -	$ -	$ -
☐	Management	$ -	$ -	$ -	$ -
☐	Road Clearance	$ -	$ -	$ -	$ -
☐	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ -**	**$ -**	**$ -**

Escalated to lease start date

	New Lease One Time Costs	Current Estimate	Calculated (for reference)	
*	Real Estate Transaction Fees		$ -	*Per Std %*
*	Tenant Improvements		$ -	*$150 per SF*
*	IT Infrastructure		$ -	*$1500 per Person*
*	Furniture Costs		$ -	*$7000 per Person*
*	Building Security and Access Systems			*$450 per person*
*	Moving Vendor and Supplies		$ -	*$300 per Person*
	Other / Incentive			
	Total	$ -	$ -	

Biennium Budget Impacts for New Lease	Biennium Time Period Start	Finish	Existing Lease Option	New Lease Option 1	Biennium Impact:
21-23 Biennium Lease Expenditure	7/1/2021	6/30/2023	$ -	$ -	$ -
23-25 Biennium Lease Expenditure	7/1/2023	6/30/2025	$ -	$ -	$ -
25-27 Biennium Lease Expenditure	7/1/2025	6/30/2027	$ -	$ -	$ -
27-29 Biennium Lease Expenditure	7/1/2027	6/30/2029	$ -	$ -	$ -
29-31 Biennium Lease Expenditure	7/1/2029	6/30/2031	$ -	$ -	$ -

Lease Option 2 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

*	**New Lease Option 2 Description**	

New Lease Information		
Lease Location		Market Area:
Lease Square Feet Type		
New Facility Square Feet		
New Lease Start Date		
SF per Person Calculated		

New Lease Costs	**Years of Term**	**Rate / SF / Year**	**Rate / Month**	**Adjusted to FS Rate**	**Total FS Rate / Month**	**Estimated FSG Market Rate**	**Estimated FSG Rate / Month**	**Real Estate Transaction Fees for Term**
Year				$ -	$ -	$ -		
Years				$ -	$ -			
Years				$ -	$ -			
Years				$ -	$ -			
Years				$ -	$ -			
Total Length of Lease	0							$ -
Transaction Fee for first 5 Years	2.50%	*of total rent for first 5 years of term*						
Transaction Fee for Additional Years	1.25%	*of total rent for term beyond 5 years*						

Note: Real estate transaction fees calculated on base lease - not including added services and utilities.

Added Services	New Lease Operating Costs (Starting in current year)	Known Cost / SF / Year	Estimated Cost / SF / Year	Total Cost / Year	Cost / Month
☐	Energy (Electricity, Natural Gas)	$ -	$ -	$ -	$ -
☑	Janitorial Services	$ -	$ -	$ -	$ -
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ -	$ -	$ -
☐	Grounds	$ -	$ -	$ -	$ -
☐	Pest Control	$ -	$ -	$ -	$ -
☐	Security	$ -	$ -	$ -	$ -
☐	Maintenance and Repair	$ -	$ -	$ -	$ -
☐	Management	$ -	$ -	$ -	$ -
☐	Road Clearance	$ -	$ -	$ -	$ -
☐	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ -**	**$ -**	**$ -**

Escalated to lease start date

New Lease One Time Costs	Current Estimate	Calculated (for reference)	
Real Estate Transaction Fees		$ -	*Per Std %*
Tenant Improvements		$ -	*$150 / RSF*
IT Infrastructure		$ -	*$1500 / Person*
Furniture Costs		$ -	*$7000 / Person*
Building Security and Access Systems			*$450 / Person*
Moving Vendor and Supplies		$ -	*$300 / Person*
Other / Incentive			
Total	$ -	$ -	

Biennium Budget Impacts for New Lease	Biennium Time Period Start	Finish	Existing Lease Option	New Lease Option 2	Biennium Impact:
21-23 Biennium Lease Expenditure	7/1/2021	6/30/2023	$ -	$ -	$ -
23-25 Biennium Lease Expenditure	7/1/2023	6/30/2025	$ -	$ -	$ -
25-27 Biennium Lease Expenditure	7/1/2025	6/30/2027	$ -	$ -	$ -
27-29 Biennium Lease Expenditure	7/1/2027	6/30/2029	$ -	$ -	$ -
29-31 Biennium Lease Expenditure	7/1/2029	6/30/2031	$ -	$ -	$ -

Ownership Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Martin Williamson - No Action
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	91,500
*	Usable Sq Ft	49,275
	Space Efficiency	54%
	Estimated Acres Needed	4.00
	MACC Cost per Sq Ft	$361.88
	Estimated Total Project Costs per Sq Ft	$395.79
	Escalated MACC Cost per Sq Ft	$361.88
	Escalated Total Project Costs per Sq Ft	$395.79

*	**Move In Date**	7/1/2024

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total	$ -	$ 1,000,000	$ 1,000,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	0.00%	6.46% Std	6.46%
	Pre-Schematic Design services	$ 281,446		
	Construction Documents	$ -		
	Extra Services	$ -		
	Other Services	$ -		
	Design Services Contingency	$ -		
	Consultant Services Total	$ 281,446	$ 1,780,101	$ 281,446
MACC	**Construction Contracts**			
	Site Work	$ -		
	Related Project Costs	$ -		
	Facility Construction	$ -		
	MACC SubTotal	$ -	$ 33,112,020	$ 33,112,020
	Construction Contingency (5% default)	$ -	$ 1,655,601	$ 1,655,601
	Non Taxable Items	$ -		$ -
	Sales Tax	$ -		
	Construction Additional Items Total	$ -	$ 1,655,601	$ 1,655,601
	Equipment			
	Equipment	$ -		
	Non Taxable Items	$ -		
	Sales Tax	$ -		
	Equipment Total	$ -		$ -
	Art Work Total	$ -	$ 165,560	$ 165,560
	Other Costs			
		$ -		
		$ -		
		$ -		
	Other Costs Total	$ -		$ -
	Project Management Total	$ -		$ -
	Grand Total Project Cost	**$ 281,446**	**$ 37,713,282**	**$ 36,214,627**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies	$ -	$ -	*$300 / Person in FY24*
Other (not covered in construction)	$ -		
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2024	Estimated Cost /GSF/ 2024	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ 0.87	$ 1.06	$ 79,605	$ 6,634
☑	Janitorial Services	$ 1.50	$ 1.55	$ 137,250	$ 11,438
☑	Utilities (Water, Sewer, & Garbage)	$ 3.25	$ 0.40	$ 297,375	$ 24,781
☑	Grounds	$ 0.50	$ 0.06	$ 45,750	$ 3,813
☑	Pest Control	$ 0.50	$ 0.10	$ 45,750	$ 3,813
☑	Security	$ 1.00	$ 0.10	$ 91,500	$ 7,625
☑	Maintenance and Repair	$ 7.00	$ 6.09	$ 640,500	$ 53,375
☑	Management	$ 1.00	$ 0.91	$ 91,500	$ 7,625
☑	Road Clearance	$ 0.38	$ 0.14	$ 34,770	$ 2,898
☑	Telecom	$ 0.50	$ -	$ 45,750	$ 3,813
	Additional Parking	$ 0.50	$ -	$ 45,750	$ 3,813
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 17.00**	**$ 10.43**	**$ 1,555,500**	**$ 129,625**

Ownership Option 2 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Martin Williamson - Renovate and Replace (ALT B Phase 1 & 2)
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	133,000
*	Usable Sq Ft	87,062
	Space Efficiency	65%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$631.12
	Estimated Total Project Costs per Sq Ft	$931.25
	Escalated MACC Cost per Sq Ft	$762.16
	Escalated Total Project Costs per Sq Ft	$1,124.60

*	**Move In Date**	6/1/2031

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total	$ -	$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.38% Std	5.38%
	Pre-Schematic Design services	$ 281,446		
	Construction Documents	$ 5,721,114		
	Extra Services	$ 2,199,000		
	Other Services	$ 2,730,356		
	Design Services Contingency	$ 1,093,192		
	Consultant Services Total	$ 12,025,108	$ 4,512,543	$ 12,025,108
MACC	**Construction Contracts**			
	Site Work	$ 2,665,426		
	Related Project Costs	$ 576,000		
	Facility Construction	$ 80,697,325		
	MACC SubTotal	$ 83,938,751	$ 48,130,040	$ 83,938,751
	Construction Contingency (5% default)	$ 8,393,875	$ 8,393,875	$ 8,393,875
	Non Taxable Items	$ 419,694		$ 419,694
	Sales Tax	$ 8,255,013		$ 8,255,013
	Construction Additional Items Total	$ 17,068,582	$ 17,068,582	$ 17,068,582
	Equipment			
	Equipment	$ 5,285,937		
	Non Taxable Items	$ -		
	Sales Tax	$ 470,448		
	Equipment Total	$ 5,756,385		$ 5,756,385
	Art Work Total	$ 707,227	$ 419,694	$ 707,227
	Other Costs			
		$ -		
	Other Costs Total	$ -		$ -
	Project Management Total	$ 3,109,860		$ 3,109,860
	Grand Total Project Cost		**$ 71,380,859**	**$ 123,855,913**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2031	Estimated Cost /GSF/ 2031	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.67	$ 1.28	$ 89,110	$ 7,426
☑	**Janitorial Services**	$ 1.50	$ 1.87	$ 199,500	$ 16,625
☑	**Utilities (Water, Sewer, & Garbage)**	$ 3.25	$ 0.48	$ 432,250	$ 36,021
☑	**Grounds**	$ 0.50	$ 0.07	$ 66,500	$ 5,542
☑	**Pest Control**	$ 0.50	$ 0.12	$ 66,500	$ 5,542
☑	**Security**	$ 1.00	$ 0.12	$ 133,000	$ 11,083
☑	**Maintenance and Repair**	$ 7.00	$ 7.36	$ 931,000	$ 77,583
☑	**Management**	$ 1.00	$ 1.10	$ 133,000	$ 11,083
☑	**Road Clearance**	$ 0.38	$ 0.17	$ 50,540	$ 4,212
☑	**Telecom**	$ 0.50	$ -	$ 66,500	$ 5,542
	Additional Parking	$ 0.50	$ -	$ 66,500	$ 5,542
	Other		$ -	$ -	$ -
	Total Operating Costs	**$ 16.80**	**$ 12.59**	**$ 2,234,400**	**$ 186,200**

Ownership Option 3 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Martin Williamson - Historic Screen (ALT C Phase 1 & 2)
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	124,375
*	Usable Sq Ft	87,062
	Space Efficiency	70%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$728.47
	Estimated Total Project Costs per Sq Ft	$1,079.76
	Escalated MACC Cost per Sq Ft	$879.73
	Escalated Total Project Costs per Sq Ft	$1,303.95

*	**Move In Date**	6/1/2031

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total	$ -	$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.29% Std	5.29%
	Pre-Schematic Design services	$ 281,465		
	Construction Documents	$ 6,660,848		
	Extra Services	$ 2,199,000		
	Other Services	$ 3,152,555		
	Design Services Contingency	$ 1,229,385		
	Consultant Services Total	$ 13,523,253	$ 4,791,424	$ 13,523,253
MACC	**Construction Contracts**			
	Site Work	$ 2,879,401		
	Related Project Costs	$ 3,020,000		
	Facility Construction	$ 84,704,506		
	MACC SubTotal	$ 90,603,907	$ 45,008,825	$ 90,603,907
	Construction Contingency (5% default)	$ 9,060,391	$ 9,060,391	$ 9,060,391
	Non Taxable Items	$ 267,684		$ 267,684
	Sales Tax	$ 8,894,075		$ 8,894,075
	Construction Additional Items Total	$ 18,222,150	$ 18,222,150	$ 18,222,150
	Equipment			
	Equipment	$ 5,285,937		
	Non Taxable Items	$ -		
	Sales Tax	$ 470,449		
	Equipment Total	$ 5,756,386		$ 5,756,386
	Art Work Total	$ 767,595	$ 453,020	$ 767,595
	Other Costs			
		$ -		
	Other Costs Total	$ -		$ -
	Project Management Total	$ 4,171,718		$ 4,171,718
	Grand Total Project Cost		**$ 69,725,419**	**$ 134,295,009**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2031	Estimated Cost /GSF/ 2031	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.47	$ 1.28	$ 58,456	$ 4,871
☑	**Janitorial Services**	$ 1.50	$ 1.87	$ 186,563	$ 15,547
☑	**Utilities (Water, Sewer, & Garbage)**	$ 3.25	$ 0.48	$ 404,219	$ 33,685
☑	**Grounds**	$ 0.50	$ 0.07	$ 62,188	$ 5,182
☑	**Pest Control**	$ 0.50	$ 0.12	$ 62,188	$ 5,182
☑	**Security**	$ 1.00	$ 0.12	$ 124,375	$ 10,365
☑	**Maintenance and Repair**	$ 7.00	$ 7.36	$ 870,625	$ 72,552
☑	**Management**	$ 1.00	$ 1.10	$ 124,375	$ 10,365
☑	**Road Clearance**	$ 0.38	$ 0.17	$ 47,263	$ 3,939
☑	**Telecom**	$ 0.50	$ -	$ 62,188	$ 5,182
	Additional Parking	$ 0.50	$ -	$ 62,188	$ 5,182
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 16.60**	**$ 12.59**	**$ 2,064,625**	**$ 172,052**

Life Cycle Cost Analysis - Project Summary

Agency	Eastern Washington University
Project Title	Martin Williamson Hall

Existing Description	

Lease Option 1 Description	

Lease Option 2 Description	

Ownership Option 1 Description	Martin Williamson - No Action

Ownership Option 2 Description	Martin Williamson - Renovate and Replace (ALT B Phase 1 & 2)

Ownership Option 3 Description	Martin Williamson - Historic Screen (ALT C Phase 1 & 2)

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	-	-
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	$ -	$ -
Occupancy Date	n/a		
Project Initial Costs	n/a	$ -	$ -
Persons Relocating	-	-	-
RSF/Person Calculated			

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	91,500	133,000	124,375
Total Rentable Square Feet	49,275	87,062	87,062
Occupancy Date	7/1/2024	6/1/2031	6/1/2031
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 396	$ 1,125	$ 1,304
RSF/Person Calculated	-	-	-

Financial Analysis of Options

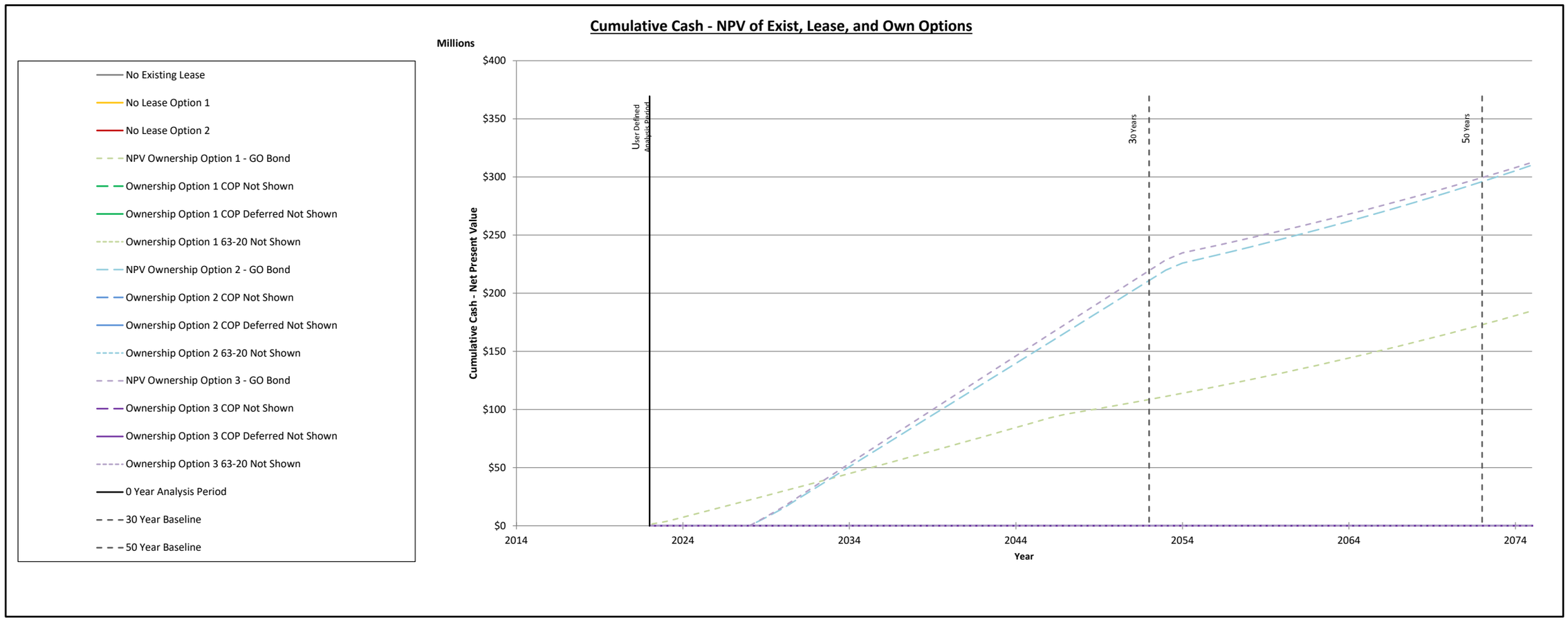
	Display Option?	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	No	No
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
0	0 Year Cumulative Cash	$ -	$ -	$ -	$ -				$ -				$ -			
	0 Year Net Present Value	$ -	$ -	$ -	$ -				$ -				$ -			
	Lowest Cost Option (Analysis Period)															

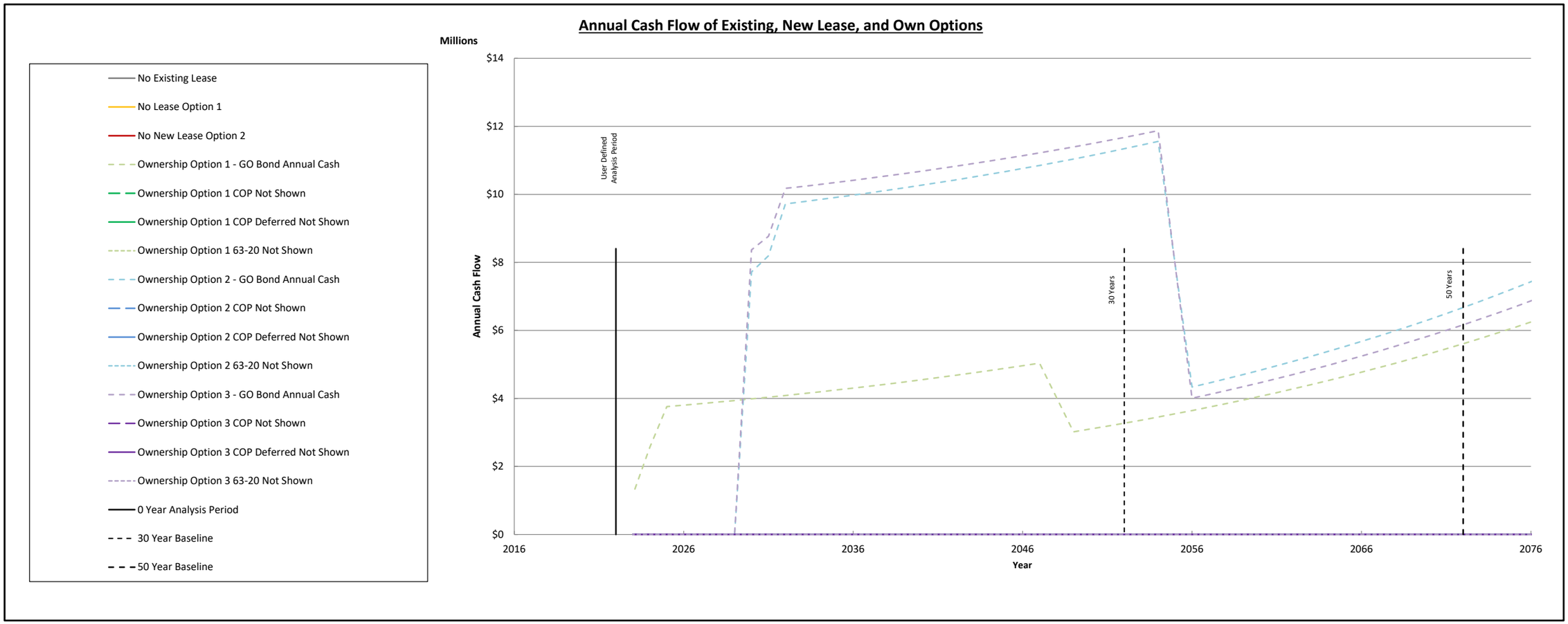
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
30	30 Year Cumulative Cash	$ -	$ -	$ -	$ 119,835,532				$ 235,284,648				$ 244,911,681			
	30 Year Net Present Value	$ -	$ -	$ -	$ 105,789,331				$ 201,722,945				$ 210,065,797			
	Lowest Cost Option (30 Years)				**1**				**2**				**3**			

	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
50	50 Year Cumulative Cash	$ -	$ -	$ -	$ 207,527,180				$ 358,216,854				$ 361,488,155			
	50 Year Net Present Value	$ -	$ -	$ -	$ 168,770,287				$ 291,065,004				$ 294,931,694			
	Lowest Cost Option (50 Years)				**1**				**2**				**3**			

** - Defers payment on principle for 2 years while the building is being constructed. See instructions on Capitalized Interest.*

Cumulative Cash - NPV of Exist, Lease, and Own Options




Annual Cash Flow of Existing, New Lease, and Own Options
Millions
$14
$12
$10
$8
$6
$4
$2
$0
Annual Cash Flow
2016
2026
2036
2046
2056
2066
2076
Year
User Defined Analysis Period
30 Years
50 Years
No Existing Lease
No Lease Option 1
No New Lease Option 2
Ownership Option 1 - GO Bond Annual Cash
Ownership Option 1 COP Not Shown
Ownership Option 1 COP Deferred Not Shown
Ownership Option 1 63-20 Not Shown
Ownership Option 2 - GO Bond Annual Cash
Ownership Option 2 COP Not Shown
Ownership Option 2 COP Deferred Not Shown
Ownership Option 2 63-20 Not Shown
Ownership Option 3 - GO Bond Annual Cash
Ownership Option 3 COP Not Shown
Ownership Option 3 COP Deferred Not Shown
Ownership Option 3 63-20 Not Shown
0 Year Analysis Period
30 Year Baseline
50 Year Baseline

SECTION 6

APPENDICES

6.4 COST ESTIMATE REPORT

ROEN ASSOCIATES

PROJECT INFORMATION

EWU Martin & Williamson Hall

June 27, 2024

EXECUTIVE SUMMARY

Owner:	Eastern Washington University	Estimate Date:	June 27, 2024
Name:	EWU Martin & Williamson Hall	Building Area:	133,000
Location:	Cheney, WA	Site Area:	98,800

Seattle Office:	Roen Associates 500 Union Street, Suite 927 Seattle, WA 98101	Contact Name: Telephone: E-mail:	Dan Deymonaz Jovelyn Limbag (206) 343-1003 dan@roenassociates.com jovelyn@roenassociates.com
Spokane Office:	Roen Associates 121 South Wall Spokane, WA 99201	Contact Name: Telephone: E-mail:	- (509) 838-8688 -

Project Type:	University			
Estimate Level:	PreDesign Estimate			
Project Start:	Q3, 2027	Project Duration:	40	months

DOCUMENTS REVIEWED

	Document	A / E / C Firm	Date
Drawings:	2023-25Predesign	Integrus Architecture	2023
Reports:			

Construction Cost Summary

Owner: **Eastern Washington University**

Project: **EWU Martin & Williamson Hall**

Alternate A Cost Summary

June 27, 2024

- No Action

Alternate B Cost Summary

Item	Description	QTY	UOM	$ / UOM	Cost
1	Phase 1 - Renovation & Restoration of Martin Hall	59,200	BGSF	$ 563.04	$ 33,331,761
2	Phase 1 - Sitework	72,070	SGA	$ 27.51	$ 1,982,742
3	Williamson Hall Full Bldg. Demolition & Abatement	32,000	BGSF	$ 18.00	$ 576,000
4	General Conditions & Support Services	20	MO	$ 75,000.00	$ 1,500,000
Total Estimated Construction Cost (Today's Dollars)					**$ 37,390,503**
5	Phase 2 - Replacement of Williamson Hall	73,800	BGSF	$ 601.16	$ 44,365,564
6	Phase 2 - Sitework	26,730	SGA	$ 25.54	$ 682,684
7	General Conditions & Support Services	20	MO	$ 75,000.00	$ 1,500,000
Total Estimated Construction Cost (Today's Dollars)					**$ 46,548,248**

ALT B PHASE 1 & PHASE 2 Combined Construction Cost (Today's Dollars)	**$ 83,938,751**

Alternate C Cost Summary

Item	Description	QTY	UOM	$ / UOM	Cost
1	Phase 1 - New Construction of Williamson Hall	71,478	BGSF	$ 662.60	$ 47,361,526
2	Phase 1 - Sitework	43,740	SGA	$ 37.84	$ 1,655,294
3	Full Building Demolition & Abatement	95,000	BGSF	$ 24.00	$ 2,280,000
4	Shoring of Existing Historic Façade	1	LS	$ 740,000	$ 740,000
5	General Conditions & Support Services	20	MO	$ 75,000.00	$ 1,500,000
Total Estimated Construction Cost (Today's Dollars)					**$ 53,536,820**
6	Phase 2 - New Construction of Martin Hall	52,897	BGSF	$ 649.25	$ 34,342,980
7	Phase 2 - Sitework	55,060	SGA	$ 22.23	$ 1,224,107
8	General Conditions & Support Services	20	MO	$ 75,000.00	$ 1,500,000
Total Estimated Construction Cost (Today's Dollars)					**$ 37,067,087**

ALT C PHASE 1 & PHASE 2 Combined Construction Cost (Today's Dollars)	**$ 90,603,907**

COMMENTS:

Design, Bid, Build delivery method is assumed

Assumes a Q3, 2027 start and a 40 month schedule

Escalation is predicted to be 4% in 2024 and 4% through 2027.

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	71,478
Project Start Date:	Q3, 2027	**Site GSF:**	43,740
Estimate Date:	June 27, 2024		

FF&E ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
PHASE 1 FFE COST							
EWU FFE Cost							
	Furnishings	1	ls	$	1,624,695	$	1,624,695
	Equipment (Fixed)	1	ls	$	341,665	$	341,665
	Equipment (Movable)	1	ls	$	355,246	$	355,246
	Telecom / Networking	1	ls	$	436,016	$	436,016
	Custodial Equip / Supplies	1	ls	$	280,194	$	280,194
	Subtotal					$	3,037,815
	Installation (Including Delivery, & Distribution)						Incl.
PHASE 1 - FFE GRAND TOTAL						**$**	**3,037,815**
PHASE 2 FFE COST							
EWU FFE Cost							
	Furnishings	1	ls	$	1,202,349	$	1,202,349
	Equipment (Fixed)	1	ls	$	252,848	$	252,848
	Equipment (Movable)	1	ls	$	262,898	$	262,898
	Telecom / Networking	1	ls	$	322,672	$	322,672
	Custodial Equip / Supplies	1	ls	$	207,356	$	207,356
	Subtotal					$	2,248,123
	Installation (Including Delivery, & Distribution)						Incl.
PHASE 2 - FFE GRAND TOTAL						**$**	**2,248,123**

Estimate excludes soft costs such as design fees, permits, testing / inspections, sales tax and construction change order contingencies.

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	59,200
Project Start Date:	Q1, 2026	**Site GSF:**	72,070
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	59,200	BGSF	$ 2.13	$ 126,100
A20	Basement Construction	59,200	BGSF	$ -	$ -
B10	Superstructure	59,200	BGSF	$ 24.07	$ 1,425,200
B20	Exterior Enclosure	59,200	BGSF	$ 36.07	$ 2,135,275
B30	Roofing	59,200	BGSF	$ 2.07	$ 122,786
C10	Interior Construction	59,200	BGSF	$ 61.57	$ 3,644,835
C20	Stairs	59,200	BGSF	$ 0.58	$ 34,500
C30	Interior Finishes	59,200	BGSF	$ 36.46	$ 2,158,300
D10	Conveying Systems	59,200	BGSF	$ 2.87	$ 170,000
D20	Plumbing	59,200	BGSF	$ 31.43	$ 1,860,712
D30	HVAC	59,200	BGSF	$ 100.90	$ 5,973,229
D40	Fire Protection	59,200	BGSF	$ 6.39	$ 378,084
D50	Electrical	59,200	BGSF	$ 78.97	$ 4,675,004
E10	Equipment	59,200	BGSF	$ 0.35	$ 21,000
E20	Casework & Furnishings	59,200	BGSF	$ 11.53	$ 682,580
F10	Special Construction	59,200	BGSF	$ 24.31	$ 1,439,400
F20	Selective Demolition	59,200	BGSF	$ 22.93	$ 1,357,210
BUILDING CONSTRUCTION SUBTOTAL					**$ 26,204,215**
	Design Contingency			20.00%	$ 5,240,843
	Subtotal				$ 31,445,058
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 1,886,703
	Subtotal				$ 33,331,761
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**59,200**	**BGSF**	**$ 563.04**	**$ 33,331,761**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**						
	Foundation Earthwork						
	Footing Excavation and Backfill (Native Soil)	1	ls	$	10,500.00	$	10,500
	Footing Drains with Gravel	240	lf	$	30.00	$	7,200
	Foundations						
	Spread Footings, Continuous Footings & Perimeter Stem Wall (includes reinforcing)	3,200	sf	$	8.00	$	25,600
	Slab-on-Grade						
	New Addition Slab on Grade (includes reinforcing, base course and vapor barrier)	3,200	sf	$	11.50	$	36,800
	Slab on Grade (includes reinforcing, base course and vapor barrier) - Transition to New Addition & Misc. Slab Repair Allowance	1	ls	$	15,000.00	$	15,000
	Misc. Concrete						
	Mech. & Elect. Housekeeping Pads	500	sf	$	25.00	$	12,500
	Set Column Anchor Bolts & Grout Baseplates - Allowance	1	ls	$	6,500.00	$	6,500
	Perimeter Insulation / Waterproofing						
	2" Rigid Polystyrene	960	sf	$	4.00	$	3,840
	Stem Wall Dampproofing	960	sf	$	8.50	$	8,160
	SUBTOTAL FOUNDATIONS	**59,200**	**BGSF**	**$**	**2.13**	**$**	**126,100**
A20	**BASEMENT CONSTRUCTION**						
	Basement Construction						
	SUBTOTAL BASEMENT CONSTRUCTION	**59,200**	**BGSF**	**$**	**-**	**$**	**-**
B10	**SUPERSTRUCTURE**						
	CIP Structural Concrete						
	Horizontal Structure						
	Topping Slabs						
	4.5" Avg. Slab with Reinforcing	3,200	sf	$	8.00	$	25,600
	Structural Steel						
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)						
	New Addition Structural Framing (12 psf Allowance for Floor)	74,400	lbs	$	3.50	$	260,400
	Renovation Structural Seismic Framing Allowance	238,500	lbs	$	4.00	$	954,000
	Metal Decking						
	Floor Decking - 3"	3,200	sf	$	9.00	$	28,800
	Roofing Decking - 1.5"	3,200	sf	$	6.50	$	20,800
	Miscellaneous Metals						
	Allowance	59,200	gsf	$	0.50	$	29,600
	Building Canopies - Allowance	1,500	sf	$	50.00	$	75,000

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
	Fireproofing				
	Structural Steel Fireproofing				
	Sprayed Cementitious Fireproofing (Metal Deck Area)	6,200	sf	$ 5.00	$ 31,000
	Firestopping - See Interior Partitions				
	SUBTOTAL SUPERSTRUCTURE	**59,200**	**BGSF**	**$ 24.07**	**$ 1,425,200**
B20	**EXTERIOR ENCLOSURE**				
	Exterior Wall Construction				
	Exterior Wall Assembly - Allowance	3,072	sf	$ 37.00	$ 113,664
	Loadbearing CMU or Concrete Walls - In B10 Superstructure Above				
	Exterior Wall Finish				
	Masonry Veneer				
	Brick Veneer @ New Façade	3,072	sf	$ 45.00	$ 138,240
	Brick Veneer Repair & Repointing Allowance	22,771	sf	$ 20.00	$ 455,424
	Miscellaneous				
	Galvanized Steel Lintels	1	ls	$ 10,000.00	$ 10,000
	Sill Flashing	1	ls	$ 7,500.00	$ 7,500
	Exterior Windows				
	Storefront / Windows, Standard Clear Anodized with Flashing	5,669	sf	$ 110.00	$ 623,589
	Curtain Wall, Standard Clear Anodized with Flashing	3,456	sf	$ 150.00	$ 518,400
	Expansion/Seismic Joints				
	Roof Joints	90	lf	$ 500.00	$ 45,000
	Exterior Wall Joints	64	lf	$ 500.00	$ 32,000
	Exterior Doors				
	Storefront Entry Doors, Hardware, per leaf	4	ea	$ 7,500.00	$ 30,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	6	ea	$ 4,200.00	$ 25,200
	Push Button ADA Auto Operators (per entrance)	2	ea	$ 10,000.00	$ 20,000
	Premium for Electronic Hardware at Card Readers (Reader Devices included with Electrical)	6	ea	$ 1,000.00	$ 6,000
	Exterior Paint & Sealants				
	Masonry Water Repellants / Anti-Graffiti Coating	25,843	sf	$ 2.50	$ 64,608
	Paint to HM Doors and Frames	6	ea	$ 175.00	$ 1,050
	Exterior - Control Joints, Caulking and Joint Sealants	59,200	gsf	$ 0.50	$ 29,600
	Building Graphics				
	Allowance for Building Signage	1	ls	$ 15,000.00	$ 15,000
	SUBTOTAL EXTERIOR ENCLOSURE	**59,200**	**BGSF**	**$ 36.07**	**$ 2,135,275**
B30	**ROOFING**				
	Roof Coverings				
	Membrane Roofing System w/ Rigid Insulation	3,200	sf	$ 24.00	$ 76,800
	Membrane Roofing Lapping up Backside of Parapets	720	sf	$ 18.00	$ 12,960

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Flashing and Sheet Metal						
	Parapet Caps and Copings	240	lf	$	35.00	$	8,400
	Fascia	90	lf	$	30.00	$	2,700
	Miscellaneous Roof Flashing and Rough Carpentry	10%	on	$	89,760.00	$	8,976
	Downspouts	2	ea	$	350.00	$	700
	Conductor Heads	2	ea	$	375.00	$	750
	Roof Accessories						
	Walk Pads	1	ls	$	2,500.00	$	2,500
	Fall Protection Anchors	4	ea	$	750.00	$	3,000
	Access Ladders	1	ea	$	3,500.00	$	3,500
	Roof Hatches	1	ea	$	2,500.00	$	2,500
	SUBTOTAL ROOFING	**59,200**	**BGSF**	**$**	**2.07**	**$**	**122,786**
C10	**INTERIOR CONSTRUCTION**						
	Partitions						
	GWB Partition (GWB - Finish 2 Sides, metal studs 6", 3 1/2" sound batts) - Renovation	89,600	sf	$	18.00	$	1,612,800
	GWB Partition (GWB - Finish 2 Sides, metal studs 6", 3 1/2" sound batts) - New Addition	5,120	sf	$	18.00	$	92,160
	Fire Caulking at Penetrations	59,200	gsf	$	0.50	$	29,600
	Interior - Caulking and Joint Sealants	59,200	gsf	$	0.45	$	26,640
	Miscellaneous Carpentry - Allowance	59,200	gsf	$	1.50	$	88,800
	Concrete & CMU Walls - See B10 Superstructure Above						
	Interior Glazing						
	Interior Storefront with 1/4" tempered glazing	9,472	sf	$	65.00	$	615,680
	HM Sidelights/Relites with 1/4" tempered glazing	1	ls	$	20,000.00	$	20,000
	HM Door Lite Glazing	1	ls	$	10,000.00	$	10,000
	Interior Doors, Frames, Hardware						
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	169	ea	$	4,200.00	$	710,400
	Premium for Hardware at Card Readers (Reader Devices included with Electrical) - Allowance	1	ls	$	30,000.00	$	30,000
	Premium for 90 Minute Door - Allowance	1	ls		10,000.00	$	10,000
	Aluminum Storefront Doors, HW, Complete - per leaf	4	ea		6,500.00	$	26,000
	Access Doors and Panels	59,200	gsf	$	0.15	$	8,880
	Interior Railings						
	Balcony Rails, Glazed - Allowance	125	lf	$	375.00	$	46,875
	Sloping Stair Rails and Grabs - Included with Stairs Below						
	Fittings / Specialties - Allowances						
	Visual Display Specialties						
101100	Marker Boards (12' x 5') - Allowance	40	ea	$	1,800.00	$	72,000
	Marker Boards (6' x 5') - Allowance	21	ea	$	1,000.00	$	21,000
	Signage (Code and Wayfinding)	59,200	gsf	$	0.75	$	44,400

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Toilet Compartments (Metal) (Stainless Steel) (Solid Polymer) (P-Lam) (Phenolic)						
	Small Multi-user Restrooms (Incl. Toilet Partitions)	4	ea	$	4,500.00	$	18,000
	Large Multi-user Restrooms (Incl. Toilet Partitions)	4	ea	$	5,500.00	$	22,000
	Operable Partitions						
	Folding Panel Partitions - Allowance	1	ls	$	100,000.00	$	100,000
	Header Support	1	ls	$	10,000.00	$	10,000
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	59,200	gsf	$	0.50	$	29,600
	SUBTOTAL INTERIOR CONSTRUCTION	**59,200**	**BGSF**	**$**	**61.57**	**$**	**3,644,835**
C20	**STAIRS**						
	Stair Construction (Allowance)						
	Picket Railing @ Elevated Deck - Target Value	40	lf	$	300.00	$	12,000
	New Handrails @ Existing Stairs - Allowance	180	lf	$	125.00	$	22,500
	SUBTOTAL STAIRS	**59,200**	**BGSF**	**$**	**0.58**	**$**	**34,500**
C30	**INTERIOR FINISHES**						
	Wall Finishes - Allowances						
	Paint to Walls, Doors, Frames and Miscellaneous	59,200	gsf	$	5.00	$	296,000
	Wood Wall Panels - Allowance	59,200	gsf	$	4.00	$	236,800
	Restroom Wall Tile	1,250	sf	$	30.00	$	37,500
	Lobby Entrance Wall Finishes - Allowance for TBD	1	ls	$	25,000.00	$	25,000
	Acoustical Wall Panels						
	Fabric Covered, 1.5" Thick - TBD Allowance	5,000	sf	$	34.00	$	170,000
	Miscellaneous Finish Carpentry Allowance	59,200	gsf	$	1.50	$	88,800
	Bases						
	Rubber Base - Allowance	15,000	lf	$	3.00	$	45,000
	Tile Base - Allowance	700	lf	$	30.00	$	21,000
	Floor Finishes - Allowances						
	Carpet, Walk Off Matt Luxury Vinyl Tile, Linoleum, & Sealed Concrete	58,000	sf	$	9.50	$	551,000
	Ceramic/Quarry Tile	1,200	sf	$	30.00	$	36,000
	Floor Prep & Protection	59,200	sf	$	1.00	$	59,200
	Ceiling Finishes						
	ACT Ceiling (2x4, GWB Painted Ceilings, & Open to Structure Ceilings - Allowance	59,200	sf	$	10.00	$	592,000
	SUBTOTAL INTERIOR FINISHES	**59,200**	**BGSF**	**$**	**36.46**	**$**	**2,158,300**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	Hydraulic Elevator (2) Stops - Allowance (Retrofit)	2	ea	$	85,000.00	$	170,000
	SUBTOTAL CONVEYING SYSTEMS	**59,200**	**BGSF**	**$**	**2.87**	**$**	**170,000**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D20	**PLUMBING**						
	Plumbing						
	Plumbing - High Performance (per MW Engineers)	59,200	gsf	$	31.43	$	1,860,712
	SUBTOTAL PLUMBING	**59,200**	**BGSF**	**$**	**31.43**	**$**	**1,860,712**
D30	**HVAC**						
	HVAC						
	HVAC - High Performance (per MW Engineers)	59,200	gsf	$	100.90	$	5,973,229
	SUBTOTAL HVAC	**59,200**	**BGSF**	**$**	**100.90**	**$**	**5,973,229**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Fire Protection - High Performance (per MW Engineers)	59,200	gsf	$	6.39	$	378,084
	SUBTOTAL FIRE PROTECTION	**59,200**	**BGSF**	**$**	**6.39**	**$**	**378,084**
D50	**ELECTRICAL**						
	Electrical - High Performance (per MW Engineers)						
	Power	59,200	gsf	$	39.24	$	2,322,998
	Lighting & Controls	59,200	gsf	$	16.09	$	952,524
	Telecom, AV	59,200	gsf	$	18.95	$	1,121,835
	FA, Sec	59,200	gsf	$	4.69	$	277,647
	SUBTOTAL ELECTRICAL	**59,200**	**BGSF**	**$**	**78.97**	**$**	**4,675,004**
E10	**EQUIPMENT**						
113000	**Residential Equipment - Allowance**						
	Refrigerator	4	ea	$	2,000.00	$	8,000
	Microwave	4	ea	$	450.00	$	1,800
	Dishwasher	4	ea	$	1,000.00	$	4,000
115200	**Projection Screen Equipment**						
	Surface Mounted	12	ea	$	600.00	$	7,200
	SUBTOTAL EQUIPMENT	**59,200**	**BGSF**	**$**	**0.35**	**$**	**21,000**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework - Estimated						
	Building Allowance Per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Engineered Quartz Counters / Lab and Science Phenolic Counter Tops	59,200	sf	$	8.50	$	503,200
	Entrance Casework - Allowance	1	ls	$	30,000.00	$	30,000
	Window Treatment - Allowance						
	Black Out Roller Shades at Re-Lite Sidelight Glazing	1,200	sf	$	30.00	$	36,000
	Roller Shades	5,669	sf	$	20.00	$	113,380

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**59,200**	**BGSF**	**$**	**11.53**	**$**	**682,580**
F10	**SPECIAL CONSTRUCTION**						
	Scaffolding - Target Value						
	Erect Scaffolding, Certify and Dismantle Scaffolding Incl. First Month Rent	1	ls	$	1,100,000.00		$1,100,000
	Monthly Rental	12	mo	$	10,000.00		$120,000
	Shrink Wrap Scaffolding - (ACM Stucco Removal)	1	ls	$	200,000.00		$200,000
	Maintaining Scaffolding and Screening	200	hr	$	97.00		$19,400
	SUBTOTAL SPECIAL CONSTRUCTION	**59,200**	**BGSF**	**$**	**24.31**	**$**	**1,439,400**
F20	**SELECTIVE BUILDING DEMOLITION**						
	Building Exterior Demolition						
	Exterior Wall Assembly w Openings	53,000	sf	$	3.00	$	159,000
	Doors, Frame & HW						Incl.
	Windows & Storefront						Incl.
	Building Interior Demolition						
	Partitions w Openings	53,000	sf	$	8.00	$	424,000
	Door, Frame & HW						Incl.
	Flooring	53,000	gsf	$	1.50	$	79,500
	Rubber Base	3,500	lf	$	0.50	$	1,750
	Ceilings	53,000	gsf	$	0.75	$	39,750
	Casework	2,000	lf	$	15.00	$	30,000
	Miscellaneous Demolition	240	hrs	$	110.00	$	26,400
	Temporary Partitions / Dust Control	1	ls	$	5,000.00	$	5,000
	Supervision, Hauling & Dump Fees	15%	on	$	765,400.00	$	114,810
	Mechanical, Electrical and Plumbing	In MEP Numbers Above					
	Hazardous Components Abatement						
	ACM Removal - Allowance	53,000	sf	$	9.00	$	477,000
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**59,200**	**BGSF**	**$**	**22.93**	**$**	**1,357,210**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**59,200**	**BGSF**	**$**	**-**	**$**	**-**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	59,200
Project Start Date:	Q1, 2026	**Site GSF:**	72,070
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	72,070	SGA	$ 5.27	$ 379,783
G20	Site Improvements	72,070	SGA	$ 8.10	$ 583,767
G30	Site Civil / Mech Utilities	72,070	SGA	$ 3.75	$ 270,210
G40	Site Electrical Utilities	72,070	SGA	$ 2.60	$ 187,500
G50	Other Site Construction	72,070	SGA	$ 1.91	$ 137,500
SITEWORK SUBTOTAL					**$ 1,558,760**
	Design Contingency			20.00%	$ 311,752
	Subtotal				$ 1,870,511
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 112,231
	Subtotal				$ 1,982,742
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**72,070**	**SGA**	**$ 27.51**	**$ 1,982,742**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G10	**SITE PREPARATION**						
	General Sitework Requirements						
	Mobilization	1	ls	$	30,000.00	$	30,000
	Site Layout & Potholing	1	ls	$	5,000.00	$	5,000
	Traffic Control (for entire project)	8	weeks	$	6,500.00	$	52,000
	Site Improvements Demolition & Relocation						
	Selective Site Demo & Protection of Site Items - Allowance	72,070	sf	$	0.35	$	25,225
	Demo Utilities						
	Piping (water), Piping (sewer, storm, etc.), Structures (manhole, catch basin, hydrant), Cap Utiilities (abandon pipe in place)	72,070	sf	$	1.00	$	72,070
	Misc. Site Clearing	72,070	sf	$	0.25	$	18,018
	Site Earthwork						
	Temporary Construction Fencing	680	lf	$	12.00	$	8,160
	TESC Erosion Control - Filter Fabric Fence, Catch Basin Inlet Protection, & Stabilized Construction Entry	1	ls	$	12,500	$	12,500
	Tree Protection Fencing	1	ls	$	3,500	$	3,500
	Contractor Access and Laydown Area	2,500	sf	$	2.00	$	5,000
	Clear and Grub	72,070	sf	$	0.15	$	10,811
	Excavation						
	Native Cut / Fill - Allowance	1,500	cy	$	35	$	52,500
	Export Unsuitable - Allowance	500	cy	$	75	$	37,500
	Imported Fill - Allowance	500	cy	$	55	$	27,500
	Dewatering - Allowance	1	ls	$	20,000.00	$	20,000
	Foundation Earthwork						
	Footing Excavation and Backfill	In Building Section A10					
	Footing Drains with Gravel	In Building Section A10					
	Hazardous Waste Remediation						
	None Included						
	SUBTOTAL SITE PREPARATON	**72,070**	**SGA**	**$**	**5.27**	**$**	**379,783**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving & Concrete Site Work (Base Courses Included)						
	Heavy Duty & Light Duty (HMA over Crushed Rock), Concrete Curbs, Concrete Paving and Walkways, and Pavement Markings - Allowance	72,070	sf	$	4.00	$	288,280
	Site Development						
	Concrete Retaining Walls, Seat Walls, Fencing, Bike Rack and Flag Pole	72,070	sf	$	0.75	$	54,053
	Landscaping/Irrigation						
	Irrigation - General Landscaping - Allowance	72,070	sf	$	0.50	$	36,035

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Planter Shrubs and Ground Cover - Allowance	72,070	sf	$	2.50	$	180,175
	Trees - Allowance - Allowance	72,070	ea	$	0.35	$	25,225
	SUBTOTAL SITE IMPROVEMENTS	**72,070**	**SGA**	**$**	**8.10**	**$**	**583,767**
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Water Service Utilities (Incl. Tie-in to Existing, Water/Fire Line, Water Meter, Irrigation Meter, Valve, Domestic Water, Fire Department Connection & Existing Street Surface Repair/Traffic Control) - Allowance	72,070	sga	$	1.00	$	72,070
	Sanitary Sewer Systems						
	Sanitary Sewer Systems (Incl. Tie-in to Existing, Sewer Line, Cleanouts, Manhole, Septic System & Drain Field and Associated System & Existing Street Surface Repair/Traffic Control) - Allowance	72,070	sga	$	0.75	$	54,053
	Storm Drainage						
	Storm Drainage (Incl. Tie-in to Existing, Drain Line, Cleanouts, Catch Basin, Bioretention & Existing Street Surface Repair/Traffic Control) - Allowance	72,070	sga	$	1.25	$	90,088
	Storm Water Swale - Allowance	3,000	sf	$	18.00	$	54,000
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**72,070**	**SGA**	**$**	**3.75**	**$**	**270,210**
G40	**SITE ELECTRICAL UTILITIES**						
	Electrical Utility - Allowance	1	ls	$	75,000	$	75,000
	Tele/Data Utility - Allowance	1	ls	$	15,000	$	15,000
	Site Lighting LED (Branch and Pole Bases) - Allowance	1	ls	$	30,000	$	30,000
	Site Power - Allowance	1	ls	$	15,000	$	15,000
	Site Cameras (Rough-in) - Allowance	1	ls	$	7,500	$	7,500
	Site Cameras (Install) - Allowance	1	ls	$	30,000	$	30,000
	Car Charger - Allowance	1	ls	$	15,000	$	15,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**72,070**	**SGA**	**$**	**2.60**	**$**	**187,500**
G50	**OTHER SITE CONSTRUCTION**						
	Service Tunnels - Allowance						
	Utilidor Tunnel extended to beyond site footprint for future buildir	25	lf	$	4,500	$	112,500
	Utilidor Tunnel - Excavation Allowance	1	ls	$	20,000	$	20,000
	Landscaping Repair - Allowance	1	ls	$	5,000	$	5,000
	SUBTOTAL OTHER SITE CONSTRUCTION	**72,070**	**SGA**	**$**	**1.91**	**$**	**137,500**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**72,070**	**SGA**	**$ -**	**$ -**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	73,800
Project Start Date:	Q1, 2026	**Site GSF:**	26,730
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	73,800	BGSF	$ 16.44	$ 1,213,140
A20	Basement Construction	73,800	BGSF	$ -	$ -
B10	Superstructure	73,800	BGSF	$ 69.85	$ 5,154,900
B20	Exterior Enclosure	73,800	BGSF	$ 55.35	$ 4,084,553
B30	Roofing	73,800	BGSF	$ 10.44	$ 770,639
C10	Interior Construction	73,800	BGSF	$ 67.11	$ 4,952,962
C20	Stairs	73,800	BGSF	$ 2.91	$ 215,000
C30	Interior Finishes	73,800	BGSF	$ 44.79	$ 3,305,300
D10	Conveying Systems	73,800	BGSF	$ 3.05	$ 225,000
D20	Plumbing	73,800	BGSF	$ 27.15	$ 2,003,314
D30	HVAC	73,800	BGSF	$ 83.35	$ 6,151,402
D40	Fire Protection	73,800	BGSF	$ 5.52	$ 407,060
D50	Electrical	73,800	BGSF	$ 75.47	$ 5,569,718
E10	Equipment	73,800	BGSF	$ 0.61	$ 45,000
E20	Casework & Furnishings	73,800	BGSF	$ 10.58	$ 780,600
F10	Special Construction	73,800	BGSF	$ -	$ -
F20	Selective Demolition	73,800	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 34,878,588**
	Design Contingency			20.00%	$ 6,975,718
	Subtotal				$ 41,854,306
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 2,511,258
	Subtotal				$ 44,365,564
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**73,800**	**BGSF**	**$ 601.16**	**$ 44,365,564**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
A10	**FOUNDATIONS**				
	Foundation Earthwork				
	Footing Excavation and Backfill (Native Soil)	4,456	cy	$ 45.00	$ 200,520
	Footing Drains with Gravel	620	lf	$ 35.00	$ 21,700
	Foundations				
	Spread Footings (includes reinforcing)	214	cy	$ 900.00	$ 192,600
	Continuous Footings (includes reinforcing)	101	cy	$ 800.00	$ 80,800
	Brace Frame Footings (includes reinforcing)	212	cy	$ 750.00	$ 159,000
	Perimeter Stem Wall (includes reinforcing)	30	cy	$ 2,660.00	$ 79,800
	Reinforce Existing Foundations / Drills & Epoxy - Allowance	90	lf	$ 350.00	$ 31,500
	Slab-on-Grade				
	Slab on Grade (includes reinforcing, base course and vapor barrier)	24,600	sf	$ 11.50	$ 282,900
	Slab on Grade (includes reinforcing, base course and vapor barrier) - Transition to Phase 1 Allowance	1	ls	$ 15,000.00	$ 15,000
	Misc. Concrete				
	Roof Conc. Mechanical House Keeping Pads	1,000	sf	$ 25.00	$ 25,000
	Mechanical and Electrical Conc. House Keeping Pads	1,500	sf	$ 25.00	$ 37,500
	Elevator Pits (includes ladder, hoist beam, sump & waterproofing	1	ea	$ 30,000.00	$ 30,000
	Set Column Anchor Bolts	52	set	$ 350.00	$ 18,200
	Grout Baseplates	52	ea	$ 75.00	$ 3,900
	Perimeter Insulation / Waterproofing				
	2" Rigid Polystyrene	2,480	sf	$ 4.00	$ 9,920
	Stem Wall Dampproofing	2,480	sf	$ 10.00	$ 24,800
	SUBTOTAL FOUNDATIONS	**73,800**	**BGSF**	**$ 16.44**	**$ 1,213,140**
A20	**BASEMENT CONSTRUCTION**				
	Basement Construction				
	SUBTOTAL BASEMENT CONSTRUCTION	**73,800**	**BGSF**	**$ -**	**$ -**
B10	**SUPERSTRUCTURE**				
	CIP Structural Concrete				
	Horizontal Structure				
	Topping Slabs				
	4.5" Avg. Slab with Reinforcing	49,200	sf	7.50	$ 369,000
	Structural Steel				
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)				
	Structural Framing (12 psf Allowance for Roof)	295,200	lbs	$ 3.50	$ 1,033,200
	Structural Framing (15 psf Allowance for Floors)	738,000	lbs	$ 3.50	$ 2,583,000
	Metal Decking				
	Floor Decking - 3"	49,200	sf	$ 9.50	$ 467,400
	Roof Decking - 3" 18GA	24,600	sf	$ 7.50	$ 184,500

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Metals						
	Allowance	73,800	gsf	$	1.00	$	73,800
	Building Canopies - Allowance	1,500	sf	$	50.00	$	75,000
	Fireproofing						
	Structural Steel Fireproofing						
	Sprayed Cementitious Fireproofing (Metal Deck Area)	73,800	sf	$	5.00	$	369,000
	Firestopping - See Interior Partitions						
	SUBTOTAL SUPERSTRUCTURE	**73,800**	**BGSF**	**$**	**69.85**	**$**	**5,154,900**
B20	**EXTERIOR ENCLOSURE**						
	Exterior Wall Construction						
	Exterior Wall Assembly - Allowance	27,523	sf	$	37.00	$	1,018,358
	Loadbearing CMU or Concrete Walls - In B10 Superstructure Above						
	Exterior Wall Finish						
	Masonry Veneer						
	Brick Veneer @ New Façade	29,610	sf	$	45.00	$	1,332,450
	Exterior Windows						
	Storefront / Windows, Standard Clear Anodized with Flashing	6,345	sf		110.00	$	697,950
	Curtain Wall, Standard Clear Anodized with Flashing	5,471	sf		150.00	$	820,620
	Exterior Doors						
	Storefront Entry Doors, Hardware, per leaf	4	ea		7,500.00	$	30,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	6	ea		4,200.00	$	25,200
	Push Button ADA Auto Operators (per entrance)	2	ea		10,000.00	$	20,000
	Premium for Electronic Hardware at Card Readers (Reader Devices included with Electrical)	8	ea		1,000.00	$	8,000
	Exterior Paint & Sealants						
	Masonry Water Repellants / Anti-Graffiti Coating	29,610	sf		2.50	$	74,025
	Paint to HM Doors and Frames	6	ea	$	175.00	$	1,050
	Exterior - Control Joints, Caulking and Joint Sealants	73,800	gsf	$	0.50	$	36,900
	Building Graphics						
	Allowance for Building Signage	1	ls	$	20,000.00	$	20,000
	SUBTOTAL EXTERIOR ENCLOSURE	**73,800**	**BGSF**	**$**	**55.35**	**$**	**4,084,553**
B30	**ROOFING**						
	Roof Coverings						
	Membrane Roofing System w/ Rigid Insulation	24,600	sf	$	24.00	$	590,400
	Membrane Roofing Lapping up Backside of Parapets	1,755	sf	$	18.00	$	31,590
	Flashing and Sheet Metal						
	Parapet Caps and Copings	585	lf	$	35.00	$	20,475
	Fascia	585	lf	$	30.00	$	17,550
	Miscellaneous Roof Flashing and Rough Carpentry	10%	on	$	621,990.00	$	62,199
	Downspouts	9	ea	$	450.00	$	4,050
	Conductor Heads	9	ea	$	375.00	$	3,375

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
	Roof Accessories				
	Walk Pads	2,500	sf	$ 8.00	$ 20,000
	Fall Protection Anchors	20	ea	$ 750.00	$ 15,000
	Access Ladders	1	ea	$ 3,500.00	$ 3,500
	Roof Hatches	1	ea	$ 2,500.00	$ 2,500
	SUBTOTAL ROOFING	**73,800**	**BGSF**	**$ 10.44**	**$ 770,639**
C10	**INTERIOR CONSTRUCTION**				
	Partitions				
	GWB Wall Partition - Allowance	82,656	sf	$ 18.00	$ 1,487,808
	Glass Wall Partitions - Allowance	35,424	sf	$ 50.00	$ 1,771,200
	Fire Caulking at Penetrations	73,800	gsf	$ 0.35	$ 25,830
	Interior - Caulking and Joint Sealants	73,800	gsf	$ 0.30	$ 22,140
	Miscellaneous Carpentry - Allowance	73,800	gsf	$ 1.00	$ 73,800
	Concrete & CMU Walls - See B10 Superstructure Above				
	Interior Glazing				
	Interior Storefront with 1/4" tempered glazing	8,266	sf	$ 65.00	$ 537,264
	HM Sidelights/Relites with 1/4" tempered glazing	880	sf	$ 35.00	$ 30,800
	Interior Doors, Frames, Hardware				
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	174	ea	$ 4,200.00	$ 730,800
	Premium for Relite Frame - per leaf	55	ea	$ 400.00	$ 22,000
	Aluminum Storefront Doors, HW, Complete - per leaf	12	ea	$ 7,500.00	$ 90,000
	Access Doors and Panels	73,800	gsf	$ 0.15	$ 11,070
	Interior Railings				
	Sloping Stair Rails and Grabs - Included with Stairs Below				
	Fittings / Specialties				
	Visual Display Specialties				
	Visual Display Specialties / Mark Boards - Allowance	1	ls	$ 20,000.00	$ 20,000
	Signage (Code and Wayfinding)	73,800	gsf	$ 0.75	$ 55,350
	Toilet Compartments (Metal) (Stainless Steel) (Solid Polymer) (P-Lam) (Phenolic)				
	Small Multi-user Restrooms (Incl. Toilet Partitions)	6	ea	$ 4,500.00	$ 27,000
	Large Multi-user Restrooms (Incl. Toilet Partitions)	2	ea	$ 5,500.00	$ 11,000
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	73,800	gsf	$ 0.50	$ 36,900
	SUBTOTAL INTERIOR CONSTRUCTION	**73,800**	**BGSF**	**$ 67.11**	**$ 4,952,962**
C20	**STAIRS**				
	Stair Construction (includes concrete, finishes and guard/hand rails)				
	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	4	ea	$ 35,000.00	$ 140,000
	Feature Stair	1	ea	$ 75,000.00	$ 75,000
	SUBTOTAL STAIRS	**73,800**	**BGSF**	**$ 2.91**	**$ 215,000**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
C30	**INTERIOR FINISHES**						
	Wall Finishes						
	Paint to Walls, Doors, Frames and Miscellaneous	73,800	gsf	$	5.00	$	369,000
	Restroom Wall Tile	1,500	sf	$	30.00	$	45,000
	Lobby Entrance Wall Finishes (TBD) - Allowance	1	ls	$	30,000.00	$	30,000
	Wood Wall Panels - Allowance	73,800	gsf	$	6.00	$	442,800
	Vinyl Wallcovering (TBD) - Allowance	73,800	gsf	$	3.00	$	221,400
	Fiberglass Reinforced Panel - Allowance	1	ls	$	20,000.00	$	20,000
	Miscellaneous Finish Carpentry Allowance	73,800	gsf	$	1.50	$	110,700
	Bases						
	Floor Base (TBD) - Allowance	73,800	gsf	$	3.00	$	221,400
	Floor Finishes						
	Floor Finishes (Carpet, Sealed Concrete, VCT, LVT & Ceramic Tile) - Allowance	73,800	sf	$	10.50	$	774,900
	Floor Prep & Protection	73,800	sf	$	1.00	$	73,800
	Ceiling Finishes						
	Ceiling Finishes (ACT, GWB - Painted & Exposed Ceiling - Painted) - Allowance	73,800	gsf	$	5.00	$	369,000
	Acoustic Wood Panels Ceiling - Allowance	73,800	gsf	$	8.50	$	627,300
	SUBTOTAL INTERIOR FINISHES	**73,800**	**BGSF**	**$**	**44.79**	**$**	**3,305,300**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	Hydraulic Elevator (3) Stops	3	ea	$	75,000.00	$	225,000
	SUBTOTAL CONVEYING SYSTEMS	**73,800**	**BGSF**	**$**	**3.05**	**$**	**225,000**
D20	**PLUMBING**						
	Plumbing						
	Plumbing - High Performance (per MW Engineers)	73,800	gsf	$	27.15	$	2,003,314
	SUBTOTAL PLUMBING	**73,800**	**BGSF**	**$**	**27.15**	**$**	**2,003,314**
D30	**HVAC**						
	HVAC						
	HVAC - High Performance (per MW Engineers)	73,800	gsf	$	83.35	$	6,151,402
	SUBTOTAL HVAC	**73,800**	**BGSF**	**$**	**83.35**	**$**	**6,151,402**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Fire Protection - High Performance (per MW Engineers)	73,800	gsf	$	5.52	$	407,060
	SUBTOTAL FIRE PROTECTION	**73,800**	**BGSF**	**$**	**5.52**	**$**	**407,060**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D50	**ELECTRICAL**						
	Electrical - High Performance (per MW Engineers)						
	Power	73,800	gsf	$	36.24	$	2,674,527
	Lighting & Controls	73,800	gsf	$	16.09	$	1,187,449
	Telecom, AV	73,800	gsf	$	18.95	$	1,398,518
	FA, Sec	73,800	gsf	$	4.19	$	309,223
	SUBTOTAL ELECTRICAL	**73,800**	**BGSF**	**$**	**75.47**	**$**	**5,569,718**
E10	**EQUIPMENT**						
	Residential Equipment						
	Residential Equipment - Allowance	1	ls	$	20,000.00	$	20,000
	Projection Screen Equipment						
	Projection Screen Equipment Ceiling Recessed - Allowance	1	ls	$	25,000.00	$	25,000
	SUBTOTAL EQUIPMENT	**73,800**	**BGSF**	**$**	**0.61**	**$**	**45,000**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	73,800	gsf	$	8.50	$	627,300
	Window Treatment						
	Blackout Shades - Sidelites/Relites	880	sf	$	30.00	$	26,400
	Roller Shades	6,345	sf	$	20.00	$	126,900
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**73,800**	**BGSF**	**$**	**10.58**	**$**	**780,600**
F10	**SPECIAL CONSTRUCTION**						
	Special Construction						
	SUBTOTAL SPECIAL CONSTRUCTION	**73,800**	**BGSF**	**$**	**-**	**$**	**-**
F20	**SELECTIVE BUILDING DEMOLITION**						
	Selective Building Demolition						
	Hazardous Components Abatement						
	None						
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**73,800**	**BGSF**	**$**	**-**	**$**	**-**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**73,800**	**BGSF**	**$ -**	**$ -**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	73,800
Project Start Date:	Q1, 2026	**Site GSF:**	26,730
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY							
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**		**Total Estimated Cost**	
G10	Site Preparation	26,730	SGA	$	7.74	$	206,949
G20	Site Improvements	26,730	SGA	$	5.75	$	153,698
G30	Site Civil / Mech Utilities	26,730	SGA	$	3.50	$	93,555
G40	Site Electrical Utilities	26,730	SGA	$	3.09	$	82,500
G50	Other Site Construction	26,730	SGA	$	-	$	-
SITEWORK SUBTOTAL						**$**	**536,702**
	Design Contingency			20.00%		$	107,340
	Subtotal					$	644,042
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%		$	38,643
	Subtotal					$	682,684
	Escalation to Mid-Point (See Summary)					$	-
SITE GRAND TOTAL		**26,730**	**SGA**	**$**	**25.54**	**$**	**682,684**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G10	**SITE PREPARATION**						
	General Sitework Requirements						
	Mobilization	1	ls	$	25,000.00	$	25,000
	Site Layout & Potholing	1	ls	$	2,500.00	$	2,500
	Traffic Control (for entire project)	4	weeks	$	6,500.00	$	26,000
	Site Improvements Demolition & Relocation						
	Selective Site Demo & Protection of Site Items - Allowance	26,730	sf	$	0.25	$	6,683
	Demo Utilities						
	Piping (water), Piping (sewer, storm, etc.), Structures (manhole, catch basin, hydrant), Cap Utiilities (abandon pipe in place)	26,730	sf	$	0.75	$	20,048
	Misc. Site Clearing	26,730	sf	$	0.15	$	4,010
	Site Earthwork						
	Temporary Construction Fencing	600	lf	$	12.00	$	7,200
	TESC Erosion Control - Filter Fabric Fence, Catch Basin Inlet Protection, & Stabilized Construction Entry	1	ls	$	12,500	$	12,500
	Tree Protection Fencing	1	ls	$	3,500	$	3,500
	Contractor Access and Laydown Area	1,500	sf	$	2.00	$	3,000
	Clear and Grub	26,730	sf	$	0.15	$	4,010
	Excavation						
	Native Cut / Fill - Allowance	500	cy	$	35.00	$	17,500
	Export Unsuitable - Allowance	500	cy	$	75.00	$	37,500
	Imported Fill - Allowance	500	cy	$	55.00	$	27,500
	Dewatering - Allowance	1	ls	$	10,000.00	$	10,000
	Foundation Earthwork						
	Footing Excavation and Backfill	In Building Section A10					
	Footing Drains with Gravel	In Building Section A10					
	Hazardous Waste Remediation						
	None Included						
	SUBTOTAL SITE PREPARATON	**26,730**	**SGA**	**$**	**7.74**	**$**	**206,949**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving & Concrete Site Work (Base Courses Included)						
	Concrete Curbs, Concrete Paving and Walkways - Allowance	26,730	sf	$	2.00	$	53,460
	Site Development						
	Concrete Retaining Walls, Seat Walls, Fencing, Bike Rack and Flag Pole - Allowance	26,730	sf	$	0.75	$	20,048
	Landscaping/Irrigation						
	Irrigation - General Landscaping - Allowance	26,730	sf	$	0.50	$	13,365
	Planter Shrubs and Ground Cover - Allowance	26,730	sf	$	2.50	$	66,825
	SUBTOTAL SITE IMPROVEMENTS	**26,730**	**SGA**	**$**	**5.75**	**$**	**153,698**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Water Service Utilities (Incl. Tie-in to Existing, Water/Fire Line, Water Meter, Irrigation Meter, Valve, Domestic Water, Fire Department Connection & Existing Street Surface Repair/Traffic Control) - Allowance	26,730	sga	$	1.25	$	33,413
	Sanitary Sewer Systems						
	Sanitary Sewer Systems (Incl. Tie-in to Existing, Sewer Line, Cleanouts, Manhole, Septic System & Drain Field and Associated System & Existing Street Surface Repair/Traffic Control) - Allowance	26,730	sga	$	0.75	$	20,048
	Storm Drainage						
	Storm Drainage (Incl. Tie-in to Existing, Drain Line, Cleanouts, Catch Basin, Bioretention & Existing Street Surface Repair/Traffic Control) - Allowance	26,730	sga	$	1.50	$	40,095
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**26,730**	**SGA**	**$**	**3.50**	**$**	**93,555**
G40	**SITE ELECTRICAL UTILITIES**						
	Electrical Utility - Allowance	1	ls	$	35,000	$	35,000
	Tele/Data Utility - Allowance	1	ls	$	5,000	$	5,000
	Site Lighting LED (Branch and Pole Bases) - Allowance	1	ls	$	15,000	$	15,000
	Site Power - Allowance	1	ls	$	7,500	$	7,500
	Site Cameras (Rough-in) - Allowance	1	ls	$	5,000	$	5,000
	Site Cameras (Install) - Allowance	1	ls	$	15,000	$	15,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**26,730**	**SGA**	**$**	**3.09**	**$**	**82,500**
G50	**OTHER SITE CONSTRUCTION**						
	Other Site Construction						
	SUBTOTAL OTHER SITE CONSTRUCTION	**26,730**	**SGA**	**$**	**-**	**$**	**-**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**26,730**	**SGA**	**$**	**-**	**$**	**-**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	71,478
Project Start Date:	Q3, 2027	**Site GSF:**	43,740
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	71,478	BGSF	$ 21.10	$ 1,508,137
A20	Basement Construction	71,478	BGSF	$ -	$ -
B10	Superstructure	71,478	BGSF	$ 62.88	$ 4,494,742
B20	Exterior Enclosure	71,478	BGSF	$ 64.59	$ 4,616,977
B30	Roofing	71,478	BGSF	$ 10.74	$ 767,624
C10	Interior Construction	71,478	BGSF	$ 68.86	$ 4,921,975
C20	Stairs	71,478	BGSF	$ 1.96	$ 140,000
C30	Interior Finishes	71,478	BGSF	$ 44.51	$ 3,181,807
D10	Conveying Systems	71,478	BGSF	$ 3.15	$ 225,000
D20	Plumbing	71,478	BGSF	$ 31.43	$ 2,246,631
D30	HVAC	71,478	BGSF	$ 100.90	$ 7,212,100
D40	Fire Protection	71,478	BGSF	$ 6.39	$ 456,500
D50	Electrical	71,478	BGSF	$ 80.48	$ 5,752,498
E10	Equipment	71,478	BGSF	$ 0.63	$ 45,000
E20	Casework & Furnishings	71,478	BGSF	$ 11.70	$ 836,163
F10	Special Construction	71,478	BGSF	$ 11.59	$ 828,750
F20	Selective Demolition	71,478	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 37,233,904**
	Design Contingency			20.00%	$ 7,446,781
	Subtotal				$ 44,680,685
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 2,680,841
	Subtotal				$ 47,361,526
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**71,478**	**BGSF**	**$ 662.60**	**$ 47,361,526**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**						
	Foundation Earthwork						
	Footing Excavation and Backfill (Native Soil)	5,989	cy	$	45.00	$	269,500
	Footing Drains with Gravel	870	lf	$	35.00	$	30,450
	Foundations						
	Spread Footings (includes reinforcing)	313	cy	$	900.00	$	282,000
	Continuous Footings (includes reinforcing)	145	cy	$	800.00	$	116,000
	Brace Frame Footings (includes reinforcing)	250	cy	$	750.00	$	187,500
	Perimeter Stem Wall (includes reinforcing)	40	cy	$	2,650.00	$	106,736
	Reinforce Existing Foundations / Drills & Epoxy - Allowance	150	lf	$	350.00	$	52,500
	Slab-on-Grade						
	Slab on Grade (includes reinforcing, base course and vapor barrier)	23,826	sf	$	11.50	$	274,000
	Slab on Grade (includes reinforcing, base course and vapor barrier) - Transition to Phase 2 Allowance	1	ls	$	25,000.00	$	25,000
	Misc. Concrete						
	Roof Conc. Mechanical House Keeping Pads	1,000	sf	$	25.00	$	25,000
	Mechanical and Electrical Conc. House Keeping Pads	1,500	sf	$	25.00	$	37,500
	Elevator Pits (includes ladder, hoist beam, sump & waterproofing	1	ea	$	30,000.00	$	30,000
	Set Column Anchor Bolts	60	set	$	340.00	$	20,252
	Grout Baseplates	60	ea	$	50.00	$	2,978
	Perimeter Insulation / Waterproofing						
	2" Rigid Polystyrene	3,480	sf	$	4.00	$	13,920
	Stem Wall Dampproofing	3,480	sf	$	10.00	$	34,800
	SUBTOTAL FOUNDATIONS	**71,478**	**BGSF**	**$**	**21.10**	**$**	**1,508,137**
A20	**BASEMENT CONSTRUCTION**						
	Basement Construction						
	SUBTOTAL BASEMENT CONSTRUCTION	**71,478**	**BGSF**	**$**	**-**	**$**	**-**
B10	**SUPERSTRUCTURE**						
	CIP Structural Concrete						
	Horizontal Structure						
	Topping Slabs						
	4.5" Avg. Slab with Reinforcing	47,652	sf	$	7.50	$	357,392
	Structural Steel						
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)						
	Structural Framing (12 psf Allowance for Floor & Roof)	857,740	lbs	$	3.50	$	3,002,089
	Metal Decking						
	Floor Decking - 3"	47,652	sf	$	9.50	$	452,696
	Roof Decking - 3" 18GA	23,826	sf	$	7.50	$	178,696

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Metals						
	Allowance	71,478	gsf	$	1.00	$	71,478
	Building Canopies - Allowance	1,500	sf	$	50.00	$	75,000
	Fireproofing						
	Structural Steel Fireproofing						
	Sprayed Cementitious Fireproofing (Metal Deck Area)	71,478	sf	$	5.00	$	357,392
	Firestopping - See Interior Partitions						
	SUBTOTAL SUPERSTRUCTURE	**71,478**	**BGSF**	**$**	**62.88**	**$**	**4,494,742**
B20	**EXTERIOR ENCLOSURE**						
	Exterior Wall Construction						
	Exterior Wall Assembly - Allowance	36,886	sf	$	37.00	$	1,364,767
	Loadbearing CMU or Concrete Walls - In B10 Superstructure Above						
	Exterior Wall Finish						
	Masonry Veneer						
	Brick Veneer @ New Façade	24,713	sf	$	45.00	$	1,112,076
	Brick Veneer Repair & Repointing Allowance	12,173	sf	$	20.00	$	243,456
	Exterior Windows						
	Storefront / Windows, Standard Clear Anodized with Flashing	9,966	sf	$	110.00	$	1,096,247
	Curtain Wall, Standard Clear Anodized with Flashing	4,004	sf	$	150.00	$	600,660
	Exterior Doors						
	Storefront Entry Doors, Hardware, per leaf	4	ea	$	7,500.00	$	30,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	6	ea	$	4,200.00	$	25,200
	Push Button ADA Auto Operators (per entrance)	2	ea	$	10,000.00	$	20,000
	Premium for Electronic Hardware at Card Readers (Reader Devices included with Electrical)	6	ea	$	1,000.00	$	6,000
	Exterior Paint & Sealants						
	Masonry Water Repellants / Anti-Graffiti Coating	24,713	sf	$	2.50	$	61,782
	Paint to HM Doors and Frames	6	ea	$	175.00	$	1,050
	Exterior - Control Joints, Caulking and Joint Sealants	71,478	gsf	$	0.50	$	35,739
	Building Graphics						
	Allowance for Building Signage	1	ls	$	20,000.00	$	20,000
	SUBTOTAL EXTERIOR ENCLOSURE	**71,478**	**BGSF**	**$**	**64.59**	**$**	**4,616,977**
B30	**ROOFING**						
	Roof Coverings						
	Membrane Roofing System w/ Rigid Insulation	23,826	sf	$	24.00	$	571,827
	Membrane Roofing Lapping up Backside of Parapets	2,175	sf	$	18.00	$	39,150
	Flashing and Sheet Metal						
	Parapet Caps and Copings	725	lf	$	35.00	$	25,375
	Fascia	725	lf	$	30.00	$	21,750

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Roof Flashing and Rough Carpentry	10%	on	$	610,976.50	$	61,098
	Downspouts	9	ea	$	450.00	$	4,050
	Conductor Heads	9	ea	$	375.00	$	3,375
	Roof Accessories						
	Walk Pads	2,500	sf	$	8.00	$	20,000
	Fall Protection Anchors	20	ea	$	750.00	$	15,000
	Access Ladders	1	ea	$	3,500.00	$	3,500
	Roof Hatches	1	ea	$	2,500.00	$	2,500
	SUBTOTAL ROOFING	**71,478**	**BGSF**	**$**	**10.74**	**$**	**767,624**
C10	**INTERIOR CONSTRUCTION**						
	Partitions						
	GWB Wall Partition - Allowance	80,056	sf	$	18.00	$	1,441,003
	Glass Wall Partitions - Allowance	34,310	sf	$	50.00	$	1,715,480
	Fire Caulking at Penetrations	71,478	gsf	$	0.35	$	25,017
	Interior - Caulking and Joint Sealants	71,478	gsf	$	0.30	$	21,443
	Miscellaneous Carpentry - Allowance	43,740	gsf	$	1.00	$	43,740
	Concrete & CMU Walls - See B10 Superstructure Above						
	Interior Glazing						
	Interior Storefront with 1/4" tempered glazing	8,006	sf	$	65.00	$	520,362
	HM Sidelights/Relites with 1/4" tempered glazing	976	sf	$	35.00	$	34,160
	Interior Doors, Frames, Hardware						
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	204	ea	$	4,200.00	$	856,800
	Premium for Relite Frame - per leaf	61	ea	$	400.00	$	24,400
	Aluminum Storefront Doors, HW, Complete - per leaf	12	ea		7,500.00	$	90,000
	Access Doors and Panels	71,478	gsf	$	0.15	$	10,722
	Interior Railings						
	Sloping Stair Rails and Grabs - Included with Stairs Below						
	Fittings / Specialties						
	Visual Display Specialties						
	Visual Display Specialties / Mark Boards - Allowance	1	ls	$	25,000.00	$	25,000
	Signage (Code and Wayfinding)	71,478	gsf	$	0.75	$	53,609
	Toilet Compartments (Metal) (Stainless Steel) (Solid Polymer) (P-Lam) (Phenolic)						
	Small Multi-user Restrooms (Incl. Toilet Partitions)	3	ea	$	4,500.00	$	13,500
	Large Multi-user Restrooms (Incl. Toilet Partitions)	2	ea	$	5,500.00	$	11,000
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	71,478	gsf	$	0.50	$	35,739
	SUBTOTAL INTERIOR CONSTRUCTION	**71,478**	**BGSF**	**$**	**68.86**	**$**	**4,921,975**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
C20	**STAIRS**						
	Stair Construction (includes concrete, finishes and guard/hand rails)						
	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	4	ea	$	35,000.00	$	140,000
	SUBTOTAL STAIRS	**71,478**	**BGSF**	**$**	**1.96**	**$**	**140,000**
C30	**INTERIOR FINISHES**						
	Wall Finishes						
	Paint to Walls, Doors, Frames and Miscellaneous	71,478	gsf	$	5.00	$	357,392
	Restroom Wall Tile	750	sf	$	30.00	$	22,500
	Lobby Entrance Wall Finishes (TBD) - Allowance	1	ls	$	30,000.00	$	30,000
	Wood Wall Panels - Allowance	71,478	gsf	$	6.00	$	428,870
	Vinyl Wallcovering (TBD) - Allowance	71,478	gsf	$	3.00	$	214,435
	Fiberglass Reinforced Panel - Allowance	1	ls	$	20,000.00	$	20,000
	Miscellaneous Finish Carpentry Allowance	71,478	gsf	$	1.50	$	107,217
	Bases						
	Floor Base (TBD) - Allowance	71,478	gsf	$	3.00	$	214,435
	Floor Finishes						
	Floor Finishes (Carpet, Sealed Concrete, VCT, LVT & Ceramic Tile) - Allowance	71,478	gsf	$	10.50	$	750,522
	Floor Prep & Protection	71,478	gsf	$	1.00	$	71,478
	Ceiling Finishes						
	Ceiling Finishes (ACT, GWB - Painted & Exposed Ceiling - Painted) - Allowance	71,478	gsf	$	5.00	$	357,392
	Acoustic Wood Panels Ceiling - Allowance	71,478	gsf	$	8.50	$	607,566
	SUBTOTAL INTERIOR FINISHES	**71,478**	**BGSF**	**$**	**44.51**	**$**	**3,181,807**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	Hydraulic Elevator (3) Stops	3	ea	$	75,000.00	$	225,000
	SUBTOTAL CONVEYING SYSTEMS	**71,478**	**BGSF**	**$**	**3.15**	**$**	**225,000**
D20	**PLUMBING**						
	Plumbing						
	Plumbing - High Performance (per MW Engineers)	71,478	gsf	$	31.43	$	2,246,631
	SUBTOTAL PLUMBING	**71,478**	**BGSF**	**$**	**31.43**	**$**	**2,246,631**
D30	**HVAC**						
	HVAC						
	HVAC - High Performance (per MW Engineers)	71,478	gsf	$	100.90	$	7,212,100
	SUBTOTAL HVAC	**71,478**	**BGSF**	**$**	**100.90**	**$**	**7,212,100**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D40	**FIRE PROTECTION**						
	Fire Protection						
	Fire Protection - High Performance (per MW Engineers)	71,478	gsf	$	6.39	$	456,500
	SUBTOTAL FIRE PROTECTION	**71,478**	**BGSF**	**$**	**6.39**	**$**	**456,500**
D50	**ELECTRICAL**						
	Electrical - High Performance (per MW Engineers)						
	Power	71,478	gsf	$	39.24	$	2,804,797
	Lighting & Controls	71,478	gsf	$	16.09	$	1,150,081
	Telecom, AV	71,478	gsf	$	18.95	$	1,354,508
	FA, Sec	71,478	gsf	$	4.69	$	335,232
	Solar PV Array	1	ls	$	107,880	$	107,880
	SUBTOTAL ELECTRICAL	**71,478**	**BGSF**	**$**	**80.48**	**$**	**5,752,498**
E10	**EQUIPMENT**						
	Residential Equipment						
	Residential Equipment - Allowance	1	ls	$	20,000.00	$	20,000
	Projection Screen Equipment						
	Projection Screen Equipment Ceiling Recessed - Allowance	1	ls	$	25,000.00	$	25,000
	SUBTOTAL EQUIPMENT	**71,478**	**BGSF**	**$**	**0.63**	**$**	**45,000**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	71,478	gsf	$	8.50	$	607,566
	Window Treatment						
	Blackout Shades - Sidelites/Relites	976	sf	$	30.00	$	29,280
	Roller Shades	9,966	sf	$	20.00	$	199,318
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**71,478**	**BGSF**	**$**	**11.70**	**$**	**836,163**
F10	**SPECIAL CONSTRUCTION**						
	Scaffolding - Target Value						
	Erect Scaffolding, Certify and Dismantle Scaffolding Incl. First Month Rent	1	ls	$	632,170.00	$	632,170
	Monthly Rental	7	mo	$	10,000.00	$	70,000
	Shrink Wrap Scaffolding - (ACM Stucco Removal)	1	ls	$	114,940.00	$	114,940
	Maintaining Scaffolding and Screening	120	hr	$	97.00	$	11,640
	SUBTOTAL SPECIAL CONSTRUCTION	**71,478**	**BGSF**	**$**	**11.59**	**$**	**828,750**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
F20	**SELECTIVE BUILDING DEMOLITION**				
	Selective Building Demolition				
	Hazardous Components Abatement				
	None				
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**71,478**	**BGSF**	**$ -**	**$ -**
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**71,478**	**BGSF**	**$ -**	**$ -**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	71,478
Project Start Date:	Q3, 2027	**Site GSF:**	43,740
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	43,740	SGA	$ 6.76	$ 295,497
G20	Site Improvements	43,740	SGA	$ 6.75	$ 295,245
G30	Site Civil / Mech Utilities	43,740	SGA	$ 3.50	$ 153,090
G40	Site Electrical Utilities	43,740	SGA	$ 9.60	$ 420,000
G50	Other Site Construction	43,740	SGA	$ 3.14	$ 137,500
SITEWORK SUBTOTAL					**$ 1,301,332**
	Design Contingency			20.00%	$ 260,266
	Subtotal				$ 1,561,598
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 93,696
	Subtotal				$ 1,655,294
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**43,740**	**SGA**	**$ 37.84**	**$ 1,655,294**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G10	**SITE PREPARATION**						
	General Sitework Requirements						
	Mobilization	1	ls	$	30,000.00	$	30,000
	Site Layout & Potholing	1	ls	$	5,000.00	$	5,000
	Traffic Control (for entire project)	6	weeks	$	6,500.00	$	39,000
	Site Improvements Demolition & Relocation						
	Selective Site Demo & Protection of Site Items - Allowance	43,740	sf	$	0.35	$	15,309
	Demo Utilities						
	Piping (water), Piping (sewer, storm, etc.), Structures (manhole, catch basin, hydrant), Cap Utiilities (abandon pipe in place)	43,740	sf	$	0.75	$	32,805
	Misc. Site Clearing	43,740	sf	$	0.25	$	10,935
	Site Earthwork						
	Temporary Construction Fencing	600	lf	$	12.00	$	7,200
	TESC Erosion Control - Filter Fabric Fence, Catch Basin Inlet Protection, & Stabilized Construction Entry	1	ls	$	12,500	$	12,500
	Tree Protection Fencing	1	ls	$	3,500	$	3,500
	Contractor Access and Laydown Area	1,500	sf	$	2.00	$	3,000
	Clear and Grub	43,740	sf	$	0.20	$	8,748
	Excavation						
	Native Cut / Fill - Allowance	1,500	cy	$	35.00	$	52,500
	Export Unsuitable - Allowance	500	cy	$	75.00	$	37,500
	Imported Fill - Allowance	500	cy	$	55.00	$	27,500
	Dewatering - Allowance	1	ls	$	10,000.00	$	10,000
	Foundation Earthwork						
	Footing Excavation and Backfill	In Building Section A10					
	Footing Drains with Gravel	In Building Section A10					
	Hazardous Waste Remediation						
	None Included						
	SUBTOTAL SITE PREPARATON	**43,740**	**SGA**	**$**	**6.76**	**$**	**295,497**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving & Concrete Site Work (Base Courses Included)						
	Heavy Duty & Light Duty (HMA over Crushed Rock), Concrete Curbs, Concrete Paving and Walkways, and Pavement Markings - Allowance	43,740	sf	$	3.00	$	131,220
	Site Development						
	Concrete Retaining Walls, Seat Walls, Fencing, Bike Rack and Flag Pole - Allowance	43,740	sf	$	0.75	$	32,805

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Landscaping/Irrigation						
	Irrigation - General Landscaping - Allowance	43,740	sf	$	0.50	$	21,870
	Planter Shrubs and Ground Cover - Allowance	43,740	sf	$	2.50	$	109,350
	SUBTOTAL SITE IMPROVEMENTS	**43,740**	**SGA**	**$**	**6.75**	**$**	**295,245**
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Water Service Utilities (Incl. Tie-in to Existing, Water/Fire Line, Water Meter, Irrigation Meter, Valve, Domestic Water, Fire Department Connection & Existing Street Surface Repair/Traffic Control) - Allowance	43,740	sga	$	1.25	$	54,675
	Sanitary Sewer Systems						
	Sanitary Sewer Systems (Incl. Tie-in to Existing, Sewer Line, Cleanouts, Manhole, Septic System & Drain Field and Associated System & Existing Street Surface Repair/Traffic Control) - Allowance	43,740	sga	$	0.75	$	32,805
	Storm Drainage						
	Storm Drainage (Incl. Tie-in to Existing, Drain Line, Cleanouts, Catch Basin, Bioretention & Existing Street Surface Repair/Traffic Control) - Allowance	43,740	sga	$	1.50	$	65,610
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**43,740**	**SGA**	**$**	**3.50**	**$**	**153,090**
G40	**SITE ELECTRICAL UTILITIES**						
	Site Electrical Utilities - High Performance (per MW Engineers)						
	Site Utilities	1	ls	$	350,000	$	350,000
	Site Lighting	1	ls	$	70,000	$	70,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**43,740**	**SGA**	**$**	**9.60**	**$**	**420,000**
G50	**OTHER SITE CONSTRUCTION**						
	Service Tunnels - Allowance						
	Utilidor Tunnel extended to beyond site footprint for future buildir	25	lf	$	4,500	$	112,500
	Utilidor Tunnel - Excavation Allowance	1	ls	$	20,000	$	20,000
	Landscaping Repair - Allowance	1	ls	$	5,000	$	5,000
	SUBTOTAL OTHER SITE CONSTRUCTION	**43,740**	**SGA**	**$**	**3.14**	**$**	**137,500**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**43,740**	**SGA**	**$**	**-**	**$**	**-**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	52,897
Project Start Date:	Q3, 2027	**Site GSF:**	55,060
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	52,897	BGSF	$ 21.81	$ 1,153,504
A20	Basement Construction	52,897	BGSF	$ -	$ -
B10	Superstructure	52,897	BGSF	$ 62.78	$ 3,320,779
B20	Exterior Enclosure	52,897	BGSF	$ 74.16	$ 3,923,050
B30	Roofing	52,897	BGSF	$ 10.74	$ 568,314
C10	Interior Construction	52,897	BGSF	$ 70.30	$ 3,718,501
C20	Stairs	52,897	BGSF	$ 4.06	$ 215,000
C30	Interior Finishes	52,897	BGSF	$ 45.30	$ 2,396,006
D10	Conveying Systems	52,897	BGSF	$ 4.25	$ 225,000
D20	Plumbing	52,897	BGSF	$ 27.15	$ 1,435,890
D30	HVAC	52,897	BGSF	$ 83.35	$ 4,409,062
D40	Fire Protection	52,897	BGSF	$ 5.52	$ 291,763
D50	Electrical	52,897	BGSF	$ 76.95	$ 4,070,256
E10	Equipment	52,897	BGSF	$ 0.66	$ 35,000
E20	Casework & Furnishings	52,897	BGSF	$ 11.84	$ 626,425
F10	Special Construction	52,897	BGSF	$ 11.54	$ 610,650
F20	Selective Demolition	52,897	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 26,999,198**
	Design Contingency			20.00%	$ 5,399,840
	Subtotal				$ 32,399,038
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 1,943,942
	Subtotal				$ 34,342,980
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**52,897**	**BGSF**	**$ 649.25**	**$ 34,342,980**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**						
	Foundation Earthwork						
	Footing Excavation and Backfill (Native Soil)	4,443	cy	$	45.00	$	199,940
	Footing Drains with Gravel	714	lf	$	35.00	$	24,990
	Foundations						
	Spread Footings (includes reinforcing)	253	cy	$	900.00	$	228,000
	Continuous Footings (includes reinforcing)	119	cy	$	800.00	$	95,200
	Brace Frame Footings (includes reinforcing)	150	cy	$	750.00	$	112,500
	Perimeter Stem Wall (includes reinforcing)	33	cy	$	2,660.00	$	87,928
	Reinforce Existing Foundations / Drills & Epoxy - Allowance	150	lf	$	350.00	$	52,500
	Slab-on-Grade						
	Slab on Grade (includes reinforcing, base course and vapor barrier)	17,632	sf	$	11.50	$	202,771
	Slab on Grade (includes reinforcing, base course and vapor barrier) - Transition to Phase 1 Allowance	1	ls	$	25,000.00	$	25,000
	Misc. Concrete						
	Roof Conc. Mechanical House Keeping Pads	500	sf	$	25.00	$	12,500
	Mechanical and Electrical Conc. House Keeping Pads	1,000	sf	$	25.00	$	25,000
	Elevator Pits (includes ladder, hoist beam, sump & waterproofing	1	ea	$	30,000.00	$	30,000
	Set Column Anchor Bolts	44	set	$	340.00	$	14,987
	Grout Baseplates	44	ea	$	50.00	$	2,204
	Perimeter Insulation / Waterproofing						
	2" Rigid Polystyrene	2,856	sf	$	4.00	$	11,424
	Stem Wall Dampproofing	2,856	sf	$	10.00	$	28,560
	SUBTOTAL FOUNDATIONS	**52,897**	**BGSF**	**$**	**21.81**	**$**	**1,153,504**
A20	**BASEMENT CONSTRUCTION**						
	Basement Construction						
	SUBTOTAL BASEMENT CONSTRUCTION	**52,897**	**BGSF**	**$**	**-**	**$**	**-**
B10	**SUPERSTRUCTURE**						
	CIP Structural Concrete						
	Horizontal Structure						
	Topping Slabs						
	4.5" Avg. Slab with Reinforcing	35,264	sf	$	7.50	$	264,483
	Structural Steel						
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)						
	Structural Framing (12 psf Allowance for Floor & Roof)	634,760	lbs	$	3.50	$	2,221,661
	Metal Decking						
	Floor Decking - 3"	35,264	sf	$	9.50	$	335,012
	Roof Decking - 3" 18GA	17,632	sf	$	7.50	$	132,242

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Metals						
	Allowance	52,897	gsf	$	1.00	$	52,897
	Building Canopies - Allowance	1,000	sf	$	50.00	$	50,000
	Fireproofing						
	Structural Steel Fireproofing						
	Sprayed Cementitious Fireproofing (Metal Deck Area)	52,897	sf	$	5.00	$	264,483
	Firestopping - See Interior Partitions						
	SUBTOTAL SUPERSTRUCTURE	**52,897**	**BGSF**	**$**	**62.78**	**$**	**3,320,779**
B20	**EXTERIOR ENCLOSURE**						
	Exterior Wall Construction						
	Exterior Wall Assembly - Allowance	25,493	sf	$	37.00	$	943,234
	Loadbearing CMU or Concrete Walls - In B10 Superstructure Above						
	Exterior Wall Finish						
	Masonry Veneer						
	Brick Veneer @ New Façade	16,051	sf	$	45.00	$	722,304
	Brick Veneer Repair & Repointing Allowance	5,606	sf	$	20.00	$	112,128
	Exterior Windows						
	Storefront / Windows, Standard Clear Anodized with Flashing	7,016	sf	$	110.00	$	771,778
	Curtain Wall, Standard Clear Anodized with Flashing	8,065	sf	$	150.00	$	1,209,780
	Exterior Doors						
	Storefront Entry Doors, Hardware, per leaf	4	ea	$	7,500.00	$	30,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	6	ea	$	4,200.00	$	25,200
	Push Button ADA Auto Operators (per entrance)	2	ea	$	10,000.00	$	20,000
	Premium for Electronic Hardware at Card Readers (Reader Devices included with Electrical)	6	ea	$	1,000.00	$	6,000
	Exterior Paint & Sealants						
	Masonry Water Repellants / Anti-Graffiti Coating	16,051	sf	$	2.50	$	40,128
	Paint to HM Doors and Frames	6	ea	$	175.00	$	1,050
	Exterior - Control Joints, Caulking and Joint Sealants	52,897	gsf	$	0.50	$	26,448
	Building Graphics						
	Allowance for Building Signage	1	ls	$	15,000.00	$	15,000
	SUBTOTAL EXTERIOR ENCLOSURE	**52,897**	**BGSF**	**$**	**74.16**	**$**	**3,923,050**
B30	**ROOFING**						
	Roof Coverings						
	Membrane Roofing System w/ Rigid Insulation	17,632	sf	$	24.00	$	423,174
	Membrane Roofing Lapping up Backside of Parapets	1,635	sf	$	18.00	$	29,430
	Flashing and Sheet Metal						
	Parapet Caps and Copings	545	lf	$	35.00	$	19,075
	Fascia	545	lf	$	30.00	$	16,350

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Miscellaneous Roof Flashing and Rough Carpentry	10%	on	$	452,603.50	$	45,260
	Downspouts	7	ea	$	450.00	$	3,150
	Conductor Heads	7	ea	$	375.00	$	2,625
	Roof Accessories						
	Walk Pads	1,500	sf	$	8.00	$	12,000
	Fall Protection Anchors	15	ea	$	750.00	$	11,250
	Access Ladders	1	ea	$	3,500.00	$	3,500
	Roof Hatches	1	ea	$	2,500.00	$	2,500
	SUBTOTAL ROOFING	**52,897**	**BGSF**	**$**	**10.74**	**$**	**568,314**
C10	**INTERIOR CONSTRUCTION**						
	Partitions						
	GWB Wall Partition - Allowance	59,244	sf	$	18.00	$	1,066,397
	Glass Wall Partitions - Allowance	25,390	sf	$	50.00	$	1,269,521
	Fire Caulking at Penetrations	52,897	gsf	$	0.35	$	18,514
	Interior - Caulking and Joint Sealants	52,897	gsf	$	0.30	$	15,869
	Miscellaneous Carpentry - Allowance	52,897	gsf	$	1.00	$	52,897
	Concrete & CMU Walls - See B10 Superstructure Above						
	Interior Glazing						
	Interior Storefront with 1/4" tempered glazing	5,924	sf	$	65.00	$	385,088
	HM Sidelights/Relites with 1/4" tempered glazing	1,216	sf	$	35.00	$	42,560
	Interior Doors, Frames, Hardware						
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	151	ea	$	4,200.00	$	634,200
	Premium for Relite Frame - per leaf	76	ea	$	400.00	$	30,400
	Aluminum Storefront Doors, HW, Complete - per leaf	12	ea	$	7,500.00	$	90,000
	Access Doors and Panels	52,897	gsf	$	0.15	$	7,935
	Interior Railings						
	Sloping Stair Rails and Grabs - Included with Stairs Below						
	Fittings / Specialties						
	Visual Display Specialties						
	Visual Display Specialties / Mark Boards - Allowance	1	ls	$	20,000.00	$	20,000
	Signage (Code and Wayfinding)	52,897	gsf	$	0.75	$	39,673
	Toilet Compartments (Metal) (Stainless Steel) (Solid Polymer) (P-Lam) (Phenolic)						
	Small Multi-user Restrooms (Incl. Toilet Partitions)	3	ea	$	4,500.00	$	13,500
	Large Multi-user Restrooms (Incl. Toilet Partitions)	1	ea	$	5,500.00	$	5,500
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	52,897	gsf	$	0.50	$	26,448
	SUBTOTAL INTERIOR CONSTRUCTION	**52,897**	**BGSF**	**$**	**70.30**	**$**	**3,718,501**

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
C20	**STAIRS**				
	Stair Construction (includes concrete, finishes and guard/hand rails)				
	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	4	ea	$ 35,000.00	$ 140,000
	Feature Stair	1	ea	$ 75,000.00	$ 75,000
	SUBTOTAL STAIRS	**52,897**	**BGSF**	**$ 4.06**	**$ 215,000**
C30	**INTERIOR FINISHES**				
	Wall Finishes				
	Paint to Walls, Doors, Frames and Miscellaneous	52,897	gsf	$ 5.00	$ 264,483
	Restroom Wall Tile	1,500	sf	$ 30.00	$ 45,000
	Lobby Entrance Wall Finishes (TBD) - Allowance	1	ls	$ 30,000.00	$ 30,000
	Wood Wall Panels - Allowance	52,897	gsf	$ 6.00	$ 317,380
	Vinyl Wallcovering (TBD) - Allowance	52,897	gsf	$ 3.00	$ 158,690
	Fiberglass Reinforced Panel - Allowance	1	ls	$ 20,000.00	$ 20,000
	Miscellaneous Finish Carpentry Allowance	52,897	gsf	$ 1.50	$ 79,345
	Bases				
	Floor Base (TBD) - Allowance	52,897	gsf	$ 3.00	$ 158,690
	Floor Finishes				
	Floor Finishes (Carpet, Sealed Concrete, VCT, LVT & Ceramic Tile) - Allowance	52,897	gsf	$ 10.50	$ 555,415
	Floor Prep & Protection	52,897	gsf	$ 1.00	$ 52,897
	Ceiling Finishes				
	Ceiling Finishes (ACT, GWB - Painted & Exposed Ceiling - Painted) - Allowance	52,897	gsf	$ 5.00	$ 264,483
	Acoustic Wood Panels Ceiling - Allowance	52,897	gsf	$ 8.50	$ 449,622
	SUBTOTAL INTERIOR FINISHES	**52,897**	**BGSF**	**$ 45.30**	**$ 2,396,006**
D10	**CONVEYING SYSTEMS**				
	Elevators & Lifts				
	Hydraulic Elevator (3) Stops	3	ea	$ 75,000.00	$ 225,000
	SUBTOTAL CONVEYING SYSTEMS	**52,897**	**BGSF**	**$ 4.25**	**$ 225,000**
D20	**PLUMBING**				
	Plumbing				
	Plumbing - High Performance (per MW Engineers)	52,897	gsf	$ 27.15	$ 1,435,890
	SUBTOTAL PLUMBING	**52,897**	**BGSF**	**$ 27.15**	**$ 1,435,890**
D30	**HVAC**				
	HVAC				
	HVAC - High Performance (per MW Engineers)	52,897	gsf	$ 83.35	$ 4,409,062
	SUBTOTAL HVAC	**52,897**	**BGSF**	**$ 83.35**	**$ 4,409,062**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D40	**FIRE PROTECTION**						
	Fire Protection						
	Fire Protection - High Performance (per MW Engineers)	52,897	gsf	$	5.52	$	291,763
	SUBTOTAL FIRE PROTECTION	**52,897**	**BGSF**	**$**	**5.52**	**$**	**291,763**
D50	**ELECTRICAL**						
	Electrical - High Performance (per MW Engineers)						
	Power	52,897	gsf	$	36.24	$	1,916,987
	Lighting & Controls	52,897	gsf	$	16.09	$	851,113
	Telecom, AV	52,897	gsf	$	18.95	$	1,002,398
	FA, Sec	52,897	gsf	$	4.19	$	221,638
	Solar PV Array	1	ls	$	78,120	$	78,120
	SUBTOTAL ELECTRICAL	**52,897**	**BGSF**	**$**	**76.95**	**$**	**4,070,256**
E10	**EQUIPMENT**						
	Residential Equipment						
	Residential Equipment - Allowance	1	ls	$	15,000.00	$	15,000
	Projection Screen Equipment						
	Projection Screen Equipment Ceiling Recessed - Allowance	1	ls	$	20,000.00	$	20,000
	SUBTOTAL EQUIPMENT	**52,897**	**BGSF**	**$**	**0.66**	**$**	**35,000**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	52,897	gsf	$	8.50	$	449,622
	Window Treatment						
	Blackout Shades - Sidelites/Relites	1,216	sf	$	30.00	$	36,480
	Roller Shades	7,016	sf	$	20.00	$	140,323
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**52,897**	**BGSF**	**$**	**11.84**	**$**	**626,425**
F10	**SPECIAL CONSTRUCTION**						
	Scaffolding - Target Value						
	Erect Scaffolding, Certify and Dismantle Scaffolding Incl. First Month Rent	1	ls	$	467,830.00	$	467,830
	Monthly Rental	5	mo	$	10,000.00	$	50,000
	Shrink Wrap Scaffolding - (ACM Stucco Removal)	1	ls	$	85,060.00	$	85,060
	Maintaining Scaffolding and Screening	80	hr	$	97.00	$	7,760
	SUBTOTAL SPECIAL CONSTRUCTION	**52,897**	**BGSF**	**$**	**11.54**	**$**	**610,650**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
F20	**SELECTIVE BUILDING DEMOLITION**				
	Selective Building Demolition				
	Hazardous Components Abatement				
	None				
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**52,897**	**BGSF**	**$ -**	**$ -**
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**52,897**	**BGSF**	**$ -**	**$ -**

Project Owner:	**Eastern Washington University**	**Architect:**	Integrus Architec
Project Name:	**EWU Martin & Williamson Hall**	**Project Duration:**	40 MO
Project Location:	Cheney, WA	**Building GSF:**	52,897
Project Start Date:	Q3, 2027	**Site GSF:**	55,060
Estimate Date:	June 27, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	55,060	SGA	$ 5.69	$ 313,043
G20	Site Improvements	55,060	SGA	$ 5.75	$ 316,595
G30	Site Civil / Mech Utilities	55,060	SGA	$ 3.50	$ 192,710
G40	Site Electrical Utilities	55,060	SGA	$ 2.54	$ 140,000
G50	Other Site Construction	55,060	SGA	$ -	$ -
SITEWORK SUBTOTAL					**$ 962,348**
	Design Contingency			20.00%	$ 192,470
	Subtotal				$ 1,154,818
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			6.00%	$ 69,289
	Subtotal				$ 1,224,107
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**55,060**	**SGA**	**$ 22.23**	**$ 1,224,107**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G10	**SITE PREPARATION**						
	General Sitework Requirements						
	Mobilization	1	ls	$	30,000.00	$	30,000
	Site Layout & Potholing	1	ls	$	5,000.00	$	5,000
	Traffic Control (for entire project)	6	weeks	$	6,500.00	$	39,000
	Site Improvements Demolition & Relocation						
	Selective Site Demo & Protection of Site Items - Allowance	55,060	sf	$	0.35	$	19,271
	Demo Utilities						
	Piping (water), Piping (sewer, storm, etc.), Structures (manhole, catch basin, hydrant), Cap Utiilities (abandon pipe in place)	55,060	sf	$	0.75	$	41,295
	Misc. Site Clearing	55,060	sf	$	0.25	$	13,765
	Site Earthwork						
	Temporary Construction Fencing	600	lf	$	12.00	$	7,200
	TESC Erosion Control - Filter Fabric Fence, Catch Basin Inlet Protection, & Stabilized Construction Entry	1	ls	$	12,500	$	12,500
	Tree Protection Fencing	1	ls	$	3,500	$	3,500
	Contractor Access and Laydown Area	1,500	sf	$	2.00	$	3,000
	Clear and Grub	55,060	sf	$	0.20	$	11,012
	Excavation						
	Native Cut / Fill - Allowance	1,500	cy	$	35.00	$	52,500
	Export Unsuitable - Allowance	500	cy	$	75.00	$	37,500
	Imported Fill - Allowance	500	cy	$	55.00	$	27,500
	Dewatering - Allowance	1	ls	$	10,000.00	$	10,000
	Foundation Earthwork						
	Footing Excavation and Backfill	In Building Section A10					
	Footing Drains with Gravel	In Building Section A10					
	Hazardous Waste Remediation						
	None Included						
	SUBTOTAL SITE PREPARATON	**55,060**	**SGA**	**$**	**5.69**	**$**	**313,043**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving & Concrete Site Work (Base Courses Included)						
	Concrete Curbs, Concrete Paving and Walkways - Allowance	55,060	sf	$	2.00	$	110,120
	Site Development						
	Concrete Retaining Walls, Seat Walls, Fencing, Bike Rack and Flag Pole - Allowance	55,060	sf	$	0.75	$	41,295

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Landscaping/Irrigation						
	Irrigation - General Landscaping - Allowance	55,060	sf	$	0.50	$	27,530
	Planter Shrubs and Ground Cover - Allowance	55,060	sf	$	2.50	$	137,650
	SUBTOTAL SITE IMPROVEMENTS	**55,060**	**SGA**	**$**	**5.75**	**$**	**316,595**
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Water Service Utilities (Incl. Tie-in to Existing, Water/Fire Line, Water Meter, Irrigation Meter, Valve, Domestic Water, Fire Department Connection & Existing Street Surface Repair/Traffic Control) - Allowance	55,060	sga	$	1.25	$	68,825
	Sanitary Sewer Systems						
	Sanitary Sewer Systems (Incl. Tie-in to Existing, Sewer Line, Cleanouts, Manhole, Septic System & Drain Field and Associated System & Existing Street Surface Repair/Traffic Control) - Allowance	55,060	sga	$	0.75	$	41,295
	Storm Drainage						
	Storm Drainage (Incl. Tie-in to Existing, Drain Line, Cleanouts, Catch Basin, Bioretention & Existing Street Surface Repair/Traffic Control) - Allowance	55,060	sga	$	1.50	$	82,590
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**55,060**	**SGA**	**$**	**3.50**	**$**	**192,710**
G40	**SITE ELECTRICAL UTILITIES**						
	Site Electrical Utilities - High Performance (per MW Engineers)						
	Site Utilities	1	ls	$	100,000	$	100,000
	Site Lighting	1	ls	$	40,000	$	40,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**55,060**	**SGA**	**$**	**2.54**	**$**	**140,000**
G50	**OTHER SITE CONSTRUCTION**						
	Other Site Construction						
	SUBTOTAL OTHER SITE CONSTRUCTION	**55,060**	**SGA**	**$**	**-**	**$**	**-**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**55,060**	**SGA**	**$**	**-**	**$**	**-**

SECTION 6

APPENDICES

6.5 C-100 (PHASE 1 & PHASE 2)

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Martin Williamson - Phase 1 (Alternate C)
OFM Project Number	40000113

Contact Information	
Name	Kris Jeske - EWU Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske1@ewu.edu

Statistics			
Gross Square Feet	71,478	MACC per Gross Square Foot	$749
Usable Square Feet	50,034	Escalated MACC per Gross Square Foot	$850
Alt Gross Unit of Measure			
Space Efficiency	70.0%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	9.51%
Remodel	Yes	Projected Life of Asset (Years)	50
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney
Contingency Rate	10%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	September-23	Predesign End	May-24
Design Start	October-25	Design End	June-27
Construction Start	August-27	Construction End	April-29
Construction Duration	20 Months		

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Project Cost Summary

Total Project	$78,579,317	Total Project Escalated	$88,770,743
		Rounded Escalated Total	$88,771,000

Amount funded in Prior Biennia	**$281,000**
Amount in current Biennium	**$8,071,000**
Next Biennium	**$79,985,000**
Out Years	**$434,000**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$281,446		
Design Phase Services	$3,864,336		
Extra Services	$1,362,000		
Other Services	$1,816,151		
Design Services Contingency	$732,393		
Consultant Services Subtotal	**$8,056,326**	**Consultant Services Subtotal Escalated**	**$8,788,384**

Construction			
Maximum Allowable Construction Cost (MACC)	$53,536,820	Maximum Allowable Construction Cost (MACC) Escalated	$60,739,009
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$5,353,682		$6,088,208
Non-Taxable Items	$267,684		$304,411
Sales Tax	$5,265,145	Sales Tax Escalated	$5,974,791
Construction Subtotal	**$64,423,332**	**Construction Subtotal Escalated**	**$73,106,419**

Equipment			
Equipment	$3,037,815		
Sales Tax	$270,366		
Non-Taxable Items	$0		
Equipment Subtotal	**$3,308,181**	**Equipment Subtotal Escalated**	**$3,762,064**

Artwork			
Artwork Subtotal	**$441,645**	**Artwork Subtotal Escalated**	**$441,645**

Agency Project Administration			
Agency Project Administration Subtotal	$2,349,834		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$2,349,834**	**Project Administration Subtotal Escalated**	**$2,672,231**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$78,579,317**	Total Project Escalated	**$88,770,743**
		Rounded Escalated Total	**$88,771,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$8,788,384	$281,446	$6,442,235	$2,065,327	**-$624**
Construction					
Construction Subtotal	$73,106,419			$73,112,861	**-$6,442**
Equipment					
Equipment Subtotal	$3,762,064			$3,762,394	**-$330**
Artwork					
Artwork Subtotal	$441,645				**$441,645**
Agency Project Administration					
Project Administration Subtotal	$2,672,231		$1,628,320	$1,044,146	**-$235**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$88,770,743**	**$281,446**	**$8,070,555**	**$79,984,728**	**$434,014**
	$88,771,000	**$281,000**	**$8,071,000**	**$79,985,000**	**$434,000**
	Percentage requested as a new appropriation		**9%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Full Building Design Services (Phase 1 and Phase 2 Consultant Services)
(Note: Phase 2 design services is included in Phase 2 -C100)

What has been completed or is underway with a previous appropriation?
Predesign Services were retained in 2023-2025 Biennium

What is planned with a future appropriation?
2027-2029 Phase 1 Construction/Closeout Services
2029-2031 Phase 2 Construction - (See Phase 2 - C100)

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$0				
Appraisal and Closing	$0				
Right of Way	$0				
Demolition	$0				
Pre-Site Development	$0				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$281,446			
Other				
Insert Row Here				
Sub TOTAL	**$281,446**	**1.0421**	**$293,295**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$3,864,336			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$3,864,336**	**1.0709**	**$4,138,318**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$150,000			
Geotechnical Investigation	$50,000			
Commissioning	$150,000			
Site Survey	$30,000			
Testing	$150,000			
LEED Services	$90,000			
Voice/Data Consultant	$75,000			
Value Engineering	$90,000			
Constructability Review	$80,000			
Environmental Mitigation (EIS)	$35,000			
Landscape Consultant	$50,000			
NREC (Third Party Certification)	$12,000			3rd Party Req by local AHJ
Experiential Graphics	$150,000			
Acoustical Engineering	$25,000			
ELCCA	$35,000			
LCCA	$40,000			
Historical Consultant	$50,000			Assumed Significance
Haz Mat Assesment	$60,000			Under Owner
Record/Phase 1 Update	$40,000			
Sub TOTAL	**$1,362,000**	**1.0709**	**$1,458,566**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,736,151			31% of A/E Basic Services
HVAC Balancing	$80,000			
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$1,816,151**	**1.1372**	**$2,065,327**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$732,393			
Other				
Insert Row Here				
Sub TOTAL	**$732,393**	**1.1372**	**$832,878**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$8,056,326**		**$8,788,384**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$295,497			
G20 - Site Improvements	$295,245			
G30 - Site Mechanical Utilities	$153,090			
G40 - Site Electrical Utilities	$420,000			
G60 - Other Site Construction	$137,500			
Design Contingency	$260,266			
Contractor Mark-Up	$93,696			
Sub TOTAL	**$1,655,294**	**1.1066**	**$1,831,749**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Full Building Demolition	$2,280,000			
Shoring Existing Historic Façade	$740,000			
Sub TOTAL	**$3,020,000**	**1.1066**	**$3,341,932**	
3) Facility Construction				
A10 - Foundations	$1,508,137			
A20 - Basement Construction	$0			
B10 - Superstructure	$4,494,742			
B20 - Exterior Closure	$4,616,977			
B30 - Roofing	$767,624			
C10 - Interior Construction	$4,921,975			
C20 - Stairs	$140,000			
C30 - Interior Finishes	$3,181,807			
D10 - Conveying	$225,000			
D20 - Plumbing Systems	$2,246,631			
D30 - HVAC Systems	$7,212,100			
D40 - Fire Protection Systems	$456,500			
D50 - Electrical Systems	$5,752,498			
F10 - Special Construction	$828,750			
F20 - Selective Demolition	$0			
General Conditions	$1,500,000			
CFCI E10 Equipment	$45,000			
CFCI E20 Casework & Furnishings	$836,163			
Design Contingency	$7,446,781			
Contractor Mark-Up	$2,680,841			
Sub TOTAL	**$48,861,526**	**1.1372**	**$55,565,328**	
4) Maximum Allowable Construction Cost				

MACC Sub TOTAL	**$53,536,820**		**$60,739,009**	
	$749		*$850 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$5,353,682			
Other				
Insert Row Here				
Sub TOTAL	**$5,353,682**	**1.1372**	**$6,088,208**	
8) Non-Taxable Items				
Building Permit 0.5%	$267,684			
Insert Row Here				
Sub TOTAL	**$267,684**	**1.1372**	**$304,411**	
9) Sales Tax				
Sub TOTAL	**$5,265,145**		**$5,974,791**	
CONSTRUCTION CONTRACTS TOTAL	**$64,423,332**		**$73,106,419**	

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Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment	$696,910				
E20 - Furnishings	$1,624,695				
F10 - Special Construction					
Telecom/ Networking	$436,016				
Custodial Equip/ Supplies	$280,194				
Insert Row Here					
Sub TOTAL	**$3,037,815**		**1.1372**	**$3,454,604**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.1372**	**$0**	
3) Sales Tax					
Sub TOTAL	**$270,366**			**$307,460**	
EQUIPMENT TOTAL	**$3,308,181**			**$3,762,064**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$441,645				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$441,645**		**NA**	**$441,645**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$2,349,834				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$2,349,834**		**1.1372**	**$2,672,231**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1066**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Building is largely replacementl; however, goal is to maintain historic façade in front of new construciton. Little building
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Martin Williamson - Phase 2 (Alternate C)
OFM Project Number	40000113

Contact Information	
Name	Kris Jeske - EWU Director Of Construction & Planning
Phone Number	509-359-6565
Email	Kjeske1@ewu.edu

Statistics			
Gross Square Feet	52,897	MACC per Gross Square Foot	$701
Usable Square Feet	37,028	Escalated MACC per Gross Square Foot	$850
Alt Gross Unit of Measure			
Space Efficiency	70.0%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	9.94%
Remodel	Yes	Projected Life of Asset (Years)	50
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney
Contingency Rate	10%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	September-23	Predesign End	May-24
Design Start	October-25	Design End	June-27
Construction Start	August-29	Construction End	April-31
Construction Duration	20 Months		

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Project Cost Summary

Total Project	$54,465,607	Total Project Escalated	$65,503,119
		Rounded Escalated Total	$65,503,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$4,495,000**
Next Biennium	**$584,000**
Out Years	**$60,424,000**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$2,796,512		
Extra Services	$837,000		
Other Services	$1,336,404		
Design Services Contingency	$496,992		
Consultant Services Subtotal	**$5,466,907**	**Consultant Services Subtotal Escalated**	**$6,117,422**

Construction			
Maximum Allowable Construction Cost (MACC)	$37,067,087	Maximum Allowable Construction Cost (MACC) Escalated	$44,970,536
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$3,706,709		$4,501,057
Non-Taxable Items	$0		$0
Sales Tax	$3,628,930	Sales Tax Escalated	$4,403,047
Construction Subtotal	**$44,402,726**	**Construction Subtotal Escalated**	**$53,874,640**

Equipment			
Equipment	$2,248,122		
Sales Tax	$200,083		
Non-Taxable Items	$0		
Equipment Subtotal	**$2,448,205**	**Equipment Subtotal Escalated**	**$2,972,856**

Artwork			
Artwork Subtotal	**$325,886**	**Artwork Subtotal Escalated**	**$325,886**

Agency Project Administration			
Agency Project Administration Subtotal	$1,821,884		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$1,821,884**	**Project Administration Subtotal Escalated**	**$2,212,314**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$54,465,607**	Total Project Escalated	**$65,503,119**
		Rounded Escalated Total	**$65,503,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$6,117,422		$4,495,038		**$1,622,384**
Construction					
Construction Subtotal	$53,874,640				**$53,874,640**
Equipment					
Equipment Subtotal	$2,972,856				**$2,972,856**
Artwork					
Artwork Subtotal	$325,886				**$325,886**
Agency Project Administration					
Project Administration Subtotal	$2,212,314			$584,176	**$1,628,138**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$65,503,119**	**$0**	**$4,495,038**	**$584,176**	**$60,423,905**
	$65,503,000	**$0**	**$4,495,000**	**$584,000**	**$60,424,000**
	Percentage requested as a new appropriation		**7%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Full Building Design Services (Phase 1 and Phase 2 Consultant Services)
(Note: Phase 1 design services is included in Phase 1 -C100)

What has been completed or is underway with a previous appropriation?
Predesign Services are reflected in Phase 1 Documentation

What is planned with a future appropriation?
2027-2029 Phase 1 Construction/Closeout Services (See Phase 1 - C100)
2029-2031 Phase 2 Construction/Closeout Services

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$0				
Appraisal and Closing	$0				
Right of Way	$0				
Demolition	$0				
Pre-Site Development	$0				
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0421**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$2,796,512			69% of A/E Basic Services
Insert Row Here				
Sub TOTAL	**$2,796,512**	**1.0709**	**$2,994,785**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$150,000			
Geotechnical Investigation				
Commissioning	$150,000			
Site Survey				
Testing	$150,000			
LEED Services	$90,000			
Voice/Data Consultant	$75,000			
Value Engineering	$90,000			
Constructability Review				
Environmental Mitigation (EIS)	$35,000			
Landscape Consultant	$50,000			
NREC (Third Party Certification)	$12,000			
Historial Consultant				
Record Drawings	$35,000			
Sub TOTAL	**$837,000**	**1.0709**	**$896,344**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,256,404			31% of A/E Basic Services
HVAC Balancing	$80,000			
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$1,336,404**	**1.2143**	**$1,622,796**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$496,992			
Other				
Insert Row Here				
Sub TOTAL	**$496,992**	**1.2143**	**$603,497**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$5,466,907**		**$6,117,422**	

Green cells must be filled in by user

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$313,043			
G20 - Site Improvements	$316,595			
G30 - Site Mechanical Utilities	$192,710			
G40 - Site Electrical Utilities	$140,000			
G60 - Other Site Construction	$0			
Design Contingency	$192,470			
Contractor Mark-Up	$69,289			
Sub TOTAL	**$1,224,107**	**1.1816**	**$1,446,405**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1816**	**$0**	
3) Facility Construction				
A10 - Foundations	$1,153,504			
A20 - Basement Construction	$0			
B10 - Superstructure	$3,320,779			
B20 - Exterior Closure	$3,923,050			
B30 - Roofing	$568,314			
C10 - Interior Construction	$3,718,501			
C20 - Stairs	$215,000			
C30 - Interior Finishes	$2,396,006			
D10 - Conveying	$225,000			
D20 - Plumbing Systems	$1,435,890			
D30 - HVAC Systems	$4,409,062			
D40 - Fire Protection Systems	$291,763			
D50 - Electrical Systems	$4,070,256			
F10 - Special Construction	$610,650			
F20 - Selective Demolition	$0			
General Conditions	$1,500,000			
CFCI E10 Equipment	$35,000			
CFCI E20 Casework & Furnishings	$626,425			
Design Contingency	$5,399,840			
Contractor Mark-Up	$1,943,942			
Sub TOTAL	**$35,842,980**	**1.2143**	**$43,524,131**	
4) Maximum Allowable Construction Cost				

MACC Sub TOTAL	**$37,067,087**		**$44,970,536**	
	$701		*$850 per GSF*	
This Section is Intentionally Left Blank				
7) Owner Construction Contingency				
Allowance for Change Orders	$3,706,709			
Other				
Insert Row Here				
Sub TOTAL	**$3,706,709**	**1.2143**	**$4,501,057**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.2143**	**$0**	
9) Sales Tax				
Sub TOTAL	**$3,628,930**		**$4,403,047**	
CONSTRUCTION CONTRACTS TOTAL	**$44,402,726**		**$53,874,640**	

Green cells must be filled in by user

Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment	$515,746				
E20 - Furnishings	$1,202,348				
F10 - Special Construction					
Telecom/ Networking	$322,672				
Custodial Equip/ Supplies	$207,356				
Insert Row Here					
Sub TOTAL	**$2,248,122**		**1.2143**	**$2,729,895**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.2143**	**$0**	
3) Sales Tax					
Sub TOTAL	**$200,083**			**$242,961**	
EQUIPMENT TOTAL	**$2,448,205**			**$2,972,856**	

Green cells must be filled in by user

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$325,886				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$325,886**		**NA**	**$325,886**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$1,821,884				
Additional Services					
Other					
Insert Row Here					
Subtotal of Other	*$0*				
PROJECT MANAGEMENT TOTAL	**$1,821,884**		**1.2143**	**$2,212,314**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1816**	**$0**	

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C-100(2024)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

SECTION 6

APPENDICES

6.6 DAHP & TRIBAL NOTIFICATION LETTERS

June 6, 2024

Ms. Maddie Levesque
Architectural Historian
Washington State Department of Archaeology & Historic Preservation

Mr. Rob Whitlam, Ph.D.
State Archaeologist
Washington State Department of Archaeology & Historic Preservation

RE: Proposed Project at Eastern Washington University
Martin / Williamson Hall
EWU Project No. CP1133

Dear Ms. Leveque and Mr. Whitlam:

This letter is to notify you of a proposed project at Martin-Williamson Hall on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the college intends to submit a predesign for state review/approval of the project on June 30, 2024.

This project is proposed as a replacement of the existing Martin and Williamson Halls on the original building site. The building is proposed to be a three-story structure totaling ~124,400 gross square feet and will house the Psychology and Education Departments, Counseling/Wellness Services, and student support services/accommodations. A phased approach to construction will be utilized (over multiple biennia) as portions of the building will be occupied while under construction.

Throughout the years, both Martin and Williamson Halls have been renovated numerous times destroying the original historic character of the interior. However, the exterior façade retains a high level of integrity. This project proposes demolition of the existing floor plates which do not align with the needs of the Psychology and Education Departments while preserving two of Martin Hall's 1935 historic facades – the northeast and southeast elevations. This approach aligns most closely with EWU's institutional mission and overarching goals, the diverse needs for the academic and student service programs housed in the facility, as well as the state mandated building energy performance criteria.

Proposed construction will be located entirely on previously disturbed ground. See also attached photos and proposed site plan.

Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving of an already existing drive for ADA parking and service access, and the addition of two ADA ramps will be installed at the main entry. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Kris Jeske, AIA | Director of Construction & Planning

EWU Construction & Planning
1115 Cedar Street
101 Rozell Plant, Cheney, WA 99004

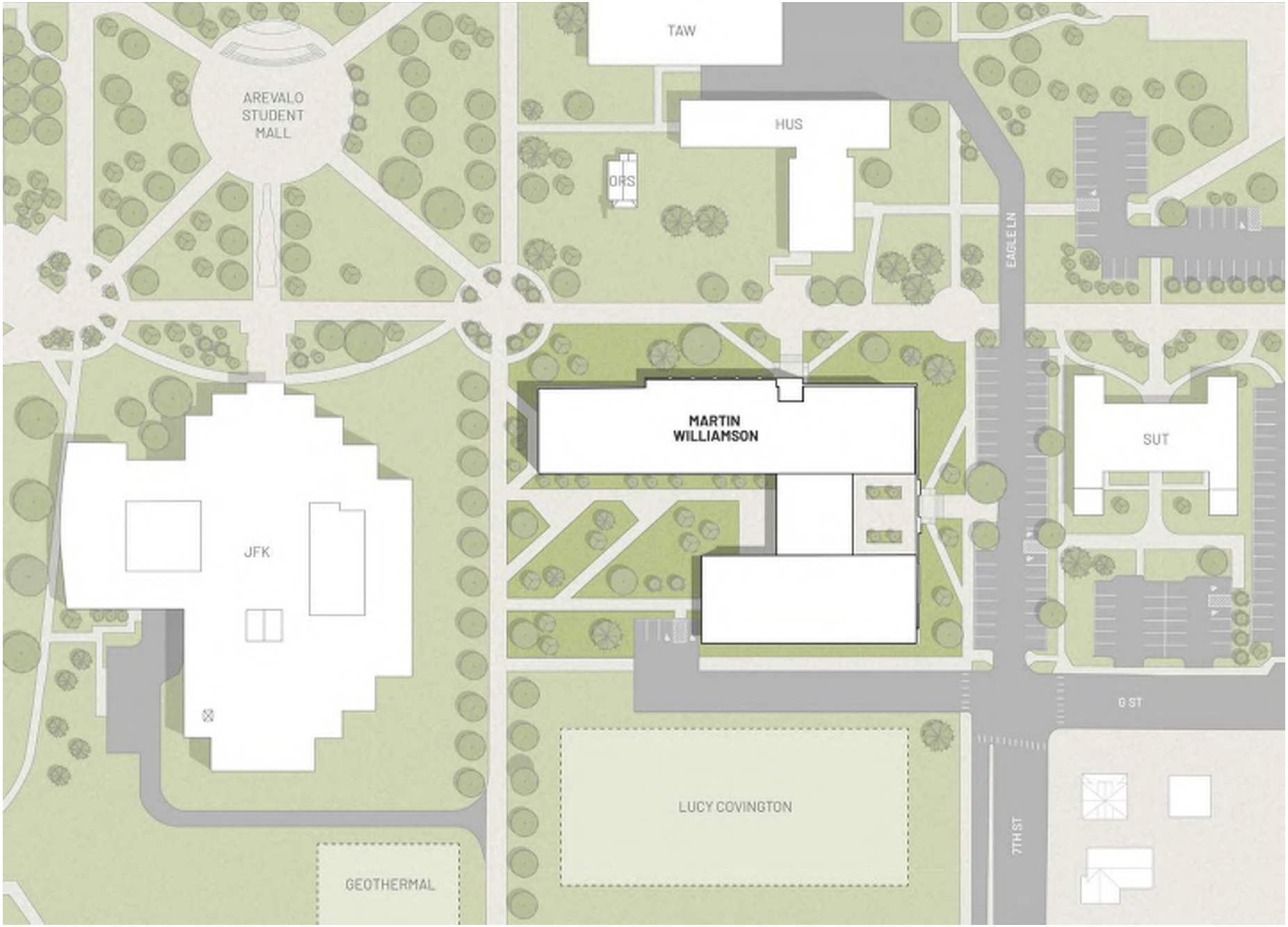
[p] 509.359.6565
[c] 509.359.5705
kjeske1@ewu.edu ▪ https://inside.ewu.edu/facilities/construction-planning/

Martin Hall
South Facade

Williamson Hall
1966 Addition

Williamson Hall
Main Entry

Martin Hall
Main Entry



INTEGRUS

EASTERN
WASHINGTON UNIVERSITY

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 25, 2024

Kris Jeske, AIA
Director of Construction & Planning
EWU Construction & Planning

In future correspondence please refer to:
Project Tracking Code: 2024-06-04495
Property: Eastern Washington University (EWU) - Martin/Williamson Hall Predesign
Re:

Dear Kris:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Officer (SHPO) under provisions of Governor's Executive Order 21-02 and the Office of Financial Management's requirement for DAHP predesign review on capital funded projects. Our review is based upon documentation contained in your communication.

It is our opinion that Property ID: 157306, Martin/Williamson Hall is eligible for listing in the National Register of Historic Places for its association with Eastern Washington University history and representing a significant and distinct architectural style. So, the project will likely result in an adverse impact if heavily altered in the implementation of the suggested predesign scope. We recommend keeping DAHP involved in the predesign phase as much as possible to minimize this impact as much as possible.

Also, we appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult for this project.Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

June 12, 2024

Mr. Randy Abrahamson
Tribal Historic Preservation Officer
Spokane Tribe of Indians

RE: *Proposed Project at Eastern Washington University*
Martin Williamson Hall
Integrus Project No. 22282

Mr. Abrahamson:

This letter is to notify you of a proposed project at Martin-Williamson Hall on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the college intends to submit a predesign for state review/approval of the project on June 30, 2024.

This project is proposed as a replacement of the existing Martin and Williamson Halls on the original building site. The building is proposed to be a three-story structure totaling ~124,400 gross square feet and will house the Psychology and Education Departments, Counseling/Wellness Services, and student support services/accommodations. A phased approach to construction will be utilized (over multiple biennia) as portions of the building will be occupied while under construction.

Throughout the years, both Martin and Williamson Halls have been renovated numerous times destroying the original historic character of the interior. However, the exterior façade retains a high level of integrity. This project proposes demolition of the existing floor plates which do not align with the needs of the Psychology and Education Departments while preserving two of Martin Hall's historic facades – the northeast and southeast elevations. This approach aligns most closely with EWU's institutional mission and overarching goals, the diverse needs for the academic and student service programs housed in the facility, as well as the state mandated building energy performance criteria.

The proposed construction will be located entirely on previously disturbed ground. Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving of an already existing drive for ADA parking and service access, and the addition of two ADA ramps will be installed at the main entry.

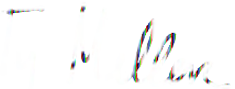
A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

INTEGRUS ARCHITECTURE, P.S.



Ty Miller

Project Manager

Attachments:

Proposed Predesign Site plan

707 SW WASHINGTON ST
SUITE 1200
PORTLAND, OR 97205
503.221.0150 | OFFICE
503.295.0840 | FAX

117 S MAIN ST
SUITE 100
SEATTLE, WA 98104
206.628.3137 | OFFICE
206.628.3138 | FAX

10 S CEDAR ST
SPOKANE, WA 99201
PO BOX 1482 (99210)
509.838.8681 | OFFICE
509.838.2194 | FAX

Spokane Tribe of Indians
Tribal Historic Preservation Officer

P. Box 100 Wellpinit WA 99040,

June 18, 2024

To: Ty Miller, Leed AP BD&C project manager

RE: Proposed project at Eastern Wash University Martin Williamson Hall

Mr. Miller,

Thank you for contacting the Tribe's Historic Preservation Office. We appreciate the opportunity to provide a cultural consult for your project, the intent of this process is to preserve and protect all cultural resources whenever protection is feasible.

After archive research of the project mentioned above, this project is all renovation work and other components therefore: I have no further concern on this project.

RE: This project will require an **inadvertent discovery plan of action** implemented into the scope of work.

This letter is your notification that your project has been cleared, and your project may move forward. As always, if any artifacts or human remains are found upon excavation, this office should be immediately notified and the work in the immediate area **cease**.

Should additional information become available, or scope of work change our assessment may be revised. Again, thank you for this opportunity to comment and consider this a positive action that will assist in protecting our shared heritage.

If questions arise, please contact me at (509) 258 – 4222.

Sincerely,

Randy Abrahamson
Tribal Historic Preservation Officer - THPO

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

June 12, 2024

Jill Maria Wagner, PHD
Tribal Historic Preservation Officer
Coeur d'Alene Tribe

RE: Proposed Project at Eastern Washington University
Martin Williamson Hall
Integrus Project No. 22282

Dear Dr Wagner:

This letter is to notify you of a proposed project at Martin-Williamson Hall on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the college intends to submit a predesign for state review/approval of the project on June 30, 2024.

This project is proposed as a replacement of the existing Martin and Williamson Halls on the original building site. The building is proposed to be a three-story structure totaling ~124,400 gross square feet and will house the Psychology and Education Departments, Counseling/Wellness Services, and student support services/accommodations. A phased approach to construction will be utilized (over multiple biennia) as portions of the building will be occupied while under construction.

Throughout the years, both Martin and Williamson Halls have been renovated numerous times destroying the original historic character of the interior. However, the exterior façade retains a high level of integrity. This project proposes demolition of the existing floor plates which do not align with the needs of the Psychology and Education Departments while preserving two of Martin Hall's historic facades – the northeast and southeast elevations. This approach aligns most closely with EWU's institutional mission and overarching goals, the diverse needs for the academic and student service programs housed in the facility, as well as the state mandated building energy performance criteria.

The proposed construction will be located entirely on previously disturbed ground. Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving of an already existing drive for ADA parking and service access, and the addition of two ADA ramps will be installed at the main entry.

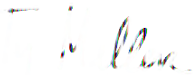
A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

INTEGRUS ARCHITECTURE, P.S.



Ty Miller

Project Manager

Attachments:

Proposed Predesign Site plan

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503.295.0840 | FAX

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10 S CEDAR ST
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PO BOX 1482 (99210)
509.838.8681 | OFFICE
509.838.2194 | FAX

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

June 12, 2024

Mr. Guy Moura
Tribal Historic Preservation Officer
Confederated Tribes of the Colville Reservation

RE: Proposed Project at Eastern Washington University
Martin Williamson Hall
Integrus Project No. 22282

Mr. Moura:

This letter is to notify you of a proposed project at Martin-Williamson Hall on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the college intends to submit a predesign for state review/approval of the project on June 30, 2024.

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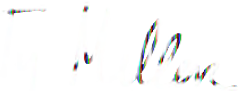

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Project Manager

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SECTION 6

APPENDICES

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: EWU Martin-Williamson Predesign
Date: 15-May-24

Y	?	N			
1			Credit	Integrative Process	1

5	3	8	Location and Transportation		16
		0	Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site	2
1	1	3	Credit	Surrounding Density and Diverse Uses	5
1	1	3	Credit	Access to Quality Transit	5
	1		Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

8	2	0	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
2			Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
	1		Credit	Light Pollution Reduction	1

3	3	4	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1	1		Credit	Outdoor Water Use Reduction	2
1	2	2	Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

19	5	9	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
5		1	Credit	Enhanced Commissioning	6
12	2	4	Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
	1	1	Credit	Demand Response	2
	1	2	Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	1	1	Credit	Green Power and Carbon Offsets	2

7	4	1	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
2	1	1	Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

9	3	4	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
		3	Credit	Daylight	3
		1	Credit	Quality Views	1
	1		Credit	Acoustic Performance	1

3	2	1	Innovation		6
2	2	1	Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

3	1	0	Regional Priority		4
1			Credit	Regional Priority: S Construction Indoor Air Quality Management Plan	1
1			Credit	Regional Priority: S BPDO - Environmental Product Declarations	1
1			Credit	Regional Priority: S BPDO - Sourcing of Raw Materials	1
	1		Credit	Regional Priority: S Demand Response	1

Renewable Energy Production (Alternate Option)

58	23	27	TOTALS	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

370 – Eastern Washington University

2025-23 Biennial Capital Budget Request

Attachments for Reference – Ref 2.2

EWU Geothermal Plant – Node 1 Infrastructure Request

SECTION 6

APPENDICES

6.6 DAHP & TRIBAL NOTIFICATION LETTERS

June 6, 2024

Ms. Maddie Levesque
Architectural Historian
Washington State Department of Archaeology & Historic Preservation

Mr. Rob Whitlam, Ph.D.
State Archaeologist
Washington State Department of Archaeology & Historic Preservation

RE: Proposed Project at Eastern Washington University
Martin / Williamson Hall
EWU Project No. CP1133

Dear Ms. Leveque and Mr. Whitlam:

This letter is to notify you of a proposed project at Martin-Williamson Hall on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the college intends to submit a predesign for state review/approval of the project on June 30, 2024.

This project is proposed as a replacement of the existing Martin and Williamson Halls on the original building site. The building is proposed to be a three-story structure totaling ~124,400 gross square feet and will house the Psychology and Education Departments, Counseling/Wellness Services, and student support services/accommodations. A phased approach to construction will be utilized (over multiple biennia) as portions of the building will be occupied while under construction.

Throughout the years, both Martin and Williamson Halls have been renovated numerous times destroying the original historic character of the interior. However, the exterior façade retains a high level of integrity. This project proposes demolition of the existing floor plates which do not align with the needs of the Psychology and Education Departments while preserving two of Martin Hall's 1935 historic facades – the northeast and southeast elevations. This approach aligns most closely with EWU's institutional mission and overarching goals, the diverse needs for the academic and student service programs housed in the facility, as well as the state mandated building energy performance criteria.

Proposed construction will be located entirely on previously disturbed ground. See also attached photos and proposed site plan.

Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving of an already existing drive for ADA parking and service access, and the addition of two ADA ramps will be installed at the main entry. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Kris Jeske, AIA | Director of Construction & Planning

EWU Construction & Planning
1115 Cedar Street
101 Rozell Plant, Cheney, WA 99004

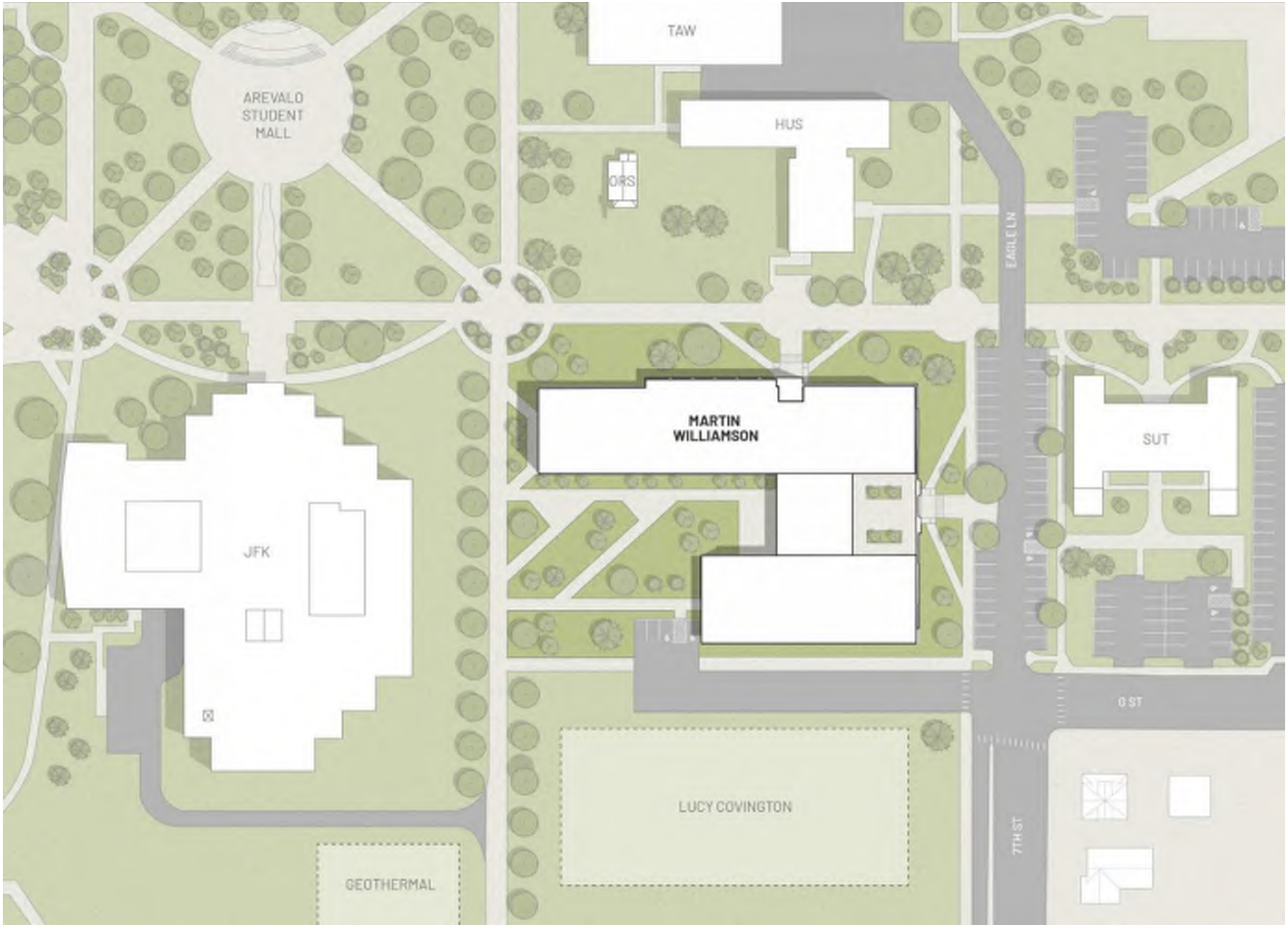
[p] 509.359.6565
[c] 509.359.5705
kjeske1@ewu.edu ▪ https://inside.ewu.edu/facilities/construction-planning/

Martin Hall
South Facade

Williamson Hall
1966 Addition

Williamson Hall
Main Entry

Martin Hall
Main Entry



INTEGRUS

EASTERN
WASHINGTON UNIVERSITY

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 25, 2024

Kris Jeske, AIA
Director of Construction & Planning
EWU Construction & Planning

In future correspondence please refer to:
Project Tracking Code: 2024-06-04495
Property: Eastern Washington University (EWU) - Martin/Williamson Hall Predesign
Re:

Dear Kris:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Officer (SHPO) under provisions of Governor's Executive Order 21-02 and the Office of Financial Management's requirement for DAHP predesign review on capital funded projects. Our review is based upon documentation contained in your communication.

It is our opinion that Property ID: 157306, Martin/Williamson Hall is eligible for listing in the National Register of Historic Places for its association with Eastern Washington University history and representing a significant and distinct architectural style. So, the project will likely result in an adverse impact if heavily altered in the implementation of the suggested predesign scope. We recommend keeping DAHP involved in the predesign phase as much as possible to minimize this impact as much as possible.

Also, we appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult for this project.Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

June 12, 2024

Mr. Randy Abrahamson
Tribal Historic Preservation Officer
Spokane Tribe of Indians

RE: Proposed Project at Eastern Washington University
Martin Williamson Hall
Integrus Project No. 22282

Mr. Abrahamson:

This letter is to notify you of a proposed project at Martin-Williamson Hall on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the college intends to submit a predesign for state review/approval of the project on June 30, 2024.

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INTEGRUS ARCHITECTURE, P.S.

Ty Miller

Project Manager

Attachments:

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509.838.2194 | FAX

Spokane Tribe of Indians
Tribal Historic Preservation Officer

P. Box 100 Wellpinit WA 99040,

June 18, 2024

To: Ty Miller, Leed AP BD&C project manager

RE: Proposed project at Eastern Wash University Martin Williamson Hall

Mr. Miller,

Thank you for contacting the Tribe's Historic Preservation Office. We appreciate the opportunity to provide a cultural consult for your project, the intent of this process is to preserve and protect all cultural resources whenever protection is feasible.

After archive research of the project mentioned above, this project is all renovation work and other components therefore: I have no further concern on this project.

RE: This project will require an **inadvertent discovery plan of action** implemented into the scope of work.

This letter is your notification that your project has been cleared, and your project may move forward. As always, if any artifacts or human remains are found upon excavation, this office should be immediately notified and the work in the immediate area **cease**.

Should additional information become available, or scope of work change our assessment may be revised. Again, thank you for this opportunity to comment and consider this a positive action that will assist in protecting our shared heritage.

If questions arise, please contact me at (509) 258 – 4222.

Sincerely,

Randy Abrahamson
Tribal Historic Preservation Officer - THPO

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

June 12, 2024

Jill Maria Wagner, PHD
Tribal Historic Preservation Officer
Coeur d'Alene Tribe

RE: Proposed Project at Eastern Washington University
Martin Williamson Hall
Integrus Project No. 22282

Dear Dr Wagner:

This letter is to notify you of a proposed project at Martin-Williamson Hall on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the college intends to submit a predesign for state review/approval of the project on June 30, 2024.

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Ty Miller

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Tribal Historic Preservation Officer
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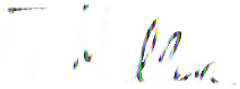

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SECTION 6

APPENDICES

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: EWU Martin-Williamson Predesign
Date: 15-May-24

Y	?	N			
1			Credit	Integrative Process	1

5	3	8	Location and Transportation		16
		0	Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site	2
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1	1	3	Credit	Access to Quality Transit	5
	1		Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

8	2	0	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
2			Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
	1		Credit	Light Pollution Reduction	1

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	1	2	Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	1	1	Credit	Green Power and Carbon Offsets	2

7	4	1	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
2	1	1	Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

9	3	4	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
		3	Credit	Daylight	3
		1	Credit	Quality Views	1
	1		Credit	Acoustic Performance	1

3	2	1	Innovation		6
2	2	1	Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

3	1	0	Regional Priority		4
1			Credit	Regional Priority: S Construction Indoor Air Quality Management Plan	1
1			Credit	Regional Priority: S BPDO - Environmental Product Declarations	1
1			Credit	Regional Priority: S BPDO - Sourcing of Raw Materials	1
	1		Credit	Regional Priority: S Demand Response	1

Renewable Energy Production (Alternate Option)

58	23	27	TOTALS	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

SECTION 2

APPENDICES

2.6 ENGINEERING BUILDING PREDESIGN

ENGINEERING BUILDING

PREDESIGN STUDY
EASTERN WASHINGTON UNIVERSITY
PROJECT 30000556

JULY 1 , 2024

PREPARED FOR:
STATE OF WASHINGTON OFFICE OF FINANCIAL MANAGEMENT

BY:
EASTERN WASHINGTON UNIVERSITY
CONSTRUCTION AND PLANNING SERVICES

IN COOPERATION WITH LMN ARCHITECTS

CONTENTS

DETAILED CONTENTS

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9.1 Predesign Checklist
9.2 DAHP and Tribal Notification Letters
9.3 Predesign Study Process Participants
9.4 Preliminary LEED Checklist
9.5 Laboratory Detailed Requirements
9.6 Preliminary Construction Cost Estimates
9.7 Cheney Hall, CEB & Cadet FCS Reports
9.8 Outline Specifications

0.0 EXECUTIVE SUMMARY

0.1 PROBLEM STATEMENT

EWU's high-tech, hands-on engineering pedagogy has evolved beyond its existing substandard teaching laboratory facilities, originally designed to develop high school shop teachers. This lack of suitable space for contemporary engineering education also restricts EWU from offering a Civil Engineering program which would address the critical shortage of civil engineers across Washington State and leverage EWU's existing complementary strengths in geosciences and construction management.

EWU's Department of Mechanical Engineering & Technology (MENT) offers rigorous and pragmatic Mechanical Engineering, Mechanical Engineering Technology, Manufacturing, Applied Technology, and Construction Management degrees that prioritize hands-on training and applied learning that lead to high-paying, non-gig jobs. EWU's engineering classes are taught by faculty with industry experience. The department is housed in the 30-year-old Computing and Education Building (CEB).

MENT graduates are highly sought after in the growing Spokane and West Plains mechanical engineering marketplace—in the most recent survey, 86% of MENT graduates were employed in a job related to their degree within a year of graduation. Regional civil engineering firms often hire students from both MENT and EWU's Geosciences department due to the state-wide lack of qualified graduates in civil engineering. Given EWU's existing strengths in MENT and geosciences and the strong demand for civil engineers, EWU would like to expand its hands-on, career-oriented engineering degrees to include Civil Engineering (CE).

The high-tech, hands-on laboratory training which makes up a significant portion of MENT education currently takes place in substandard spaces with serious deficiencies consistently documented in accreditation visits. These include student safety concerns due to poor instructor sightlines, reduced overhead clearances and limited overhead services which restrict evolution with changing machine technology, aging technological infrastructure, ADA accessibility concerns, and lack of student interaction spaces. Lack of suitable space also restricts both the hiring of additional MENT faculty and the development of a CE program. Finally, the existing inadequate space has severely limited engineering research and on-campus industry collaboration.

0.2 PROPOSED SOLUTION

A new Engineering Building connected to the existing Computing and Engineering Building (CEB) is the best alternative to providing the contemporary, pedagogically appropriate facilities needed to flexibly serve multiple hands-on degree programs including the existing Mechanical Engineering and Technology and prospective Civil Engineering programs.

The 82,522 GSF building will house hands-on teaching and research laboratories, lab support facilities, and student meeting and study areas. 42,411 GSF of CEB and nearby Cheney Hall will be modified to create physical connections to the new building, take better advantage of existing spaces that are suited to non-lab MENT and CE courses, and optimize instructional and operational efficiencies. The construction of the Engineering Building will allow MENT program growth and degree production and allow EWU to offer a CE degree program, with conservative forecasting showing enrollment increasing 76% in the first five years of building occupancy.

Enabling engineering enrollment growth at EWU will not only change students' lifelong potential but lead Washington State in solving some of the 21st century's biggest challenges.

0.3 PROJECT CONTEXT

State and Regional Context

Engineering is one of the top three STEM occupations in Washington State and the Northeast Washington region. State reports indicate a 65% gap in supply of engineering bachelor's degrees needed to meet workforce demand in Washington State in the next five years. All bachelors degrees and certificate programs offered by EWU's Engineering Department are designated STEM/High Demand by the State of Washington and prepare students for entry into cutting-edge engineering and related professions.

Institutional Context

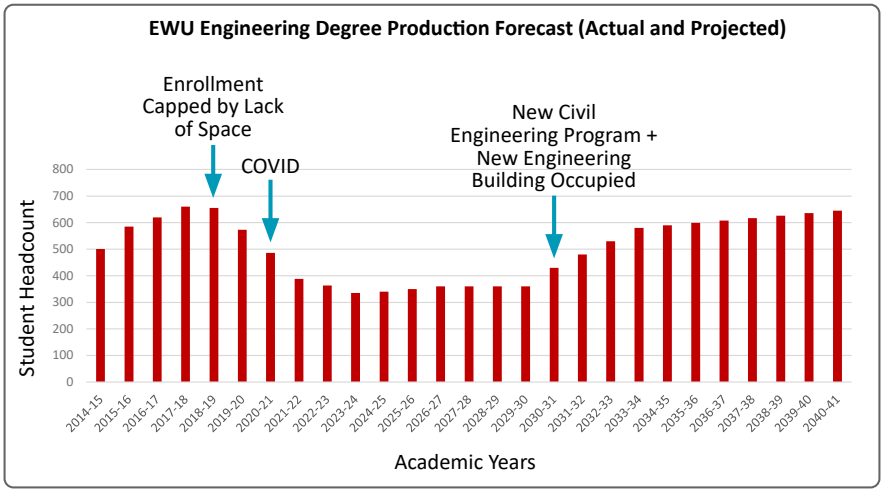
EWU's mission is to provide an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence.

EWU is in the implementation phase of a Strategic Resource Allocation project to better understand which programs (both academic and administrative) are thriving, which require additional support, and which should be eliminated or re-envisioned. From this analysis, engineering emerged as an area for further investment. EWU is also developing a strategic plan and examining its institutional branding and identity. An emerging theme of both efforts is a stronger institutional commitment to emphasize applied learning through serving the needs of the region.

The proposed Engineering Building will support EWU's mission by providing facilities which will encourage enrollment in high-demand degree programs, create spaces that foster inclusive practices, support community and prospective student outreach activities with rural and underserved populations, improve the quality and safety of laboratories, be a living laboratory for sustainability, fully inspire and support students' unique interests through degree completion, and encourage student engagement with each other, the engineering programs and the regional engineering industry.

Enrollment Growth

From 2010 through 2020, EWU's Mechanical Engineering and Technology program experienced strong and sustained enrollment growth. Rebuilding post-Covid requires contemporary, inspiring, pedagogically appropriate facilities that can flexibly serve multiple hands-on degree programs in the future. The Engineering Department has built highly successful outreach programs to rural and underserved prospective student populations and continuation programs with community colleges, which have created a strong pipeline for future MENT & CE students. With the introduction of a new Civil Engineering degree, conservative forecasting shows enrollment increasing 76% in the first four years of building occupancy.



0.4 SPACE NEEDS ASSESSMENT

The program requirements for the Engineering Building and renovation of CEB were developed with campus and engineering faculty and summarized below:

PROGRAM ELEMENT	AREA (ASF)	
ENGINEERING BUILDING		
Teaching Labs	31,400	
Research Labs	3,267	
Lab Support	1,800	
Offices & Office Support	1,740	
Collaboration	7,180	
Total Engineering Building (ASF)	45,387	
Estimated Net/Gross Ratio	55%	Ratio consistent with other science buildings
Estimated Engineering Building Area (GSF)	**82,522**	
CEB Renovated Spaces		
Teaching Labs	14,406	
Research Labs	2,863	
Classrooms	1,296	
Offices & Office Support	8,809	
Collaboration	4,051	
Total CEB Renovated Space (ASF)	31,425	
Estimated Net/Gross Ratio	80%	
Estimated CEB Renovated Area (GSF)	**39,281**	
Cheney Hall Renovated Spaces		
Teaching Labs	981	
Research Labs	1,836	
Total CEB Renovated Space (ASF)	2,817	
Estimated Net/Gross Ratio	90%	
Estimated CEB Renovated Area (GSF)	**3,130**	

EWU aspires to at minimum achieve the mandatory LEED® Silver certification; higher certification levels and other methods to reduce greenhouse gas emissions will be explored in future phases.

0.5 ANALYSIS OF ALTERNATIVES

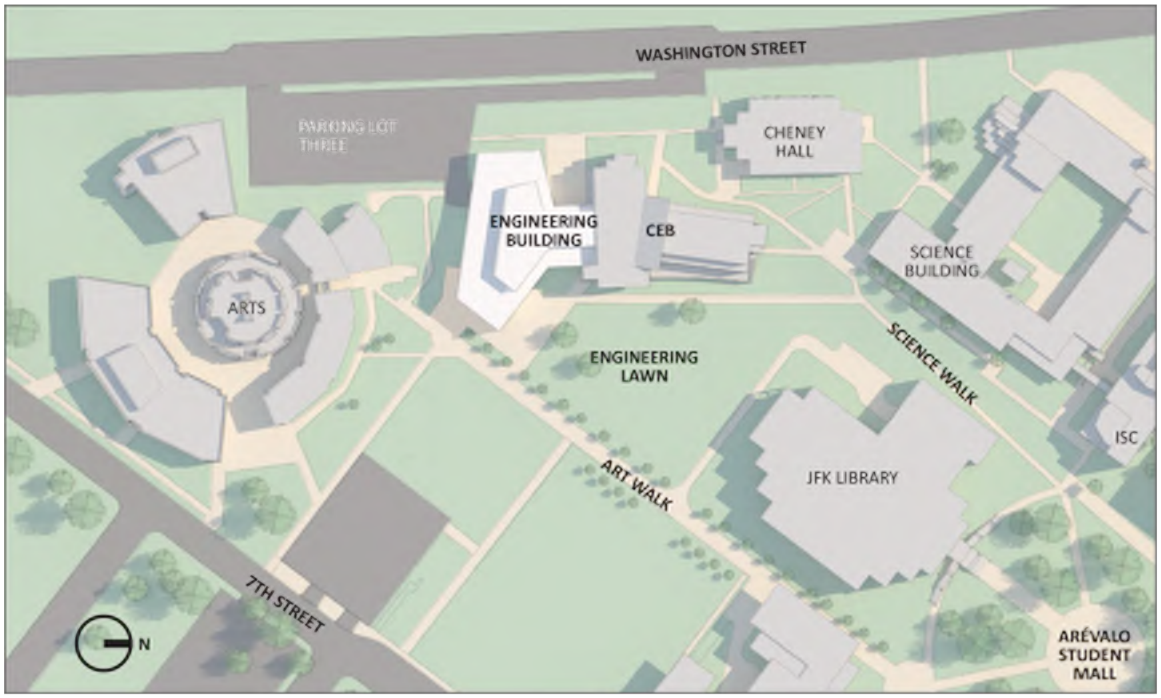
Three alternatives were considered for addressing the identified needs:

- No action
- Full renovation of the existing CEB and Cheney Hall facilities
- A new building on the existing campus connected to CEB

No action would maintain substandard, pedagogically inappropriate facilities and makes it impossible for EWU to offer new, high-demand STEM degree programs such as civil engineering. A full renovation of the existing CEB is not prudent given that most spaces are good condition for their intended use as classrooms, and the resulting laboratories would still be substandard in size and quality due to restricted dimensions and existing low ceiling heights.

0.6 SITE ANALYSIS

Five candidate sites on the Cheney campus were identified and evaluated to determine a preferred site for the a new Engineering Building. Key factors in the site selection were appropriate area available, proximity and possible connections to the existing CEB, increasing proximity to Washington Street for greater visibility to industry and community, connections to campus pedestrian and ADA circulation, and disruption to existing buildings and landscape. Topography, solar orientation, access to utilities, service access, parking impact, and future campus expansion were also considered.



EWU Engineering Building Site Plan

The site selected is Site C: Cadet Hall, which is located immediately south of the existing CEB and east of Washington Street. The site best meets the factors above and responds to EWU's 2014 Master Plan Goals of connecting to the larger community and enhancing open space. Another benefit is this site's proximity to the newly proposed all-electric geothermal heating and cooling plant that will service this building, removing it from the existing fossil fuel fired steam plant.

0.7 PREFERRED ALTERNATIVE

Satisfaction of the identified needs can best be achieved through construction of a new building on EWU's Cheney campus integrally connected to the adjacent existing CEB. The preferred alternative will provide existing and planned Engineering programs with the contemporary, hands-on, safe teaching laboratories they need to flexibly serve existing and future engineering degrees. The new facilities will increase faculty and industry research opportunities, support community and prospective student outreach, and encourage student engagement with each other, the Engineering programs and the regional engineering industry.

The preferred alternative will construct a new four-story, 82,522 GSF facility housing engineering teaching laboratories, research laboratories, lab support facilities, work areas, and student collaboration and study areas. Square footage in the new Engineering Building is reduced by taking advantage of CEB's strengths as a traditional classroom and office building; 39,281 GSF will be renovated where suitable for the project program. The direct connection with CEB takes advantage of offering many efficiencies such as shared departmental and instructional resources, direct access to faculty and administrative offices, shared student amenities, and reduced building envelope. 3,130 GSF of suitable space in nearby Cheney Hall will also be renovated to complete the project program.

The demolition of Cadet Hall is also included in the project scope. See Section 4.0 Site Analysis for more detailed discussion of Cadet Hall and relocation of its current program.

0.8 PROJECT SCHEDULE SUMMARY

Predesign	March 2024 – June 2024
Design	November 2025 – January 2027
Building Permit	November 2026 – February 2027
Bidding	March 2027 – June 2027
Construction	July 2027 – February 2030
Closeout & Commissioning	March 2030 – May 2030
Move In	June 2030 – July 2030
Classes begin in Engineering Building	September 2030

0.9 BUDGET ANALYSIS

Escalated project costs for the Engineering Building are summarized as follows:

Acquisition Costs	$0
Consultant Services	$9,569,384
Construction Contracts	$106,942,195
Equipment	$6,403,647
Art Work	$636,743
Other Costs	$0
Project Management	$4,433,304
Total Project Request	**$127,985,272**

Detailed project costs have been submitted to OFM through the online Capital Budgeting System.

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1.0 PROBLEM STATEMENT

1.1 PROBLEM STATEMENT

EWU's high-tech, hands-on engineering pedagogy has evolved beyond its existing substandard teaching laboratory facilities, originally designed to develop high school shop teachers. This lack of suitable space for contemporary engineering education also restricts EWU from offering a Civil Engineering program which would address the critical shortage of civil engineers across Washington State and leverage EWU's existing complementary strengths in geosciences and construction management.

EWU's Department of Mechanical Engineering & Technology (MENT) offers rigorous and pragmatic Mechanical Engineering, Mechanical Engineering Technology, Manufacturing, Applied Technology, and Construction Management degrees that prioritize hands-on training and applied learning that lead to high-paying, non-gig jobs. EWU's engineering classes are taught by faculty with industry experience. The department is housed in the 30-year-old Computing and Education Building (CEB).

MENT graduates are highly sought after in the growing Spokane and West Plains mechanical engineering marketplace—in the most recent survey, 86% of MENT graduates were employed in a job related to their degree within a year of graduation. Regional civil engineering firms often hire students from both MENT and EWU's Geosciences department due to the state-wide lack of qualified graduates in civil engineering. Given EWU's existing strengths in MENT and geosciences and the strong demand for civil engineers, EWU would like to expand its hands-on, career-oriented engineering degrees to include Civil Engineering (CE).

The high-tech, hands-on laboratory training which makes up a significant portion of MENT education currently takes place in substandard spaces with serious deficiencies consistently documented in accreditation visits. These include student safety concerns due to poor instructor sightlines, reduced overhead clearances and limited overhead services which restrict evolution with changing machine technology, aging technological infrastructure, ADA accessibility concerns, and lack of student interaction spaces. Lack of suitable space also restricts both the hiring of additional MENT faculty and the development of a CE program. Finally, the existing inadequate space has severely limited engineering research and on-campus industry collaboration.

1.2 PROPOSED SOLUTION

A new Engineering Building connected to the existing Computing and Engineering Building (CEB) is the best alternative to providing the contemporary, pedagogically appropriate facilities needed to flexibly serve multiple hands-on degree programs including the existing Mechanical Engineering and Technology and prospective Civil Engineering programs.

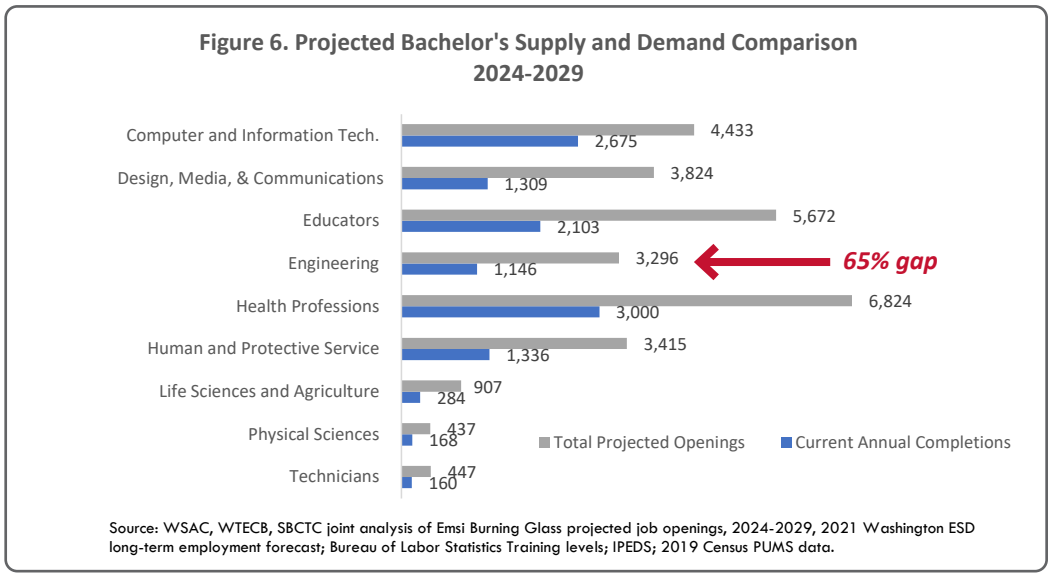
The 82,522 GSF building will house hands-on teaching and research laboratories, lab support facilities, and student meeting and study areas. 42,411 GSF of CEB and nearby Cheney Hall will be modified to create physical connections to the new building, take better advantage of existing spaces that are suited to non-lab MENT and CE courses, and optimize instructional and operational efficiencies. The construction of the Engineering Building will allow MENT program growth and degree production and allow EWU to offer a CE degree program, with conservative forecasting showing enrollment increasing 76% in the first ten years of building occupancy.

Enabling engineering enrollment growth at EWU will not only change students' lifelong potential but lead Washington State in solving some of the 21st century's biggest challenges.

1.3 STATE OF WASHINGTON CONTEXT

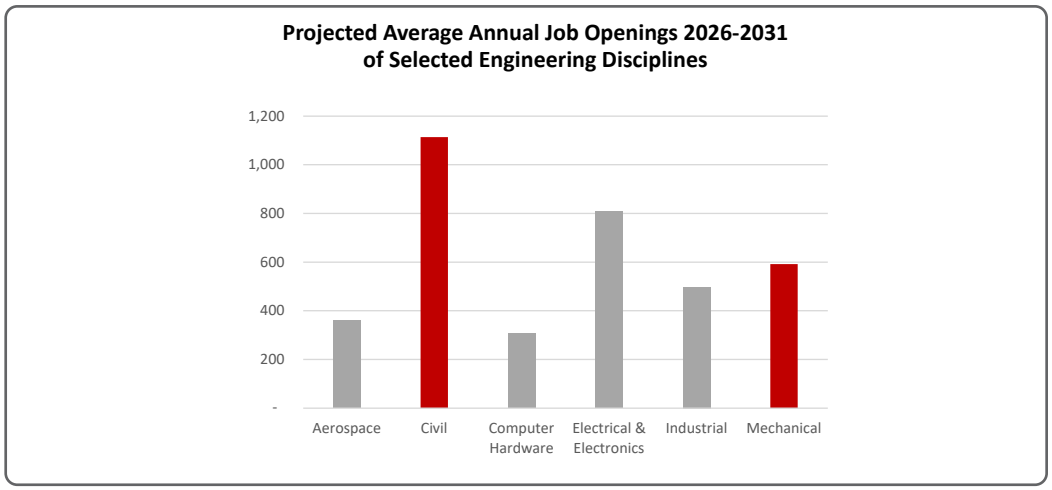
Higher Education Objectives

The Education and Research Data Center [ERDC] of the Washington Office of Financial Management has identified engineering as a STEM/High Demand field. "A Skilled and Educated Workforce 2021-22" issued jointly by the Washington Student Achievement Council, the State Board for Community and Technical Colleges and the Workforce Training and Education Coordinating Board forecasts a ***65% gap in supply of engineering bachelor's degrees*** needed to meet workforce demand in Washington State in the next five years. All bachelors engineering degrees awarded by EWU apply toward filling this gap.



Source: A Skilled and Dedicated Workforce 2021-22

The same report notes that ***demand for civil engineers tops the list*** of the number of annual openings in top engineering jobs at a bachelor's level. The 2023 WSAC HELM Report notes that civil engineering is and is predicted to continue to be one Washington State's top twelve occupations for at least the next ten years at a bachelor's and above level. 2023 WA Employment Security data predicts that ***mechanical engineers ranks in the top three*** in demand in engineering jobs. The Mechanical Engineering and Technology (MENT) and prospective Civil Engineering (CE) programs offered by EWU are focused on training graduates who can serve these regional needs.



Source: WA Employment Security, 2023

EWU Engineering Degree Production

EWU's engineering programs are focused on educating students who seek degrees in STEM, high demand engineering professions. From 2010 through 2020, EWU's MENT program experienced strong and sustained enrollment growth. As described further in Section 1.3 Operational Context, rebuilding growth post-Covid requires contemporary, inspiring, pedagogically appropriate facilities that can flexibly serve multiple hands-on degree programs in the future. With the introduction of a new Civil Engineering degree, conservative forecasting shows enrollment increasing 53% in the first ten years of building occupancy.

1.4 INSTITUTIONAL CONTEXT

EWU is in the implementation phase of a Strategic Resource Allocation project to better understand which programs (both academic and administrative) are thriving, which require additional support, and which should be eliminated or re-envisioned. From this analysis, **engineering emerged as an area for further investment**. EWU is also developing a strategic plan and examining its institutional branding and identity. An emerging theme of both efforts is a stronger institutional commitment to emphasize applied learning through serving the needs of the region. In Spring 2024, EWU adopted a revised Mission, Vision, and Statement of Values for the university.

EWU's Mission & Vision:

The proposed Engineering Building will support EWU's mission and vision by providing facilities which will encourage enrollment, support community and prospective student outreach activities with rural and underserved populations, improve the quality and safety of laboratories, and encourage student engagement with each other, the engineering programs and the regional engineering industry.

EWU Mission: Eastern Washington University provides an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence.

EWU Vision: Eastern Washington University provides an education rooted in the liberal arts, designed to address the unique challenges and opportunities facing the region. Characterized by a student-centered focus and opportunities for applied learning in high demand fields, this education creates upward social mobility and intellectual growth for our students that supports a healthy, sustainable, and economically successful region.

EWU MENT student in the Robotics Lab

EWU's Strategic Plan

EWU's developing strategic plan (2024-2029) will be supported by the Engineering Building as described below:

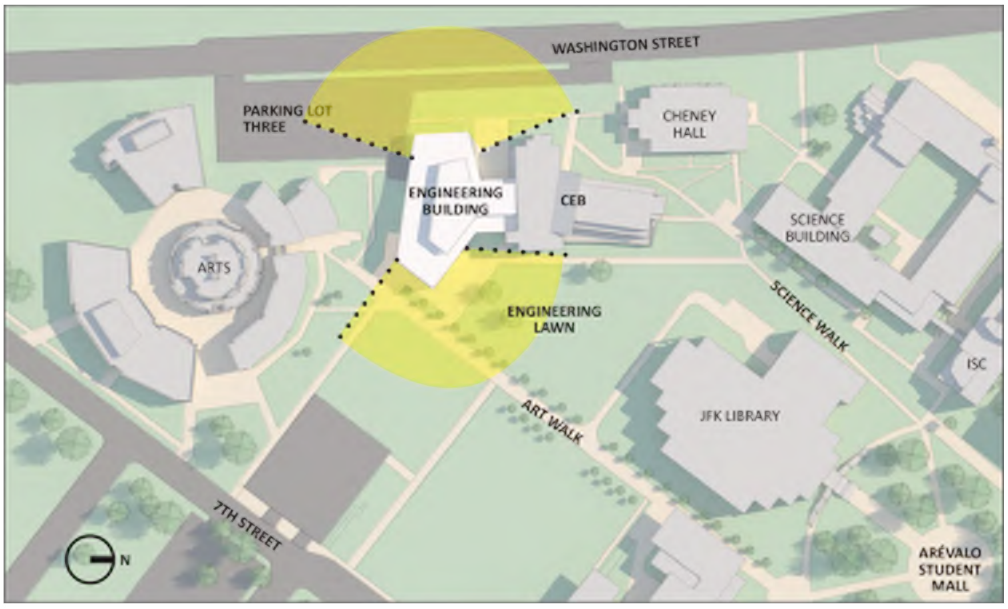
EWU Strategic Plan Pillars	Engineering Building's Role In Pillars
Accessibility. Eastern Washington University strives to create a more inclusive, obtainable, and equitable college education.	The Engineering Building will increase access to high demand degrees and provide critical space for community engagement with prospective rural and underserved students.
Academic Excellence. As a community of learners, we pursue truth and advance knowledge through creative works, research, and scholarship. Our student-centered education provides excellent teaching, dynamic conversations, and a robust intellectual experience both inside and outside the classroom. We provide applied learning opportunities to prepare students for future success, invest in our workforce and create opportunities for professional growth for students, faculty, and staff.	The Engineering Building's contemporary, hands-on teaching laboratories and collaboration spaces will support innovative instruction and exchange of ideas. Increased enrollment through a contemporary facility that celebrates applied learning will allow the department to add a civil engineering degree and graduate programs which will result in additional FTE faculty hires.
Belonging through Justice, Equity, Diversity and Inclusion. We are committed to building an inclusive, supportive, and equitable university community. We strive to integrate the principles of justice, equity, diversity, and inclusion into all university operations, fostering an environment that nurtures a sense of belonging among all members of the community. Students, staff, and faculty are seen, understood, and appreciated for the talents they bring to our educational community.	The Engineering Building will be a place to practice inclusive practices through the hands-on nature of the teaching laboratories, the transparency into student project laboratories, ample space to assemble and display student work, and visible spaces for team collaboration and student clubs. A central space for internal and outreach events and celebrations welcomes and invites students and faculty to participate in the larger engineering community.
Regional Impact and Regional Contribution. We promote economic vitality and regional success through scholarly research, dedicated service, and educational programs that meet regional workforce needs in high demand fields. When combined with our commitment to a liberal arts education, we enhance social mobility, inclusivity, and the well-being of our community while remaining nimble to its ever-changing demands.	Not only will the Engineering Building contribute meaningfully to the regional engineering workforce demand through increased enrollment, it will increase student and faculty interaction with the cutting-edge mechanical and civil engineering industries in the region through contemporary research laboratories and flexible space for departmental outreach.
Student Success. We embrace all students. Students' needs are complex, and student success requires student engagement and positive outcomes. We are committed to supporting all our students with a focus on creating conditions informed by the needs of our first-generation, low-income, and other structurally marginalized students	The Engineering Building will be a student-centered environment. Its high quality, hands-on teaching and project laboratories, flexible work areas and student interaction spaces will inspire and fully support their unique engineering interests and ideas through degree completion.
Sustainability. We are leaders committed to sustainability as a balance between the needs of the environment, the needs of the economy, and equitable outcomes for current and future generations.	The Engineering Building will be a living laboratory for sustainable facility design, with building systems on display for faculty and students. A civil engineering program helps to sustain the local economy and infrastructure.

EWU's Master Plan

In 2014, the university updated the Cheney Campus Comprehensive Master Plan. In Horizon 1 (2013 to 2023) 1.4.5, the plan states: *Construct addition to the Computer and Engineering Sciences Building*. EWU's planning process integrates comprehensive campus planning with its facilities master plan and ten-year capital plan. This process provides short and long-range planning that is thoughtful and targeted but still dynamic and flexible enough to meet current and future campus needs.

The Master Plan describes five planning principles which the Engineering Building follows:

- *Carefully evaluate each project with regard to renovation vs. replacement opportunities*
  See Section 3.0 for renovation vs. replacement studies.
- *Locate and size all new or replacement buildings to optimize site utilization*
  See Section 4.0 for site optimization studies.
- *Improve the overall character of the campus with the implementation of each project*
  The Engineering Building will have two front doors to engage students on campus at the Engineering Lawn and the regional community on Washington Street. It will be visible from the southeast corner of Arévalo Student Mall at the entry to the Art Walk.
- *Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries*
  The building has been intentionally sited on Washington Street to present a new, dynamic front door for the Engineering Department and EWU that is highly visible and accessible to the surrounding community. Space for community outreach programs and events will be located just inside the Washington entrance.
- *Reinforce and improve the overall cohesion of campus, specifically linkages across Washington Street, whenever possible*
  Extending the Engineering Building to the East from Washington Street introduces a strong edge to the existing Engineering Lawn, complementing the edge created by JFK Library. The Engineering Building's student entrance on the Engineering Lawn and a new pathway to this entrance from Science Walk will further activate the Engineering Lawn. The building will improve and the pedestrian experiences of the Art Walk and 7th Street.



Engineering Building Site Plan: Dual Orientation Toward Washington & the Engineering Lawn

1.5 OPERATIONAL CONTEXT

Background

The Computing and Engineering Building (CEB) was built as a traditional classroom and office building in 2005 to house the then intertwined departments of computer science and engineering. In the years since, the disciplines have grown into three distinct departments, each of which has seen dramatic growth in employer demand for bachelor degree graduates.

Since their creation, the disciplines have also seen significant shifts in the greater Spokane region. The regional computer science industry has grown and consolidated in the Spokane City Center and mechanical engineering has taken center stage as Spokane and West Plains mechanical engineering companies have emerged as major players in their markets. EWU has been a long-time leader in regional bachelor degree production for the engineering disciplines; the Computer Science BS was accredited in 1986, the Mechanical Engineering Technology BS in 1990, the Electrical Engineering BS in 2005, and the Mechanical Engineering BS in 2011.

To reflect these regional shifts and to keep up with demand for graduates, EWU's Computer Science and Electrical Engineering programs relocated to EWU's Catalyst Building in downtown Spokane in fall 2020, allowing engineering facilities on EWU's Cheney campus to focus on the Mechanical Engineering, Mechanical Engineering Technology, Manufacturing, Construction Management, and Technology degree programs.

Mechanical Engineering and Technology

EWU's Department of Mechanical Engineering and Technology (MENT) offers rigorous and pragmatic degrees that prioritize hands-on training and applied learning. The majority of students are enrolled in Mechanical Engineering, Mechanical Engineering Technology, Applied Technology, Construction Management Technology, and Manufacturing Technology. The majority of faculty in MENT have extensive industry experience. Majors in the MENT department make up approximately 5.5% of EWU's total undergraduate enrollment, while majors in all of the engineering and computer science disciplines constitute approximately 12.5% of the total undergraduate enrollment.

A unique aspect of EWU's engineering programs is that the robotics and automation curricula are housed within MENT, rather than the more conventional home in Electrical Engineering. This gives an inherently more interdisciplinary approach to training students with an interest in moving directly to the workforce. By training students with a mechanical engineering background how to program and operate industrial robots and Programmable Logic Controllers (PLCs), EWU's

EWU MENT student in the Robotics Lab

MENT graduates enter the workforce with an unusually holistic understanding of advanced manufacturing processes. MENT students combine experience programming an industrial robot or manufacturing line with a deep understanding of the physical systems themselves (e.g. manipulators, grippers, material strength, etc). The curriculum is built specifically to address the needs of regional industry that focuses on advanced manufacturing, large scale mechanics, and heavy industry robotics. EWU's degree programs involve classroom, laboratory and project work that results in graduates who have not only learned about mechanical engineering, they know how to apply it.

The MENT department at EWU strives to ensure that students graduate with a resume not just a diploma. Career placement data demonstrates that EWU's MENT graduates are sought after in the marketplace. A 2019 survey of recent MENT graduates showed that 86% of MENT alumni report that they are employed full or part-time in the year following graduation, with most students employed within the first six months after graduation. This number has held steady over more recent years. 55% of the ME and MET respondents also reported salaries over $60,000 *in their first year*.

New Degrees

Introducing a Civil Engineering degree has been a long-time goal of EWU. The university has made this top priority as the region continues to forecast high demand for civil engineers into the next decade. EWU's plan is to differentiate its approach to Civil Engineering by leveraging the breadth of disciplines represented in the College of STEM, ranging from the natural sciences to the engineering fields. In addition to the robust Mechanical Engineering program and workforce-oriented Construction Management degree, EWU has a Geoscience department with historical strengths in geotechnical engineering, GIS, and remote sensing. Planning for EWU's Civil Engineering degree is a collaborative initiative of MENT and Geosciences. The planned program will emphasize energy-efficient infrastructure, "green" building design and construction, sustainable infrastructure development, low-impact development techniques, and sustainable materials.

To meet the increasing need for specialized and advanced training in industry, EWU also plans to expand its graduate curriculum to include programs such as a Masters degrees in Mechanical Engineering and Civil Engineering. It will be impossible to introduce these additional programs and degrees in the future without quality teaching and research laboratory spaces.

EWU MENT teaching lab facilities with substandard overhead clearances in the CEB basement

Existing Facilities

EWU's engineering programs had their roots in an earlier program primarily focused on training high school Career and Technical Education teachers (e.g. shop, graphic design, and electrician teachers). EWU began to transition these programs to true engineering degrees in the late 1990s; the new engineering programs were still in their infancy when CEB was constructed in 2005. The basement of CEB, where the primary MENT teaching labs are located, was programmed and built to reflect those early needs and philosophy. The engineering programs have changed dramatically since that time, now producing Mechanical Engineering and Mechanical Engineering Technology graduates prepared for cutting-edge jobs at engineering and advanced manufacturing companies throughout the region.

While moving Computer Science to Spokane resulted in some vacant computer laboratories in CEB, these spaces are not suitable for the majority of MENT or CE teaching laboratories due to their minimal mechanical, electrical and plumbing services and overhead clearances. The basement of CEB contains the only spaces in the building with the mechanical, plumbing and electrical capabilities required for the hands-on materials and machine laboratory training which makes up a significant portion of MENT education. As noted previously, the basement of CEB is cramped and dark; not an inspiring place to spend two to four years earning a degree.

EWU MENT large student projects workspace & storage in loading door pathway

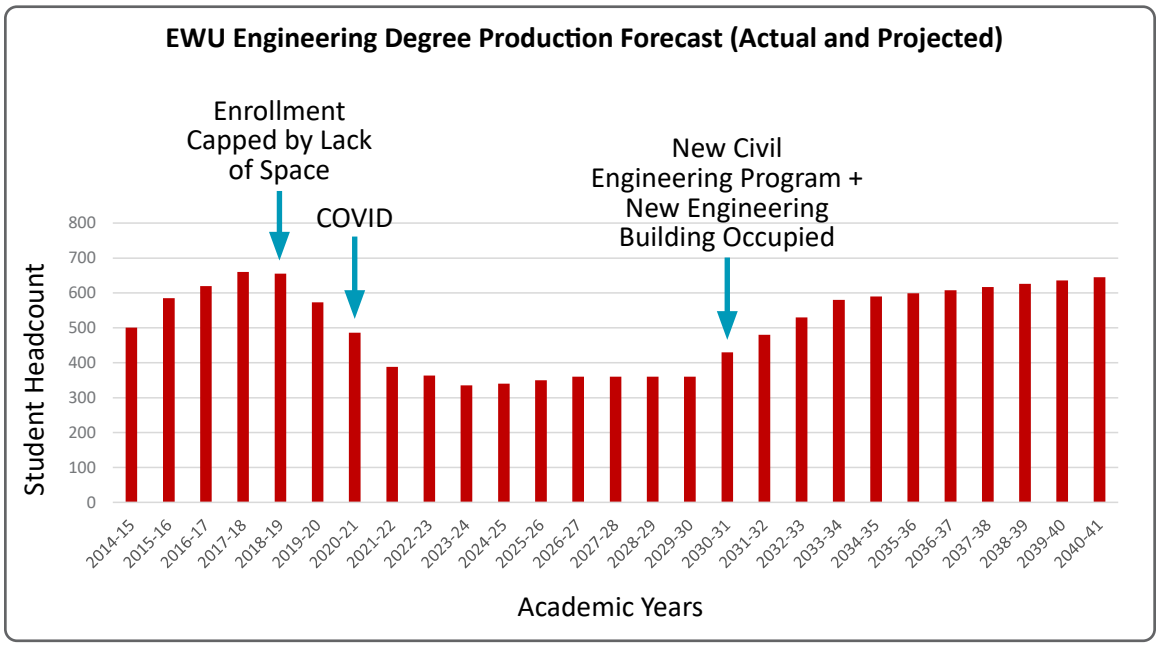
While there has not been certification difficulty to date, accreditors consistently cite strong concerns regarding capacity and safety issues in the existing CEB engineering laboratories. A primary concern of both faculty and accreditors is student safety due to poor sightlines in these spaces. Overhead clearances do not allow the relocation and addition of certain equipment, and overhead services are minimal resulting in space that is inflexible to the constantly evolving requirements of the field.

The lack of flexible, interdisciplinary collaboration spaces will also make future degree certification challenging. Students must complete a team capstone project to graduate. There is limited space for student teams to meet to develop their projects, so students work in circulation zones or amidst laboratory machine areas, adding to safety concerns. These projects are often physically large and need to be located near hand-on laboratory spaces during their production. The very limited storage space in the CEB basement is not only insufficient for the current number of capstone projects but nonexistent for large projects which results in them being stored in teaching laboratories or circulation zones which, in turn, become even more crowded and unsafe.

In 2006, several rooms in nearby Cheney Hall were renovated to provide additional labs required by the Electrical Engineering program. Further details on the existing facilities in CEB and Cheney Hall can be found in Section 2 of this report.

Enrollment Forecast

From 2010 through 2020, EWU's MENT program experienced strong and sustained enrollment growth, so much so that the Department capped enrollment in 2018-2019 due to lack of facility capacity. The pandemic further depressed EWU's engineering enrollment. Since Covid, the engineering programs have continued their strong outreach programs to rural and underserved



prospective student populations by providing hands-on engineering activities which have historically directly correlated with subsequent enrollment at EWU and in engineering degrees. MENT in particular has built and maintained strong continuation programs with community college programs to move related Associate in Arts degrees holders (AA) into engineering bachelor's degrees at EWU. Each year, the College of STEM organizes one of the biggest STEM-focused career fairs in Washington State.

EWU MENT students in the Metallics Lab in the basement of CEB

However, in the post-Covid environment, prospective students also need to see that they'll be inspired during the process of earning a degree, and the prospect of spending two to four years in the existing cramped, dark MENT facilities in the basement of CEB does the opposite. ***A facility which forefronts MENT and CE work, including daylit hands-on laboratories and adequate student project space will encourage prospective students to see themselves at EWU and to see their success after graduation.***

Rebuilding post-Covid requires contemporary, inspiring, pedagogically appropriate facilities that can flexibly serve multiple hands-on degree programs in the future. With the introduction of a new Civil Engineering degree, conservative forecasting shows enrollment increasing 76% in the first four years of building occupancy.

Industry Involvement & Research

EWU's Department of Mechanical Engineering & Technology has a long history of strong relationships with the regional manufacturing industry including internships, company tours, career preparedness, guest lectures and instruction, on-campus interviews and engagement events. The current facilities can no longer accommodate the increased attendance at popular events such as capstone project demonstrations and the career fair, which must be held elsewhere on campus reducing the impact of the engineering experience for prospective students and industry partners. During on-campus job interviews, students are often interviewed in groups due to lack of suitable spaces.

A department goal is to provide opportunities for students and industry partners to interact and work together in active, hands-on engineering settings at EWU. The department has provided on-campus testing and product development support to industry partners in the past, but cannot provide these capabilities currently due to limited facilities. Companies have donated major robotics equipment in the past but the department has recently declined state-of-the-art robotics equipment donations due to lack of suitable facilities. Similar donations from mechanical engineering companies are restricted by the lack of suitable facilities.

Table 2. Describe the skill sets you struggle to find locally

	Responses	Percent
Soft Skills	25	20%
Commercial Drivers	7	6%
Machinery	7	6%
Sales	6	5%
Skilled Trades	6	5%
Welders	6	5%
Total Responses	124	

n=124

Source: Washington State Regional Educational Needs Assessment 2017

The Department works closely with S3R3 (West Plains/Airport Area Public Development Authority) which states that "the West Plains Airport Area is a globally recognized innovation zone with advanced manufacturing and aerospace industry clusters." Access to an educated workforce is critical to prospective companies and EWU's Department of Mechanical Engineering & Technology is a major contributor to building advanced manufacturing technology industries in the region.

There is strong interest by current faculty and industry in strengthening mechanical engineering and advanced manufacturing research capabilities at EWU. Given the limited existing laboratory space appropriate for hands-on engineering work and the priority to educate and graduate

students, engineering research has been severely limited and will continue to be limited without dedicated research space. An increase in faculty due to an increase in enrollment will increase the demand for research space.

Student Collaboration & Community Building

The Washington State Regional Educational Needs Assessment 2017 states that "a repeated concern of local employers was the lack of soft skills among new and potential employees." EWU's Department of Mechanical Engineering & Technology is committed to developing graduates who not only have technical knowledge and the ability to apply it, but also have real world skills such as leadership, teamwork, and communication to succeed in their careers.
Unfortunately the current facilities do not have the student interaction and faculty-student interaction spaces to encourage the types of interpersonal interactions that develop these skills. Capstone projects are team based but there are no meeting spaces for student teams to gather in. Commuters comprise the majority of EWU students but there is limited space for students to study and interact in the current facilities.

There are limited informal meeting spaces for faculty to interact with individuals and teams of students outside of class. There is only one large meeting room in CEB. Departmental community-building events are now often too large to be held at CEB and must be held elsewhere on campus.

Student clubs have limited to no space to work or meet. For example, the SAE Baja Club has access to a small space in Cheney Hall which they share with non-engineering student clubs and the Rocketry Club borrows space in the capstone projects lab. The department expects that enrollment in these and other applied engineering clubs would increase significantly given appropriate space with greater visibility to other students.

Community Outreach

Learning how to talk about their work with non-engineers is seen as a critical skill for EWU Engineering graduates, and the department supports that through community and industry outreach programs and events which the students are expected to participate in.

As noted in the Enrollment Forecast section, the Department of Mechanical Engineering & Technology has built successful outreach programs to rural and underserved prospective student populations by providing hands-on engineering activities, events and clubs with the community. It would be most impactful to host these events in the engineering facilities to inspire prospective students to visualize an inspiring college engineering experience, but the department currently cannot house these events due to the space constraints and safety concerns described earlier, and so most outreach is mobile.

1.6 PROJECT HISTORY

The predesign process began in 2020 with a predesign process and report centered around providing pedagogically-appropriate space for the MENT program through a series of stakeholder work sessions including administrators, faculty and staff from the College of STEM, engineering faculty and staff, EWU Facilities & Planning and LMN Architects. The report was completed at the start of the pandemic at which point University priorities shifted in response.

Four years later, new facilities for Engineering and the development of a Civil Engineering program remain on EWU's 10-year plan. The 2024 predesign report process included stakeholder work sessions with a similar range of participants which resulted in revisions to the project program space list, organizational relationships, and space use strategies which reflect the operational context described above.

2.0 SPACE NEEDS ASSESSMENT

2.1 ASSUMPTIONS AND GUIDELINES

2.2 EXISTING FACILITIES

2.3 SPACE NEEDS ASSESSMENT

2.4 SPACE REQUIREMENTS

2.5 TECHNICAL PROGRAM REQUIREMENTS

2.6 FUTURE REQUIREMENTS

2.7 CODES/REGULATIONS

2.1 ASSUMPTIONS AND GUIDELINES

Programming is the phase in which the project needs are defined, goals are identified and initial budget information is developed. It forms the foundation upon which all subsequent design work is based. The following assumptions were utilized in forming the program requirements:

- The current MENT pedagogy and prospective CE degree require contemporary teaching laboratories, in particular hands-on laboratories with adequate space and systems.
- Each engineering major must complete a capstone project in order to graduate which require project laboratories and projects storage spaces appropriate to those projects.
- Heavy teamwork and the fact that the majority of EWU students are commuters requires adequate student interaction spaces, in particular meeting rooms, study spaces, lounge spaces, and community areas.
- The department's continued success in prospective student outreach warrant interaction spaces for open houses, MESA activities, and other community projects which are critical to achieving EWU's mission and vision.
- The department's continued success in collaboration with local industry warrants interaction spaces for industry job fairs, interviews and collaboration.
- Current faculty interest in dedicated research space is strong, and projected enrollment increases will allow the hiring of new FTE faculty with similar aspirations

Programming Standards

EWU considers a variety of space standards when planning and designing facilities described on the following pages in this section. EWU primarily relies on the design team's careful analysis of the activities and current pedagogical standards required by the specific occupants of a facility. For the Engineering Building, EWU selected LMN Architects, a national leader in higher education architectural design, and Research Facilities Design (RFD), a national laboratory planner with extensive experience designing engineering teaching laboratories. With EWU, the LMN/RFD team has proposed laboratories, classrooms and interaction spaces based on current industry standards. This process and standards are described in this section.

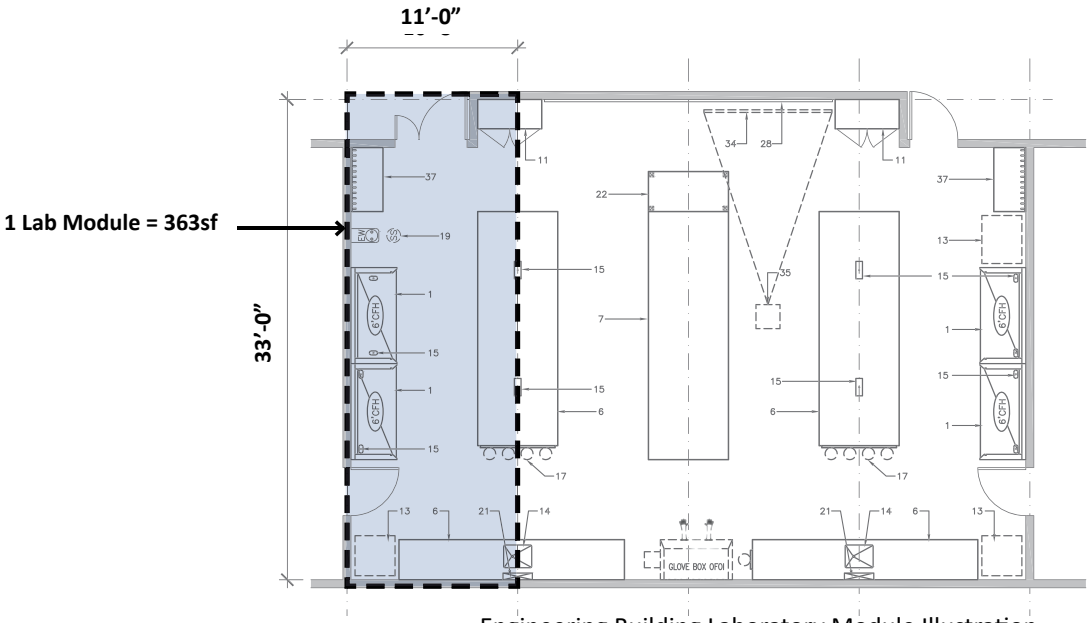
FEPG: Even though existing space planning references such as the Facilities Evaluation and Planning Guide 1994 (FEPG) and the Postsecondary Education Facilities Inventory and Classification Manual 2006 (FICM) are dated and do not accurately reflect the current needs and trends in higher education, they do hold some value as a rough benchmark and EWU uses them as such. The table below shows that the program for the Engineering Building and renovated CEB and Cheney Hall meet the FEPB standards. Note that FEPG Appendix A provides a wide range of lab station sizes for mechanical engineering labs.

FEPG room classification number	FEPG room classification type	Project ASF per station	FEPG standard	Meets standard (Y/N)	Comments
110	Classroom	20	16-26	Y	
210	Class lab – mechanical engineering	76-290	175 (Range 35-180)	Y/N	Varies based on engineering equipment sizes; see FEPG Standards Appendix A; Woodshop, Metallics, Additive Manuf, Construction Materials and Concrete Labs require significant additional ASF/Station for large equipment and safe working clearances.
215	Class lab – services			N/A	Sized appropriately to class lab needs
230	Computer lab	44	60	N	Falls below FEPG Guidelines but meets programming need
250	Research lab			N/A	Sized for research program needs
255	Research lab – service			N/A	Sized appropriately to research lab needs
311	Faculty office	140	140	Y	
313	Student assistants	70 per 1	140 per 2 min.	Y	
314	Clerical office	140	140	Y	
316 & 317	Staff & other office	113	120	Y	Below standards appropriate for visiting Advising staff
350	Conference room	30	20	N	Sized to allow program flexibility and storage needs
550	Demonstration			N/A	Sized appropriately for departmental needs
651	Nonpublic lounge			N/A	Sized appropriately for departmental needs
680	Meeting room			N/A	Sized appropriately for departmental needs

Efficiency of Space Allocation in the Engineering Building per FEPG 1994 Standards

Laboratory Module: To provide a baseline planning module for programming of teaching and research laboratories, a standard laboratory module was established by Research Facilities Design (RFD) based on industry standards and applicability to the types of laboratories included in the Engineering Building project.

The proposed laboratory planning module for the building was derived by analyzing the laboratory bench, equipment, and circulation space required for the engineering functions.



Engineering Building Laboratory Module Illustration

The module is based on the bench space required for technical work stations, instruments, and procedures. The space required between benches is designed to allow people to work back-to-back at adjacent benches, to allow for accessibility for disabled and still allow for movement of people and laboratory carts in the aisle.

The preliminary planning module utilized for the Engineering Building is 11'-0" wide by 33'-0" deep = 363 Assignable Square Feet. This module will provide adequate bench space plus space for floor standing equipment and fume hoods, and can be divided for smaller support spaces such as storage or instrument rooms.

Class and Research Laboratories: Preliminary areas for teaching and research laboratories were assigned based on benchmarks developed by RFD from similar university laboratory facilities, reviews of sizes of existing and proposed engineering equipment required in each lab, and on discussions with the faculty, staff and administration. Areas were rounded to the nearest laboratory module. Room diagrams for each proposed laboratory can be found in the Appendix of this report.

Classrooms: One classroom is included in the project scope as the result of reprogramming existing spaces in CEB. In order to create a physical connection to the Engineering Building on the Second Floor, two classrooms will be combined into one larger classroom.

Laboratory Service: The program size of lab support spaces was based on a comparison of existing spaces to identified needs.

Office and Staff Space: Renovations to office and staff space are intended to reduce average square footage to better align with current EWU office space standards.

2.2 EXISTING FACILITIES DEFICIENCIES

Two facilities currently house the engineering programs at EWU: the Computing and Engineering Building (CEB) and Cheney Hall. CEB houses the majority of the engineering program.

As noted in more detail under Existing Facilities in the Problem Statement section, CEB was designed in 2005 as primarily a classroom, computer lab and office building. Only the basement of CEB has the mechanical, electrical and plumbing systems suitable for the hands-on material and machine training which makes up a significant portion of MENT and CE education. In 2006, several rooms in nearby Cheney Hall were renovated to provide additional labs required by the electrical engineering program.

The existing facilities have serious pedagogical deficiencies which have been noted by accreditors and which are at odds with the university's mission to provide an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence. Deficiencies in the existing buildings include:

Pedagogical Deficiencies in the Computer Engineer Building (CEB)
Teaching Lab Safety Deficiencies: The existing MENT program has made use of every square inch of the CEB basement, which contains the only facilities suitable for hands-on shop laboratories. In many cases due to space constraints in CEB, multiple laboratory classes that would normally be held in separate teaching laboratory facilities are being taught in the same space This has resulted in significant safety issues noted by both faculty and accreditors due to overcrowding and confinement. The awkward shapes of existing spaces do not allow instructors to have sightlines to all laboratory participants which is critical to student safety.

Teaching Lab Technical Deficiencies: The basement of CEB is the only facility with the mechanical, electrical and plumbing systems suitable for the existing MENT and prospective CE programs. However, across the entire CEB basement, overhead clearances are minimal and do not allow the relocation and addition of certain equipment. Overhead electrical services are also minimal resulting in space that is inflexible to the constantly evolving requirements of the field. Current laboratories do not have the vibration isolation and sound insulation that is required for high level experiments and research.

Teaching Lab Logistical Deficiencies: Mechanical and civil engineering laboratories are heavy consumers of bulky materials such as metals, woods and plastics which are delivered frequently. The main loading dock is on the first floor of CEB and the current freight elevator opens directly into a primary hands-on teaching lab (metallics) in the basement. All materials must be brought through that lab to other labs adding further safety and security concerns. Interior HVAC ductwork blocks the top three-four feet of the only basement loading door (which also happens to be in the Metallics Lab), rendering it almost useless for oversized deliveries, equipment access, or tall student projects. Metals deliveries arrive on semi-trucks, but exterior loading space in front of this basement door can only accommodate small delivery vehicles.

Pedagogical Deficiencies in Cheney Hall
Technological Deficiencies: The existing Cheney Hall building is unsuitable for today's educational technology. Data infrastructure—including wired and wireless connectivity—are lacking, as are appropriate audio-visual and data facilities. The building's primary and secondary electrical system are original (1967) and do not allow for the equipment associated with today's instruction delivery, particularly MENT and CE which use specialized computer software which require robust computers dedicated to those programs.

Accessibility Deficiencies: Cheney Hall does not meet current ADA requirements and can be restrictive to students with mobility issues.

Interaction Space Deficiencies: Cheney Hall completely lacks the non-classroom spaces that enable t"a robust intellectual experience both inside and outside the classroom" envisioned in the university's values. Spaces for informal student gathering, walk-in computer labs, lounges, collaboration, and study are currently non-existent. There are no spaces for informal and non-instructional interactions.

Building Systems Deficiencies: Cheney Hall's heating, ventilation, and air conditioning systems are of original design and installation. Systems do not meet current energy code and indoor air quality issues are prevalent in the facility. This facility's systems shortcomings have a substantial effect on instruction in the classrooms and laboratory spaces.

Building Conditions Deficiencies
Please see Appendix for the FCS reports for Cheney Hall, CEB and Cadet Hall.

Systems Deficiencies: Systems in both Cheney Hall and CEB are connected to the existing campus fossil fuel generated steam system, which does not align with Washington State's or the campus' decarbonization goals.

Cheney Hall Building Conditions Deficiencies: Cheney Hall was originally completed in 1966 to house the Industrial Arts program. The building is 50 years old. There have been some minor renovations of the building in 2006 and 2016. The balance of the shell and space is of original construction and condition. **The Overall Facility Condition Score for the building is 2.6.** Many of the components are in the Fair-Systems Approaching End of Expected Life Cycles with some at critical level of Needs Improvement;

Limited Functionality.

- Substructure : 2.0
- Shell : 2.3
- The substructure and the shell of the building rank in the category of "good." The roof and windows on the facility are original installation and do not meet current state energy code. The exterior walls and roof are not insulated and affect the utility cost of heating and cooling the building.
- Interiors: 2.8
- Most the interior walls, floors and ceiling are "worn" due to age with ceiling ranking 4 or "poor".
- Services: 3.0

The systems of the building are what show the most decline. While the Plumbing and Electrical are in the "fair" range, the HVAC and Fire Protection components are at the level of 4 and 5 "poor" equipment marginal or "unsatisfactory" system non-functioning or seriously deficient. The building HVAC system does not meet current Washington State energy code and there are reported indoor air quality issues that can only be address by a new ventilation system.
The building has many Americans with Disability Act (ADA) deficits due to the age and the original design. In particular, the elevator does not meet ADA requirements for current square foot or controls location.

Computing and Engineering Building Conditions Deficiencies: CEB was completed in 2005 and soon thereafter lacked any expansion space for program growth. The 2016 Facility Condition Assessment ranks the condition of the facility as "good/excellent" with an **overall 1.6 Facility**

Condition Score. Though CEB's condition score is good, the only space appropriate for the existing MENT and prospective CE programs is in the basement, and that space is substandard for today's high-tech, hands-on engineering learning environments.

2.3 SPACE NEEDS ASSESSMENT

After right-sizing existing program, analyzing existing space proficiencies and deficiencies, and accounting for enrollment growth with a contemporary facility and new CE program, the Engineering Department is currently deficient in:

- Instructional laboratory spaces for high-tech, hands-on applied learning
- Specialized laboratory spaces for faculty, graduate student and industry research
- Specialized laboratory spaces for student clubs and outreach activities
- Flexible open work space with exterior access for project and class extension
- Break-out laboratory classroom with sufficient space for engineering demonstrations
- Meeting rooms for student-student and student-teacher interactions
- Student study spaces and lounge
- Community space suitable for department and community outreach events

Open Work & Community Space (Work Area/Lobby/Demonstration Space)
Open work and community space, the fourth and final bullets above, are currently lacking in CEB and are critical to the success of the Engineering Department. The two functions can share space and are programmed as "Work Area/Lobby/Demonstration". Below are some of the planned uses of this space:

- Double height space with direct access to the outdoors, that can be used for both project work and demonstration, is required for student success. Student projects in MENT and CE can be physically large, occasionally up to ten feet tall. The department does not currently have space to support these projects which has forced them to be housed in inappropriate locations such as labs, and it has also had the unfortunate effect of limiting students' project choices and solutions.

- To support the large number of first generation and transfer students, the department has a tradition of holding capstone events for each of the four degrees and other industry interactive events every quarter. The department's annual STEM-focused career fair is one of the largest in Washington State. No space exists in the current facilities to support these activities at the size of the current department or with increased enrollment.

- An important part of the culture and success of the Engineering Program has been repeated interaction with a wide range of industry partners. The relationships built as part of those interactions generate private support, scholarships, equipment donations, collaborative projects and research opportunities. Space for these interactive events will allow expansion of these relationships. One departmental goal is to be able to serve as a resource to engineering societies in the region to hold events in collaboration with the University.

- Frequent events with many people and objects in this space are anticipated. To accommodate these, the scale of the space both horizontally and vertically must relate to the scale of the event and must also not limit the potential of large or non-stationary student capstone projects.

2.4 SPACE REQUIREMENTS

Program Room List

The program for the Engineering Building project is separated into two primary sections:

1. Engineering Building
2. CEB Renovated Spaces
3. Cheney Hall Renovated Spaces

The following tables compile the spaces that are required by the Engineering Building project program as assignable square footages.

ENGINEERING BUILDING					
SPACE ID	SPACE NAME	OCC.	ASF	QTY.	TOTAL ASF
TEACHING LABS					
1.01	Woodshop	16	2,904	1	2,904
1.02	Metallics and Foundry	22	4,538	1	4,538
1.03	HVAC	8	1,452	1	1,452
1.04	Fluid Power	24	1,815	1	1,815
1.05	Construction	12	1,815	1	1,815
1.06	Construction Engineering	8	1,452	1	1,452
1.07	Transportation & Pavement	8	1,452	1	1,452
1.08	Environmental Engineering	8	1,452	1	1,452
1.09	Fluids/Water Resources Engineering	8	1,452	1	1,452
1.10	Concrete	5	1,452	1	1,452
1.11	Concrete Testing	5	1,089	1	1,089
1.12	Wild Fire	4	726	1	726
1.13	ME/MET Projects Lab	12	1,452	1	1,452
1.14	ME/MET Projects Storage	3	1,452	1	1,452
1.15	Tech Projects Lab	12	1,452	1	1,452
1.16	Tech Projects Storage	3	1,452	1	1,452
1.17	Club Room	12	1,452	1	1,452
1.18	Makers Space Light	10	1,089	1	1,089
1.19	CE Projects Storage	3	1,452	1	1,452
SUBTOTAL TEACHING LABS					31,400
RESEARCH LABS					
2.01	Fluid Power Research	1	363	1	363
2.02	Robotics Research - Small Scale	10	1,452	1	1,452
2.03	Masters Research	8	1,452	1	1,452
SUBTOTAL RESEARCH LABS					3,267
LAB SUPPORT					
3.01	Materials Storage at Loading		300	1	300
3.02	General Building Storage		500	3	1,500
SUBTOTAL LAB SUPPORT					1,800
OFFICES & OFFICE SUPPORT					
4.01	Offices		140	2	280
4.02	Work Area		200	1	200
4.03	Faculty Offices		140	9	1,260
SUBTOTAL OFFICES					1,740
STUDENT COLLABORATION					
5.01	Work Area/Lobby/Demonstration GF		2,500	1	2,500
5.02	Work Area/Lobby/Demonstration L1		900	1	900
5.03	Team Room Small	4	120	9	1,080
5.04	Team Room Medium	8-12	240	5	1,200
5.05	Open Conversation Pre/Post Class		500	3	1,500
SUBTOTAL COLLABORATION					7,180
TOTAL ASF ENGINEERING BUILDING					**45,387**

CEB RENOVATED SPACES					
SPACE ID	SPACE NAME	OCC.	ASF	QTY.	TOTAL ASF
TEACHING LABS					
1.01	ME Thermodynamics/Heat Transfer	10	1,444	1	1,444
1.02	CE Thermodynamics	10	1,444	1	1,444
1.03	Additive Manufacturing	12	2,740	1	2,740
1.03	Sensor, Controls, PLC (combined)	32	3,838	1	3,838
1.04	Materials Science	8	1,359	1	1,359
1.06	Construction Materials	8	2,129	1	2,129
1.07	CAD Lab	33	1,452	1	1,452
SUBTOTAL RENOVATED LABS					14,406
RESEARCH LABS					
2.01	Thermodynamics/Heat Transfer Research	1	422	1	422
2.02	Materials Science Research	1	506	1	506
2.03	Robotics Research - Large Scale	8	1,935	1	1,935
SUBTOTAL RENOVATED LABS					2,863
LAB SUPPORT					
3.01	Lab Storage		400	1	400
SUBTOTAL LAB SUPPORT					400
CLASSROOMS					
4.01	Classroom	32-64	1296	1	1,296
SUBTOTAL CLASSROOMS					1,296
OFFICE & OFFICE SUPPORT					
	ME/CE Shared Dept Space				
5.01	Operations Manager Offices	1	140	2	280
5.02	Secretary Offices	1	140	2	280
5.03	Reception Desk/ Student	1	80	1	80
5.04	Waiting Area	4	120	1	120
5.05	Storage Closet		80	1	80
5.06	Workroom: Mail/Print/Copy		240	1	240
5.07	Faculty Lounge (CEB 318)		335	1	335
5.08	Faculty Conference Room	12	360	1	360
5.09	Faculty Conference Room	24	720	1	720
	Dean's Suite				
5.10	Advising Offices	1	120	2	240
5.11	Waiting Area	4	270	1	270
5.12	Workroom: Print/Copy		120	1	120
5.13	Storage Closet		80	1	80
5.14	Dean's Conference Room	12	360	1	360
	Faculty Offices				
5.15	Faculty Offices (reduce area to typ)	1	140	24	3,360
5.16	ME Tech Library/Flex Space		894	1	894
5.17	CE Open Work Area/Flex Space		450	1	450
5.18	Storage Closet		150	2	300
5.19	Workroom: Print/Copy		120	2	240
SUBTOTAL RENOVATED OFFICES					8,809
STUDENT COLLABORATION					
6.01	Student Lounge (CEB Basement)		1,918	1	1,918
6.02	Student Collaboration (CEB 203)	32	887	1	887
6.03	Team Room Small	6	120	4	480
6.04	Medium Conf Room (CEB 201)	24	766	1	766
SUBTOTAL RENOVATED COLLABORATION					4,051
TOTAL ASF CEB RENOVATION					**31,825**

CHENEY HALL RENOVATED SPACES					
SPACE ID	SPACE NAME	OCC.	ASF	QTY.	TOTAL ASF
TEACHING LABS					
1.01	Composites (CHN 208)	10	981	1	981
SUBTOTAL RENOVATED LABS					981
RESEARCH LABS					
2.01	Plastics/Composites Research (CHN 209)	2	981	1	981
2.02	ME Research (CHN 204)	2	855	1	855
SUBTOTAL RENOVATED LABS					1,836
TOTAL ASF CEB RENOVATION					**2,817**

Room List Summary & Net/Gross Ratio

The table below summarizes the preceding room lists and adds an industry standard net/gross ratio to achieve the total building area.

PROGRAM ELEMENT	AREA (ASF)
ENGINEERING BUILDING	
Teaching Labs	31,400
Research Labs	3,267
Lab Support	1,800
Offices & Office Support	1,740
Collaboration	7,180
Total Engineering Building (ASF)	45,387
Estimated Net/Gross Ratio	55%
Estimated Engineering Building Area (GSF)	**82,522**
CEB Renovated Spaces	
Teaching Labs	14,406
Research Labs	2,863
Classrooms	1,296
Offices & Office Support	8,809
Collaboration	4,051
Total CEB Renovated Space (ASF)	31,425
Estimated Net/Gross Ratio	80%
Estimated CEB Renovated Area (GSF)	**39,281**
Cheney Hall Renovated Spaces	
Teaching Labs	981
Research Labs	1,836
Total CEB Renovated Space (ASF)	2,817
Estimated Net/Gross Ratio	90%
Estimated CEB Renovated Area (GSF)	**3,130**

Ratio consistent with other science buildings

Relationships of Functions

The ideal relationships of teaching, project and research labs to each other was explored in multiple work sessions with the faculty, staff and administration. The process revealed that there were certain labs which have many preferred adjacencies and others which have few or none.

Preferred Adjacencies

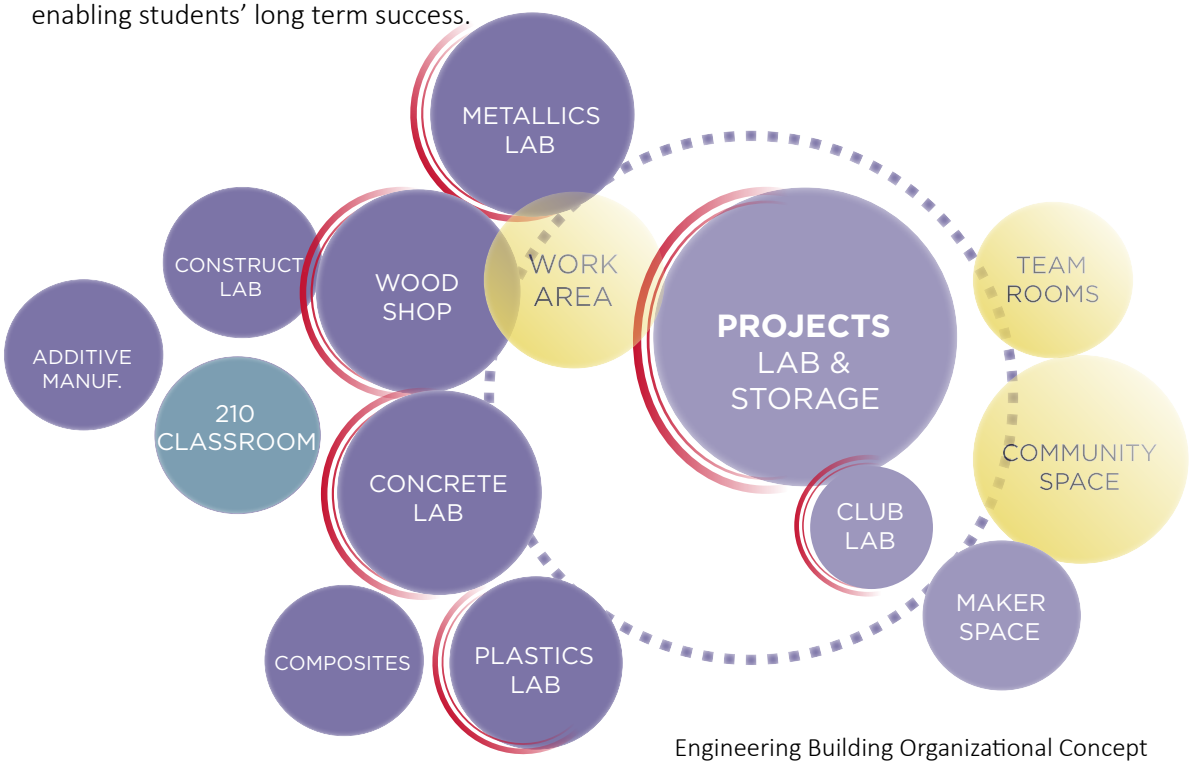
- Wood Shop, Metallics and Plastics are to be adjacent or proximate to each other
- Construction Lab is to be adjacent to Wood Shop
- Additive Manufacturing and Composites are to be proximate to Wood Shop, Metallics and Plastics
- Classroom Laboratory serves and is to be proximate to Wood Shop, Metallics and Plastics
- Work Area should be adjacent to Wood Shop, Metallics and Project Labs
- Project Labs are to be proximate to Wood Shop, Metallics and Plastics
- Project Labs and Project Storage are to be adjacent or proximate to each other
- Student Meeting Rooms (Team Rooms) are to be proximate to Project Labs, Wood Shop, Metallics and Plastics
- Club Lab should be proximate to Wood Shop, Metallics and Plastics
- Club Lab and Maker Space are to be proximate to the building entrance for outreach use
- Concrete Lab and Concrete Testing Lab are to be adjacent or proximate to each other

Other Considerations

- Metallics would prefer a raised loading dock for semi-truck direct access into the lab
- Industry Space and Wood Shop prefer to direct loading into the labs
- Freight elevator is to be easily accessed from Wood Shop, Metallics, Plastics, Project Labs and Work Area
- Concrete Lab and Concrete Testing Lab should have direct access to the exterior

Organizational Concept

Multiple organizational concepts for the Engineering Building were explored with the faculty, staff and administration. The diagram below shows the preferred concept which places students and their projects at its core, surrounded and supported by the labs and spaces that are most vital to enabling students' long term success.



Engineering Building Organizational Concept

2.5 TECHNICAL PROGRAM REQUIREMENTS

Laboratory Room Diagrams and Data Sheets
Detailed preliminary laboratory room diagrams and data sheets are included in the Appendix. These documents provide the detailed program requirements for each type of laboratory space within the Engineering Building project and help to validate the program size for each.

Building Systems Requirements
Building systems requirements are outlined in the description of major systems included in the Project Budget Analysis section of this report.

Circulation
Effective circulation will be an important element in the design of the Engineering Building. Beyond the human occupants of the building, materials will be delivered to the facility including wood, metals, plastics and other supplies, and equipment. In addition to material delivery, the debris and waste generated by laboratory functions must be safely removed on a periodic basis.

Internal building circulation should provide safe pedestrian egress from each individual laboratory and laboratory support space through an uncomplicated path of egress to the building exterior at grade. Features that should be considered in the design of the circulation system include:

- At least one door into each laboratory space should have a minimum 54" wide clear opening. This can be accomplished using openings with one 3'-0" active leaf and one 1'-6" inactive leaf.
- Equipment lists should be carefully reviewed to verify that individual pieces of equipment can be transported and maneuvered between spaces. Future equipment should be anticipated.
- Doorways accessing corridors should open into recessed alcoves serving the corridor. The doors should swing out from laboratories, in the direction of exit.
- Wherever possible, circulation and fume hood locations within laboratory spaces should be coordinated to preclude exiting in front of the fume hoods.
- Clear, unobstructed access to the freight elevator from all labs for movement of materials, equipment and student projects is critical to the functioning of the program.

Interaction
The program should include areas outside of laboratories that provide opportunities for students to study and interact with one another. The majority of EWU students are commuters, so it is vital that new facilities incorporate study spaces and lounge space as well as enhanced technologies to support virtual study.

The building should encourage interaction within each laboratory group, between students, researchers, and faculty, and with the larger campus. This requires that spaces that support interaction be created between laboratories, on each floor, and in public areas of building. Areas for formal and, in particular, informal interaction should be linked to the circulation schemes. Formal interaction spaces should include meeting rooms and lounge areas. Informal interaction spaces should include student study areas, casual meeting spaces for short duration interaction, display/announcement boards, and possibly outdoor gathering spaces.

Meeting rooms (programmed as "Team Rooms") should be incorporated throughout the building that facilitate groups of 4-6 students or groups of 12 for students plus faculty. These are the typical sizes of capstone project groups and engineering study groups.

Accessibility

The principles of universal design should be entirely incorporated to provide an accessible environment to all of its users throughout both the building and the site. Ramps and grading should allow easy access to the building from campus buildings and parking. All spaces within the building should incorporate the ADA guidelines to allow for an easily accessible environment for all of the building occupants. Early consideration should be given to the following accessibility aspects:

- Accessible work stations and fume hoods should be provided in the laboratories based on code requirements.
- Location of accessible work stations should be as close as possible to eyewashes and safety showers.
- An 18" clearance on the pull side and 12" clearance on the push side of doors opposite the hinged side is required.

Some guidelines for accessible work stations in laboratories include:

- Work surfaces 30"- 34" above floor with wheelchair clearance below. Adjustable work surfaces can provide a range of possible height adjustments.
- Laboratory service controls, equipment, and equipment controls within easy reach for persons with limited mobility. Controls should have single-action levers or blade handles for easy operation.
- Aisle widths and clearances adequate for maneuvers of wheelchair bound individuals. Aisles 5'-0" wide are recommended with turnaround areas.

Vibration Control

Some of the engineering equipment that will be used in the Engineering Building is sensitive to vibration, and some equipment creates excessive vibration. The building structure should be designed to moderate vibration to acceptable levels. Care should be taken to locate vibration creating engineering equipment where it has the least impact on other laboratories. Labs and support spaces will be designed to satisfy floor vibration criteria of VC-A (2,000 micro-in/sec. at 75 steps/min). This vibration criteria is appropriate for optical balances and microscopes up to 400x magnification, which are common in many labs. Classroom and office areas will be designed to meet the standard criteria of 0.5% g (g = force of gravity).

Air handling equipment and ductwork should be designed to minimize vibration. Supply and exhaust air fans, compressors, pumps and other noise and vibration producing equipment should be located in mechanical rooms with protective wall and floor construction. Equipment shall be isolated from supporting structure with resilient mounts. Vibration isolators should be selected based on floor stiffness, span extension, equipment power and operating speed.

Building Management Systems

The Engineering Building should be provided with a micro-processor based direct digital control building automation/energy management system. This system should provide environmental and energy management controls in all spaces and monitoring of the laboratory controls. All data from the energy management system should report into the existing campus energy management control system to allow for reporting of space and system status, reporting of alarms, scheduling of preventative maintenance functions, and trending of data for energy conservation purposes.

Monitoring of critical parameters of the ventilation system will be important for safe operation and effective maintenance and management of the building. Status of HVAC operations for laboratories, fume hoods, and other critical spaces, should be reported and alarmed when outside of established operational criteria.

Besides providing a high level of control and functionality in an integrated building control system, it is also desirable to have the capability of remote data reporting on consumption gas, potable domestic water, domestic hot water, low temperature heating water, chilled water, steam, building electrical service, 208V and 460V HVAC equipment (fans, pumps, and other equipment) electrical energy use, lighting electrical energy use, electric vehicle charging energy use, plug load energy use, and on-site renewable energy generation as required by the energy code and for use by the engineering courses.

Technology Infrastructure

Spaces in the new engineering building should be flexibly designed to support changing technologies and dynamic laboratory environments. Teaching laboratories should feature the latest technological tools to support teaching goals and engineering demonstrations. Technology infrastructure should be designed to meet the current needs of each lab space, while remaining flexible enough to accommodate future potential changes to lab equipment and lab functions. All labs are to have overhead services. Wireless Internet access should be provided throughout the building.

2.6 FUTURE REQUIREMENTS

Design to Adapt to Changes

Planning a building that can adapt to change is particularly important and challenging when designing engineering buildings because they both need to keep up with technological advancement in the field and are laden with significant scientific and safety equipment. The design of an engineering facility also commences so far in advance of actual construction that the design team must emphasize flexibility in all aspects of the project to accommodate potential pedagogical shifts. Measures to accommodate change may include:

- Planning the structural layout such that partitions can easily be deconstructed or relocated to create larger or smaller spaces as needed.
- Providing adequate floor to floor heights to accommodate future increases in ventilation requirements due to future unforeseen equipment needs.
- Avoiding the use of systems that are difficult to modify or work with.
- Selection of building systems that require little and easy maintenance and are easily accessible and adaptable.
- Selection of moveable furniture and equipment that can be easily stored.

3.0 ANALYSIS OF ALTERNATIVES

3.1 DESCRIPTIONS OF ALTERNATIVES

3.2 SUMMARY OF ALTERNATIVES

3.3 LIFE CYCLE COST OF ALTERNATIVES

3.1 DESCRIPTIONS OF ALTERNATIVES

Alternative I: Preferred Alternate - New Engineering Building on the Existing Campus
Satisfaction of the program requirements can readily be achieved through construction of a new building on the Cheney campus providing the contemporary, pedagogically appropriate facilities needed to flexibly serve multiple hands-on degree programs including the existing MENT and prospective CE programs. It will improve the quality and safety of laboratories, increase faculty research opportunities, support community and prospective student outreach activities, and encourage student engagement with each other and the regional engineering industry.

The new structure will be designed to provide desired health, safety and functionality without compromise. The new building will connect to CEB, taking advantage of CEB's strengths, creating efficiencies such as shared departmental and instructional resources, direct access to faculty and administrative offices, and shared student amenities. The building will be a student centered environment that provides a high quality engineering teaching and research environment that is responsive to the needs of engineering education and the engineering industry.

Alternative II: Renovation of Existing Engineering Facilities
An alternative for addressing the deficiencies of the existing facilities would be a major renovation of CEB and Cheney Hall. The alternative falls short in serious ways: it is not only similar in cost to a new building, it results in substandard teaching and research laboratories and continued operational and systems inefficiencies, and it eliminates eight good quality, general use classrooms and two computer labs. Additional costs would be incurred to relocate the entire Engineering Department and others from both buildings during construction.

CEB was completed in 2005, is currently in good condition for its primary purpose as a classroom, computer lab and office building. However, the existing structure and systems of CEB are not compatible with the needs of engineering education. The ventilation demands and laboratory support systems in a engineering facility require above-average floor-to-floor heights that allow clear ceiling space for large duct work and laboratory plumbing and electrical systems. The existing CEB mechanical, engineering and plumbing systems are suited only for office, classroom and computer lab space. They are not adequate for engineering and cannot be made so without substantial demolition and reconstruction of the superstructure. Resulting labs would still be substandard in size and quality due to restricted dimensions and existing low ceiling heights.

Cheney Hall was completed in 1966 and many of the components are approaching end of expected life cycles. It currently houses a portion of the athletics department and swing space for the sciences. Both buildings do not meet current ADA, structural and energy codes.

Alternative III: No Action
The consequences of taking no action would be a negative impact on EWU students, the engineering programs, the University, the region, and the State. No action would maintain substandard, pedagogically inappropriate facilities and makes it impossible for EWU to offer new, high-demand STEM degree programs such as civil engineering. Student success in EWU's engineering programs could not be ensured. The result would be that EWU would not be able to produce more graduates in high demand engineering professions and this would undermine the policies of the Washington Student Achievement Council and the Office of Financial Management.

Additionally, the current Engineering Building would continue to have significant deficiencies in building systems, technology, student spaces and general quality. The current facilities would also continue to experience high maintenance and repair costs, which if deferred will result in facilities that are not capable of supporting even the current student load.

3.2 SUMMARY OF ALTERNATIVES

The following table compares the alternatives:

	Alternative I: ***Preferred Alternate*** New Engineering Building on the Existing Campus	**Alternative II:** Renovation of Existing Engineering Facilities	**Alternative III:** No Action
Description	Design and construction of a new engineering building and targeted renovation of existing space in CEB and Cheney Hall to provide contemporary, pedagogically appropriate facilities.	Major renovation to existing facilities, including both CEB and Cheney Hall to provide contemporary, pedagogically appropriate facilities for the engineering programs where suitable.	No action taken.
Advantages	- Provides sufficient high quality teaching laboratories to flexibly serve multiple degree programs over time. - Provides state-of-the-art engineering research facilities for faculty and industry collaboration - Direct connection to CEB takes advantage of CEB's strengths, creating efficiencies such as shared instructional resources, direct access to faculty and administrative offices, and shared student amenities.	- Reuses some of the existing infrastructure. - Cheney Hall is due for some systems and finishes upgrades. - No demolition of Cadet Hall or relocation of its program elsewhere on campus.	- No demolition of Cadet Hall or relocation of its program elsewhere on campus.
Disadvantages	- Demolition of Cadet Hall and relocation of its program elsewhere on campus.	- Majority of CEB's facilities are in good condition for their intended use as classrooms and offices. - Upgrading mechanical systems for lab use requires substantial demolition and reconstruction. - 8 good quality general use classrooms and 2 good quality computer labs in CEB would be eliminated. - Resulting labs would still be substandard in size and quality due to restricted dimensions and existing low ceiling heights. - Additional costs will be incurred to relocate occupants during construction.	- EWU's engineering programs would maintain substandard, pedagogically inappropriate facilities. - EWU will not be able to offer new, high-demand STEM degree programs such as civil engineering. - Student success in EWU's undergraduate engineering programs is not ensured. - EWU would not be able to produce more graduates in high demand engineering professions undermining the policies of the Washington Student Achievement Council and the Office of Financial Management.
Project Costs	$127,985,272	$127,403,050	$0
Construction Schedule	Start: July 2027 Midpoint: November 2028 Completion: February 2030	Start: July 2027 Midpoint: December 2028 Completion: April 2030	No Construction

3.3 LIFE CYCLE COST MODELS OF ALTERNATIVES

Project and Existing Facility Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Agency**	Eastern Washington University
*	**Project Title**	Engineering Building
*	**Date of Analysis:**	**7/1/2024**
	Analysis Period	
*	Years of Analysis (If not 30 or 50)	

Existing Facility Description	The existing Computing and Engineering Building (CEB) includes sub-standard facilities for mechanical engineering and makes it impossible for EWU to offer new, high-demand STEM degree programs such as civil engineering.

	Existing Lease Information	**Lease 1**	**Lease 2**	**Lease 3**	**Lease 4**	**Lease 5**	**Lease 6**	**Total**
	Existing Square Feet							-
	Lease Start Date / Last Lease Increase							
	Lease End Date							
	Lease Rate per Month							$ -
	Lease Rate per SF per Year at End Date							
	Additional Operating Costs per Month	$ -						$ -
	Total Lease Costs per Month							$ -
*	Persons Relocating							-
	SF per Person Calculated							
	Estimated Lease Renewal Rate - 5 Year							$ -

Life Cycle Cost Analysis - Project Summary

Agency	Eastern Washington University
Project Title	Engineering Building
Existing Description	The existing Computing and Engineering Building (CEB) includes sub-standard facilities for mechanical engineering and makes it impossible for EWU to offer new, high-demand STEM degree programs such as civil engineering.
Lease Option 1 Description	#REF!
Lease Option 2 Description	#REF!
Ownership Option 1 Description	Alternative I (Preferred Option): New Engineering Building connected to the existing Computing and Engineering Building (CEB). Includes 82,522 gsf of new addition and 42,411 gsf of renovation across two existing buildings - CEB and Cheney Hall.
Ownership Option 2 Description	Alternative II: Full renovation across two existing facilities - includes Computing and Engineering Building (CEB) and Cheney Hall.
Ownership Option 3 Description	Alternative III: No Action

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	#REF!	#REF!
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	$ -	$ -
Occupancy Date	n/a	#REF!	#REF!
Project Initial Costs	n/a		
Persons Relocating	-	#REF!	#REF!
RSF/Person Calculated		#REF!	#REF!

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	124,933	125,669	-
Total Rentable Square Feet	79,629	100,535	-
Occupancy Date	4/1/2030	6/1/2030	
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 1,216	$ 1,183	#REF!
RSF/Person Calculated	-	#REF!	#REF!

Ownership Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Alternative I (Preferred Option): New Engineering Building connected to the existing Computing and Engineering Building (CEB). Includes 82,522 gsf of new addition and 42,411 gsf of renovation across two existing buildings - CEB and Cheney Hall.
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	124,933
*	Usable Sq Ft	79,629
	Space Efficiency	64%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$744.09
	Estimated Total Project Costs per Sq Ft	$1,034.44
	Escalated MACC Cost per Sq Ft	$874.69
	Escalated Total Project Costs per Sq Ft	$1,216.00

*	**Move In Date**	4/1/2030

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	**Estimated Costs**	**Cost to Use**
	Acquisition Costs Total	$ -	$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.26% Std	5.26%
	Pre-Schematic Design services			
	Construction Documents	$ 4,447,218		
	Extra Services	$ 2,369,441		
	Other Services	$ 2,270,317		
	Design Services Contingency	$ 482,408		
	Consultant Services Total	$ 9,569,384	$ 6,814,954	$ 9,569,384
MACC	**Construction Contracts**			
	Site Work	$ 4,965,332		
	Related Project Costs	$ 2,348,869		
	Facility Construction	$ 85,647,039		
	MACC SubTotal	$ 92,961,240	$ 45,210,754	$ 92,961,240
	Construction Contingency (5% default)	$ 5,240,898	$ 4,648,062	$ 5,240,898
	Non Taxable Items			$ -
	Sales Tax	$ 8,740,057	#REF!	$ 8,740,057
	Construction Additional Items Total	$ 13,980,955	#REF!	$ 13,980,955
	Equipment			
	Equipment	$ 5,880,300		
	Non Taxable Items	$ -		
	Sales Tax	$ 523,347		
	Equipment Total	$ 6,403,647		$ 6,403,647
	Art Work Total	$ 636,743	$ 464,806	$ 636,743
	Other Costs			
	Other Costs Total	$ -		$ -
	Project Management Total	$ 4,433,304		$ 4,433,304
	Grand Total Project Cost	**$ 127,985,273**	**#REF!**	**$ 129,235,273**

Ownership Option 1 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies		$ -	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2030	Estimated Cost /GSF/ 2030	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ -	$ 1.24	$ 155,399	$ 12,950
☑	Janitorial Services	$ -	$ 1.82	$ 227,818	$ 18,985
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 0.47	$ 58,840	$ 4,903
☑	Grounds	$ -	$ 0.07	$ 9,052	$ 754
☑	Pest Control	$ -	$ 0.12	$ 15,087	$ 1,257
☑	Security	$ -	$ 0.12	$ 15,087	$ 1,257
☑	Maintenance and Repair	$ -	$ 7.16	$ 894,677	$ 74,556
☑	Management	$ -	$ 1.07	$ 134,277	$ 11,190
☑	Road Clearance	$ -	$ 0.17	$ 21,122	$ 1,760
☑	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ 12.26**	**$ 1,531,361**	**$ 127,613**

Ownership Option 2 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Alternative II: Full renovation across two existing facilities - includes Computing and Engineering Building (CEB) and Cheney Hall.
*	**Construction or Purchase/Remodel**	Purchase/Remodel
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	125,669
*	Usable Sq Ft	100,535
	Space Efficiency	80%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$694.65
	Estimated Total Project Costs per Sq Ft	$1,006.72
	Escalated MACC Cost per Sq Ft	$816.57
	Escalated Total Project Costs per Sq Ft	$1,183.41

*	**Move In Date**	6/1/2030

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	**Estimated Costs**	**Cost to Use**
	Acquisition Costs Total		$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
A & E	A & E Fee Percentage (if services not specified)	69.00%	7.33% Std	69.00%
A & E	Pre-Schematic Design services	$ -		
A & E	Construction Documents	$ 6,181,053		
A & E	Extra Services	$ 2,024,070		
A & E	Other Services	$ 3,121,785		
A & E	Design Services Contingency	$ 1,202,627		
A & E	**Consultant Services Total**	$ 12,529,535	$ 6,399,592	$ 12,529,535
	Construction Contracts			
MACC	Site Work	$ 729,859		
MACC	Related Project Costs			
MACC	Facility Construction	$ 86,565,520		
MACC	**MACC SubTotal**	$ 87,295,379	$ 45,477,098	$ 87,295,379
	Construction Contingency (5% default)	$ 8,733,003	$ 8,733,003	$ 8,733,003
	Non Taxable Items			$ -
	Sales Tax	$ 8,546,588	#REF!	$ 8,546,588
	Construction Additional Items Total	$ 17,279,591	$ 17,279,591	$ 17,279,591
	Equipment			
	Equipment	$ 2,600,000		
	Non Taxable Items			
	Sales Tax	$ 421,861		
	Equipment Total	$ 3,021,861		$ 3,021,861
	Art Work Total	$ 633,846	$ 436,477	$ 633,846
	Other Costs			
	Other Costs Total	$ -		$ -
	Project Management Total	$ 4,502,828		$ 4,502,828
	Grand Total Project Cost		**$ 70,842,757**	**$ 126,513,040**

Ownership Option 2 Information Sheet

*	*Requires a user input*	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies		$ -	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2030	Estimated Cost /GSF/ 2030	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ -	$ 1.24	$ 156,315	$ 13,026
☑	**Janitorial Services**	$ -	$ 1.82	$ 229,160	$ 19,097
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 0.47	$ 59,187	$ 4,932
☑	**Grounds**	$ -	$ 0.07	$ 9,106	$ 759
☑	**Pest Control**	$ -	$ 0.12	$ 15,176	$ 1,265
☑	**Security**	$ -	$ 0.12	$ 15,176	$ 1,265
☑	**Maintenance and Repair**	$ -	$ 7.16	$ 899,948	$ 74,996
☑	**Management**	$ -	$ 1.07	$ 135,068	$ 11,256
☑	**Road Clearance**	$ -	$ 0.17	$ 21,247	$ 1,771
☑	**Telecom**	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ 12.26**	**$ 1,540,383**	**$ 128,365**

Ownership Option 3 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Alternative III: No Action
*	**Construction or Purchase/Remodel**	
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	-
*	Usable Sq Ft	-
	Space Efficiency	
	Estimated Acres Needed	-
	MACC Cost per Sq Ft	$0.00
	Estimated Total Project Costs per Sq Ft	#REF!
	Escalated MACC Cost per Sq Ft	$0.00
	Escalated Total Project Costs per Sq Ft	#REF!

*	**Move In Date**	

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	**Estimated Costs**	**Cost to Use**
	Acquisition Costs Total	$ -	$ -	$ -
A & E	**Consultant Services**			
A & E	A & E Fee Percentage (if services not specified)	0.00%	12.5% Std	12.50%
A & E	Pre-Schematic Design services	$ -		
A & E	Construction Documents			
A & E	Extra Services			
A & E	Other Services			
A & E	Design Services Contingency			
A & E	**Consultant Services Total**	$ -	$ -	$ -
MACC	**Construction Contracts**			
MACC	Site Work			
MACC	Related Project Costs			
MACC	Facility Construction			
MACC	**MACC SubTotal**	$ -	$ -	$ -
	Construction Contingency (5% default)		$ -	$ -
	Non Taxable Items			$ -
	Sales Tax		#REF!	#REF!
	Construction Additional Items Total	$ -	#REF!	#REF!
	Equipment			
	Equipment			
	Non Taxable Items			
	Sales Tax			
	Equipment Total	$ -		$ -
	Art Work Total		$ -	$ -
	Other Costs			
	Other Costs Total	$ -		$ -
	Project Management Total			$ -
	Grand Total Project Cost		**#REF!**	**#REF!**

Ownership Option 3 Information Sheet

*	*Requires a user input*	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies			*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ Year	Estimated Cost /GSF/ Year	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ -	$ -	$ -	$ -
☑	**Janitorial Services**	$ -	$ -	$ -	$ -
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ -	$ -	$ -
☑	**Grounds**	$ -	$ -	$ -	$ -
☑	**Pest Control**	$ -	$ -	$ -	$ -
☑	**Security**	$ -	$ -	$ -	$ -
☑	**Maintenance and Repair**	$ -	$ -	$ -	$ -
☑	**Management**	$ -	$ -	$ -	$ -
☑	**Road Clearance**	$ -	$ -	$ -	$ -
☑	**Telecom**	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ -**	**$ -**	**$ -**

Financial Assumptions

Date of Life Cycle Cost Analysis:	7/1/2024
Analysis Period Start Date	#REF!
User Input Years of Analysis	0

All assumptions subject to change to reflect updated costs and conditions.

	Lease Options			Ownership Option 1		
	Existing Lease	**Lease Option 1**	**Lease Option 2**	**GO Bond**	**COP**	**63-20**
Inflation / Interest Rate	2.732%	2.732%	2.732%	3.420%	3.570%	3.670%
Discount Rate	0.816%	0.816%	0.816%	0.816%	0.816%	0.816%
Length of Financing	N/A	N/A	N/A	25	25	25

Ownership Option 2			Ownership Option 3		
GO Bond	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**
3.420%	3.570%	3.670%	#REF!	#REF!	#REF!
0.816%	0.816%	0.816%	0.816%	0.816%	0.816%
25	25	25	25	#REF!	#REF!

See Financial Assumptions tab for more detailed information

COP Deferred and 63-20 Financing defer the payment on principle until construction completion.

New Lease Assumptions

Real Estate Transaction fees are 2.5% of the lease for the first 5 years and 1.25% for each year thereafter in the initial term of the lease.

Tenant Improvements are typically estimated at $19 per rentable square foot.

IT infrastructure is typically estimated at $1500 per person.

Furniture costs are typically estimated at $7000 per person and do not include new workstations.

Moving Vendor and Supplies are typically estimated at $300 per person.

Default Ownership Options Assumptions

Assumes a 2 month lease to move-in overlap period for outfitting building and relocation.

Assumes surface parking.

The floor plate of the construction option office building is 25,000 gross square feet.

The estimated total project cost for construction is $506.63 per square foot.

See the Capital Construction Defaults tab for more construction assumptions.

4.0 SITE ANALYSIS

4.1 SITE OPTIONS

4.2 CAMPUS RELATIONS

4.3 SITE EVALUATION - PHYSICAL ISSUES

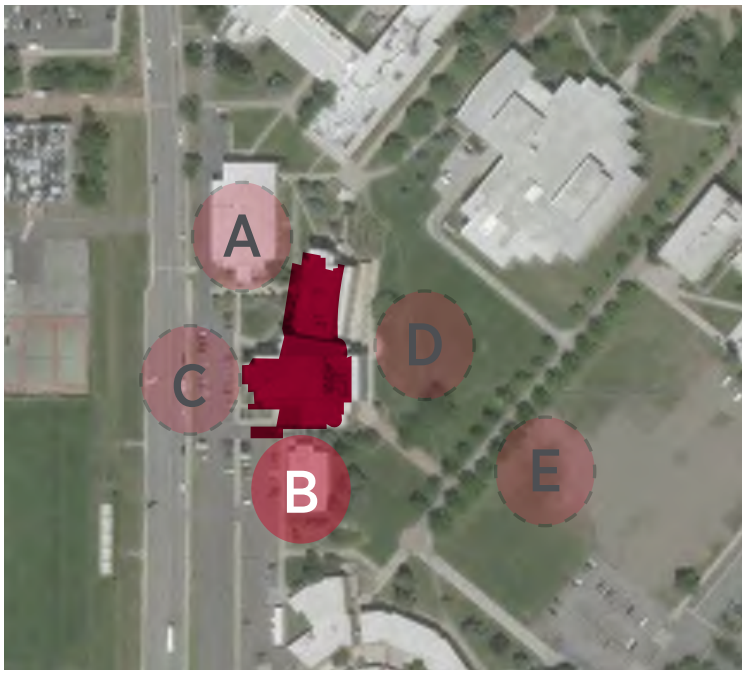
4.4 SITE EVALUATION - REGULATORY ISSUES

4.5 SITE EVALUATION - ACCESS ISSUES

4.6 SITE SELECTION

4.1 SITE OPTIONS

Five candidate sites on the Cheney campus were initially identified to determine a preferred site for the Engineering Building. The predesign process highlighted that locating the Engineering Building immediately adjacent to CEB for the purposes of sharing resources and encouraging interaction between engineering disciplines was very important. This intention remained intact through studies of several options for the location of the Engineering Building. Ultimately, three sites adjacent to CEB were selected as alternatives worth studying for the Engineering Building.



- Site A: Cheney Hall
- Site B: Cadet Hall
- Site C: Parking Lot 3
- Site D: Engineering Hall
- Site E: Reid Hall

Evaluation of all the sites included consideration of numerous issues and those are illustrated in the table on the next page. Key factors in the site selection were appropriate area available, proximity and possible connections to the existing CEB, increasing proximity to Washington Street for greater visibility to industry and community, connections to campus pedestrian and ADA circulation, and disruption to existing buildings and landscape. Topography, solar orientation, access to utilities, service access, disruption to existing parking and future campus expansion were also considered.

See 3.6 in this section for more detail on the three sites which were chosen for further study. Site A: Cheney Hall and Site C: Parking Lot 3 were studied because of their favorable campus locations and high criteria score. These sites were not chosen because their potential connections to CEB were less favorable. Cheney Hall would be challenging to demolish as it would interrupt other University programs which also share space in the building and because of possible future uses, such as swing space for other University facilities projects.

The predesign study concluded that Site B: Cadet Hall, which is located immediately south of the existing CEB and east of Washington Street, is the most appropriate site for the new engineering building. It best meets the criteria and responds to EWU's 2014 Master Plan Goals of connecting to the larger community and enhancing open space. It has the most favorable adjacency to CEB and its location allows for new "front doors" for Engineering on Washington Street and the Engineering Lawn. This site is located within the boundaries of the Eastern Washington University's Cheney campus and is owned by the State of Washington. The site contains adequate available area that a building on the site will comply with all easement and setback requirements set forth by the University.

Rating:
'3' = Significant Advantage
'0' = Significant Disadvantage
Weighing Factor:
'5' = Most Important
'1' = Least important

		Site Options									
		A		B		C		D		E	
		Cheney Hall		Cadet Hall		Parking Lot 3		Engineering Lawn		Reid Hall	
Evaluation Criteria	Weight Factor	Rating	Weight Value	Rating	Weight Value	Rating	Weight Value	Rating	Weight Value	Rating	Weight Value
Appropriate available area	5	2	10	2	10	3	15	3	15	3	15
Proximity to CEB	5	3	15	3	15	3	15	3	15	0	0
Increase engineering presence, new 'front door'	5	3	15	3	15	2	10	1	5	0	0
Increase visibility with industry and community	5	3	15	3	15	3	15	0	0	0	0
Connection to campus circulation	5	3	15	2	10	2	10	3	15	1	5
Ease of service access	4	2	8	3	12	3	12	1	4	2	8
Favorable site topography	3	3	9	3	9	3	9	1	3	3	9
Favorable solar orientation	3	1	3	1	3	3	9	2	6	3	9
Located within academic core	3	3	9	3	9	2	6	3	9	1	3
Connection to future development	2	3	6	3	6	1	2	3	6	2	4
Impact of disruption to existing building(s)	2	0	0	2	4	3	6	3	6	3	6
Utilities availability/rerouting	2	3	6	3	6	3	6	2	4	2	4
Allows future engineering growth	2	0	0	2	4	1	2	1	2	3	6
Disruption to existing parking	1	2	2	0	0	0	0	3	3	3	3
Total			88		93		87		63		57

Please note that the scores under “Impact of Disruption to Existing Buildings” represents the relative disruption at a University level: disruption of Site A Cheney Hall will have far more impact at a University level than disruption of Sites B-E.

Cheney Hall (~30,000gsf) currently contains program for multiple departments, making the functions more difficult to replace. In the short and long term it is also considered good swing space, especially for the sciences given its existing lab amenities. Cadet Hall (~10,000gsf) currently contains non-technical program that could be housed in a variety of spaces on campus. See 4.3 in this section for further description of Cadet Hall.

4.2 CAMPUS RELATIONS

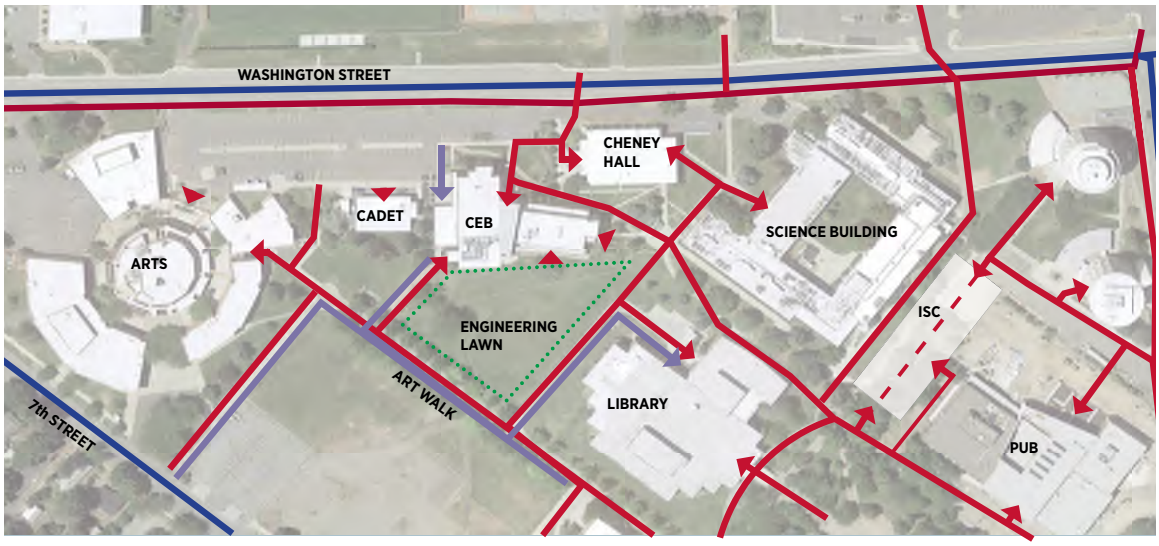
Campus Organization

EWU's Cheney campus is currently organized around two major pedestrian circulation routes, the "Art Walk" and the "Campus Mall", and 2 major open spaces, the Campus Quad and the Engineering Lawn. The site options B, D and E are located adjacent to the main circulation route "Art Walk". The informal open lawn area adjacent to the Art Walk has been identified as the "Engineering Lawn".

Campus Circulation and Open space

The major open spaces on campus each have a unique character that is beneficial for a diversity of uses. The Engineering Lawn area represents the largest open lawn area on the campus and is used by students for informal activities such as playing frisbee, however, the space lacks definition at the edges and is not fully integrated into campus life because of the lack of destinations around it. The major open spaces are supplemented by a large number of smaller open spaces, giving the campus a park-like feel.

The major campus circulation routes are supplemented by minor routes that link into the surrounding city grid. Building entries are generally grouped around open spaces and major pedestrian routes. There are no primary building entries to CEB currently fronting on the Engineering Lawn open space. Secondary entrances to CEB front the engineering lawn or the Science Building and are often used by students more than the primary CEB entrance which faces Washington Street.

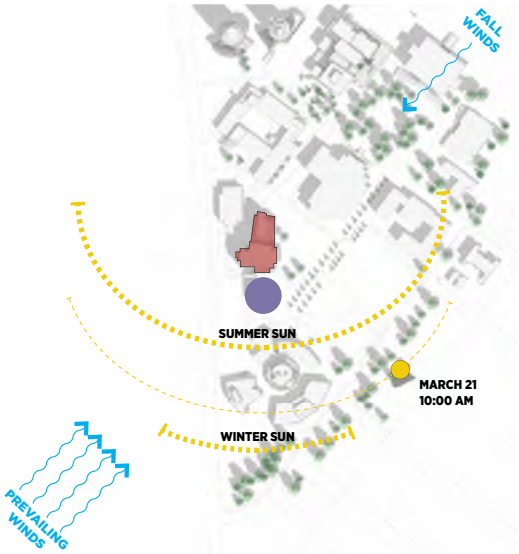


Campus Circulation Diagram

4.3 SITE EVALUATION - PHYSICAL ISSUES

Climate/ Solar Orientation

The preferred site for the Engineering Building site will require access to daylight. To optimize solar exposure and reduce unwanted glare and heat-gain, the ideal site orientation for a building in this climate will require the building to be oriented in an east-west manner. The building will be designed to allow daylight to penetrate into the building for access to the public spaces and common areas, while the light in the labs will be controlled. Building fenestration will be designed with consideration to the overall site and building orientation. Any future nearby development should be kept to three stories to maintain solar access for the Engineering Building.



Preferred Engineering Building Site Solar and Wind Orientation

Water Rights & Availability

Eastern Washington University (EWU) provides drinking water from two drilled wells, both of which draw from a groundwater aquifer. Well 1R is located in the Plant Utilities building and can pump up to 450 gallons per minute at a depth of 834 feet. Well 2R produces 900 gallons per minute at a depth of 1145 feet. Chlorination of the campus water supply began in 2010. Since 2016, water from both wells has been routed through a new chlorine building for treatment before being distributed throughout campus via the tower. To ensure the safety of the tap water, backflow assemblies are installed through the campus to protect the water system. Two Cross Connection Control Specialists and three Backflow Assembly Testers, employed by the university, conduct tests on all assemblies annually and perform any necessary repairs or replacements.

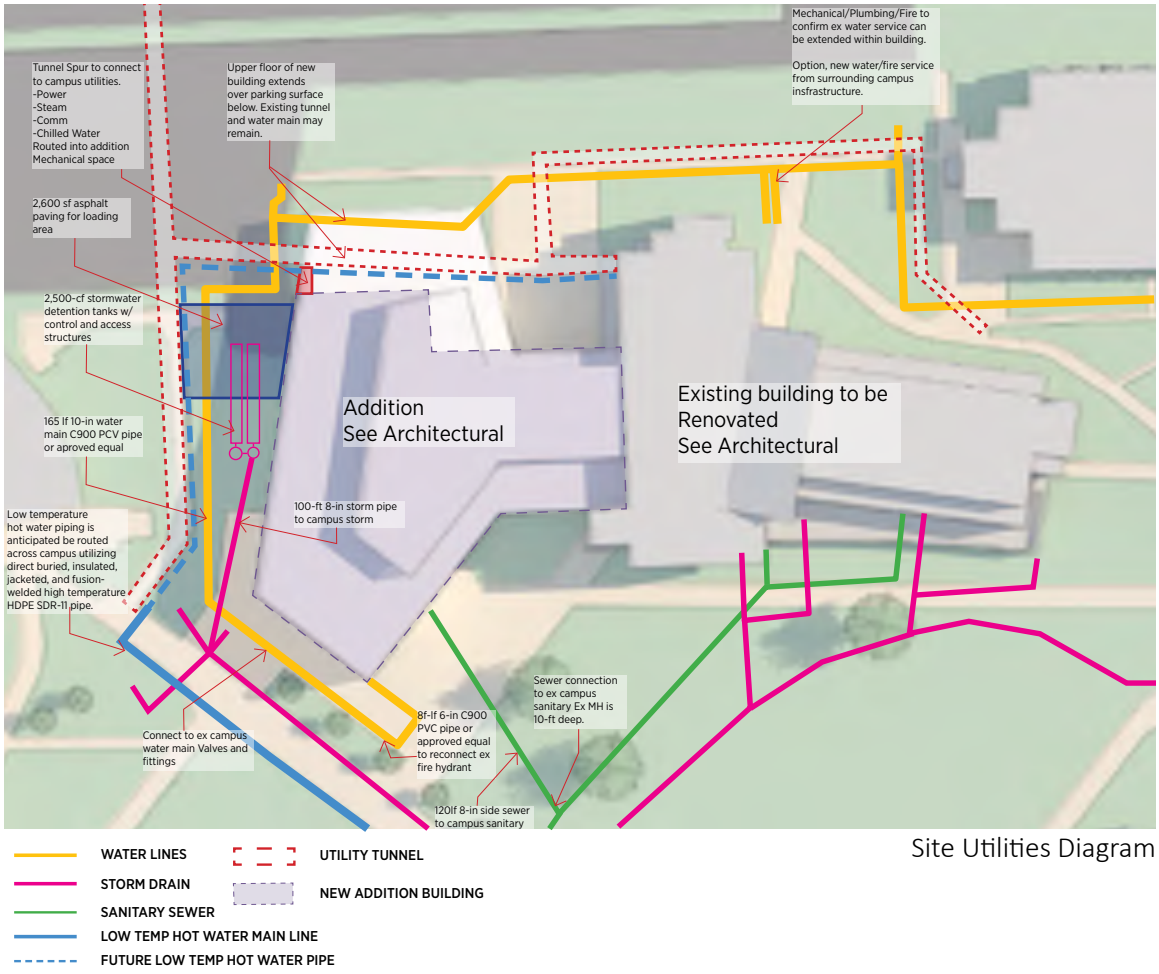
A report is submitted to the Department of Health each year. EWU's water meets or exceeds all standards set for quality and safety and is committed to providing safe, high-quality water. EWU's annual drinking water report can be found at https://inside.ewu.edu/facilities/water/.

Stormwater Requirements

The University's stormwater system drains to the City of Cheney's street storm system, and this new engineering building will conform to the City's development manual which specifies stormwater design standards. Stormwater that runs off the vehicular service drives will be treated by a biofiltration swale system adjacent to the drive that will feed into a detention system.

Geotechnical and Environmental Conditions

Historical geotechnical reports for CEB and the JFK Library were reviewed in order to gain a



Site Utilities Diagram

preliminary understanding of subsurface conditions in the area of campus near the candidate sites. Those geotechnical reports show that subgrade soils are generally comprised of soft to medium stiff clayey soils underlain by basalt bedrock. Pilings or geopiers supported on the basalt bedrock are generally recommended for foundations. Perched groundwater is found at various depths, sometimes near the surface, and will likely require a building to be equipped with sub-floor and perimeter drainage with collected water pumped to a disposal system or to a cistern for reuse in landscape irrigation. Since a preliminary geotechnical report on the site is beyond the reach of this predesign study, it is not possible to conclude that any of the alternatives would provide superior foundation and/or drainage conditions.

Utility Extension

The campus tunnel system runs beneath the preferred site and currently provides direct access to steam, chilled water, telecommunications and electricity to the project. Water, sanitary sewer, storm drainage, and natural gas are separate, direct-buried utilities and are accessible to all sites. Low temperature heating water will be generated by a new open-source ground coupled heat pump heating plant. The plant is being planned as a separate project. Low temperature hot water piping is anticipated be routed across campus utilizing direct buried, insulated, jacketed, and fusion-welded high temperature HDPE SDR-11 pipe.

Energy Conservation

Factors that may affect energy conservation in any of the site alternatives are:

- Solar orientation, both for daylighting of interior spaces and laboratories
- Adjacency to the campus tunnel system, which would allow the use of centrally generated

steam, chilled water, and direct buried low temperature heating water
- Consolidation of energy intensive lab/shop spaces into the new addition, whose processes require large amounts of fresh air and exhaust, will allow for sustainable, energy efficient solutions that cannot be accommodated within the existing facilities due to practical spatial restraints

Hazardous Materials Inventory
Cadet Hall will be evaluated for hazardous materials and all abatement completed prior to the start of any demolition work.

Buildings Affected by Work
The demolition of Cadet Hall (~10,000gsf) and related site work is also included in the project scope. Built in 1955, Cadet Hall has major infrastructure issues and, if retained, a major upgrade to this building infrastructure will be needed in the future. The building is one of the smaller buildings on campus and the building's size and current organization does not allow for other University uses in the long term. The Cadet Hall site is an excellent location on campus for campus growth.

The ROTC program currently occupies Cadet Hall. EWU's Facilities and Planning feels that it is more advantageous to move the ROTC program to a new location and keep the Engineering Building in close proximity to CEB. EWU Administration has been advised that the Cadet Hall site is a high priority location and relocation of the ROTC program has not currently been a concern given that there are adequate or better spaces to house them on campus. The functions of Cadet Hall could relocate to Cheney Hall in either the short or the long term. Cheney Hall will have immediate vacancies due to the current use as science swing space. Relocation of the existing ROTC program will be carefully managed by the university.

4.4 SITE EVALUATION - REGULATORY & NEIGHBORHOOD ISSUES

Property Setback Requirements
The project site is situated within the existing campus and faces Washington Street to the east. Washington Street is classified by WSDOT as a Major Collector. The project will adhere to the setbacks specified by the City of Cheney and the building separation requirements of the current building code.

Neighborhood
No potential issues with the surrounding neighborhood during construction or ongoing are expected or have been identified.

Zoning and Local Requirements
Zoning and local land use regulations are not expected to significantly affect the preferred site. The City of Cheney designates the campus of Eastern Washington University as a unique zone called "P" (Public). The Cheney Zoning Code has no specific restrictions on the use of property within a P zone.

Environmental Impacts
All sites are compatible with SEPA and LEED® requirements. There are no known environmentally sensitive conditions. Wetlands, shorelines, flood zones, endangered species, and contaminated soils are not present at the site.

Building Code Requirements
The International Building Code as amended by the State of Washington has been adopted by the

City of Cheney and will govern the design and construction of the Engineering Building. Building code requirements are not expected to rule out or have a profound impact on the use of any proposed alternatives.

Other Regulatory Requirements
No other regulatory requirements are expected or have been identified.

4.5 SITE EVALUATION - PARKING & ACCESS ISSUES

Parking
No parking issues are expected or have been identified. Parking at EWU is provided on a campus wide basis, with assigned surface parking lots and on-street parking. Parking is not specifically provided for individual buildings. The Parking Lot 3 area adjacent to CEB will be effected by all options and the loss of parking stalls will be replaced with an increase of parking in the lot just off 7th Street. Accessible parking will need to be added adjacent to the building in all site options.

Construction Lay-Down
No potential impact on surroundings and existing development with construction lay-down areas and construction phasing is expected or has been identified.

Pedestrian Access
Pedestrian circulation should be concentrated around the Engineering Lawn and on the Art Walk to stay within and complement existing campus organization. Pedestrian access between CEB and the Engineering Building will be at the Engineering lawn as well as a connected internal corridor.

Service Access
Service access to the site can be provided via the west of the building via Washington Street for Option A. Service access can be provided via the Art Walk for Option C and Option D. Service access to the site can be provided via both Washington Street and The Art Walk for Option B, the preferred alternative. Both routes are currently used to service other buildings on the campus. If access is provided via the Art Walk, the conflict between pedestrian circulation and service vehicles will be increased, however, the University feels this is manageable.

ADA Access
Primary circulation routes around the Art Walk and Engineering Lawn are generally accessible due to the relatively flat topography. The primary exception to this occurs along the area to either side of CEB and around Cadet Hall. All the schemes bridge this section of topography and provide public entries at both an upper level and a ground floor level which facilitates wheelchair access to either elevation.

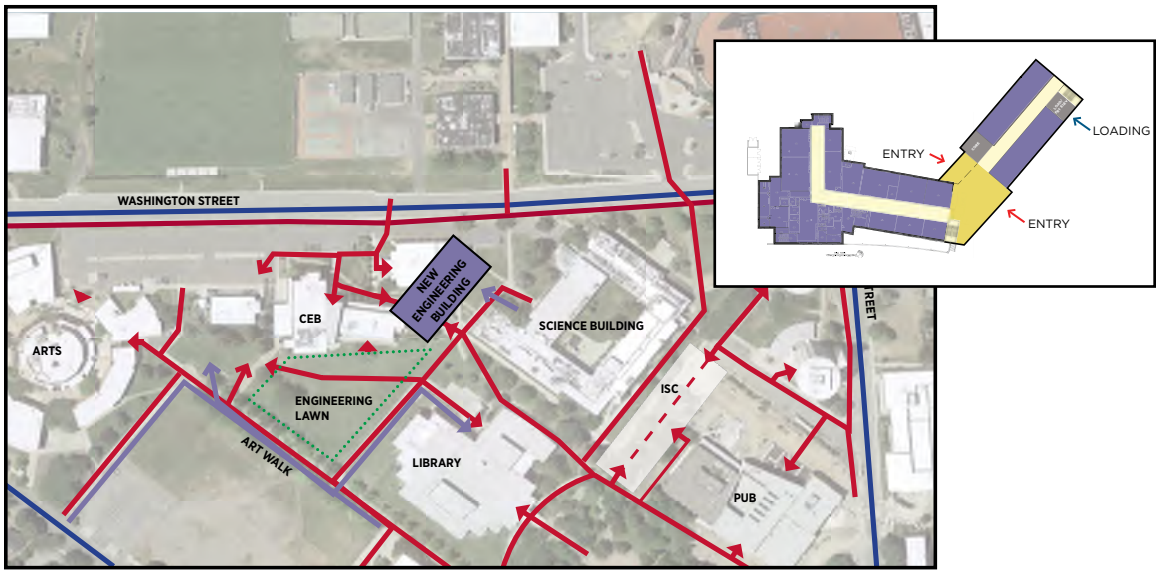
4.6 SITE SELECTION

Multiple potential site alternatives were studied for the location and layout of the Engineering Building. Based on a determination and evaluation of site selection criteria noted previously in this section, Sites A, B and C were selected to study in further detail. Each option evaluated the relationships of the building to the campus and to CEB. Key site relationships studied include:

- Proximity to CEB for pedestrian access and shared resources
- Proximity to Washington Street for greater visibility to industry and community
- Activation of the Engineering Lawn through proximity to CEB and the JFK Library
- Convenient service access for loading
- Future campus expansion
- Solar Orientation

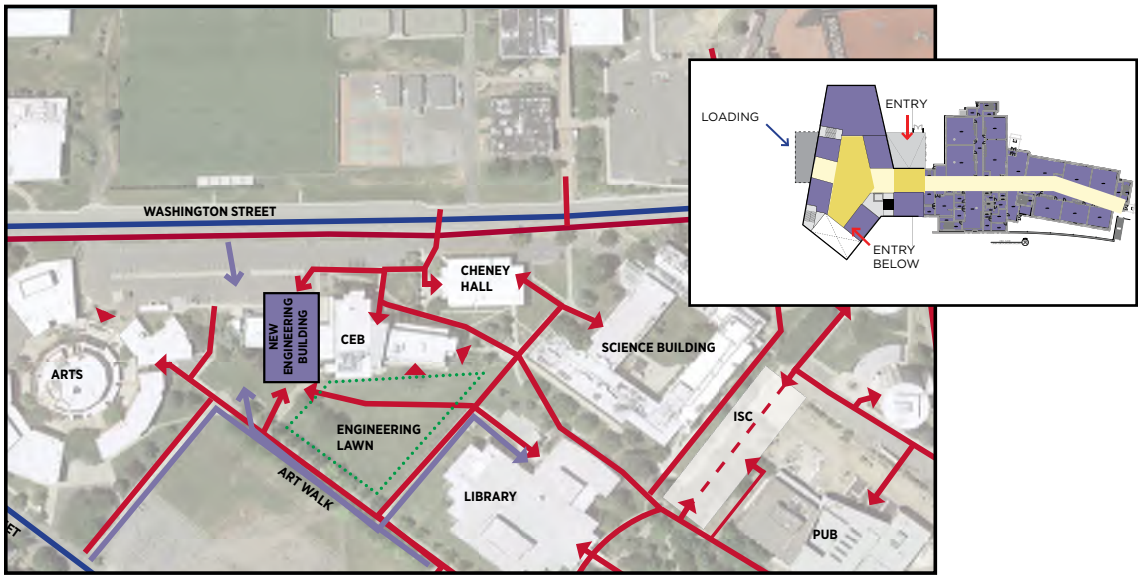
Site A: Cheney Hall Replacement

This alternative replaces Cheney Hall and provides a direct connection to CEB along the northern stair tower and ties into the existing circulation pattern on campus. The north entrance of CEB, although not designed as the main entrance, is often used by students entering the building. This scheme would create a more successful entrance to CEB and combine it with the new entrance of the new building. It allows for loading to be shared with the Science Building. The basement of CEB could be utilized for mechanical space to limit the amount of square footage required in the



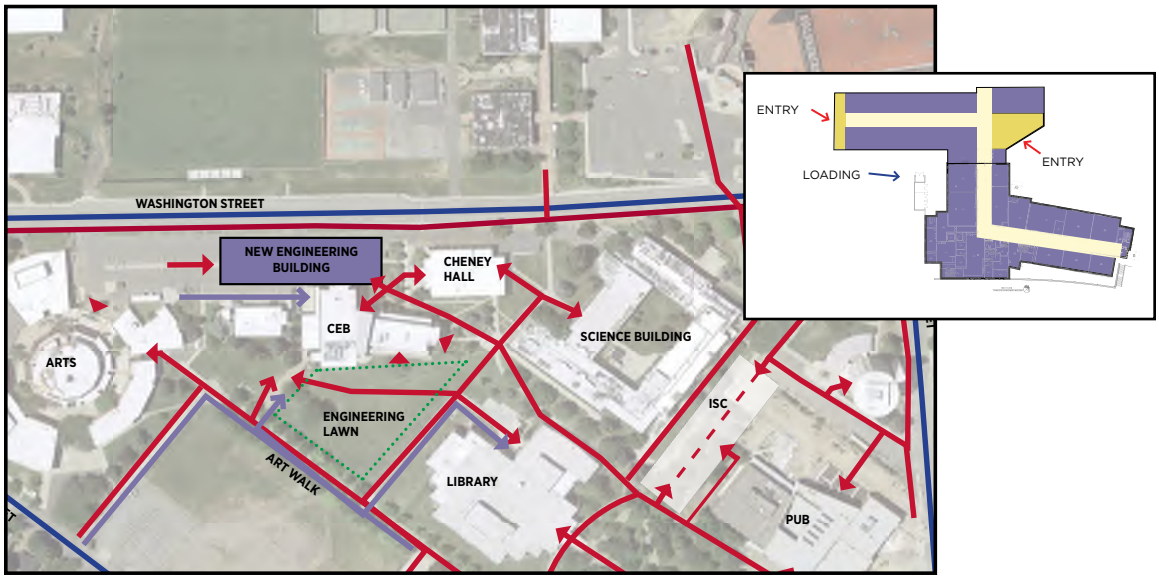
Site B: Cadet Hall Replacement - Preferred Alternative

This scheme replaces Cadet Hall. It has both loading and entrances located towards campus at the ground level and towards Washington Street at level one. It creates two front doors and a presence to Washington street and to campus and the Art Walk. It is connected to CEB via the north/south corridor . The student entrance is facing the Art Walk and engineering lawn. This schemes east/west orientation allows for an optimal solar orientation.



Site C: Parking Lot 3 Construction

This alternative replaces existing parking and provides a direct connection to CEB along the west stair tower and corridor. It creates a strong front door presence on Washington Street with the front facade elongated along Washington. It has a direct connection to CEB for shared resources and connection. It lacks a connection to the engineering lawn and the student entrance would be located adjacent to the CEB main entrance and Cheney Hall entrance.



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5.0 PREFERRED ALTERNATIVE

5.1 NATURE OF SPACE

5.2 OCCUPANCY

5.3 PREFERRED ALTERNATIVE BUILDING CONFIGURATION & SQUARE FOOTAGE

5.4 SITE PLAN

5.5 LONG TERM PLANS

5.6 LAWS & REGULATIONS

5.7 PROBLEMS, COMPONENTS, TECHNOLOGY, SECURITY, COMMISSIONING

5.1 NATURE OF SPACE & SQUARE FOOTAGE

The preferred alternative will construct a new three story, 82,523 GSF. Engineering Building connected to the existing Computing and Engineering Building (CEB). The building will house hands-on teaching and research laboratories, lab support facilities, and student meeting and study areas.

33,530 GSF of CEB and nearby Cheney Hall will be modified to create physical connections to the new building, take better advantage of existing spaces that are suited to non-lab MENT and CE courses, and optimize instructional and operational efficiencies. The demolition of Cadet Hall is also included in the project scope. See Section 4.0 Site Analysis for more detailed discussion of Cadet Hall and relocation of its current program.

The program for the Preferred Alternative–a new Engineering Building combined with targeted renovations of CEB and Cheney Hall–was developed in conjunction with campus and Engineering Department leadership and is summarized in the following table. See Section 2.0 Space Needs Assessment for more detail.

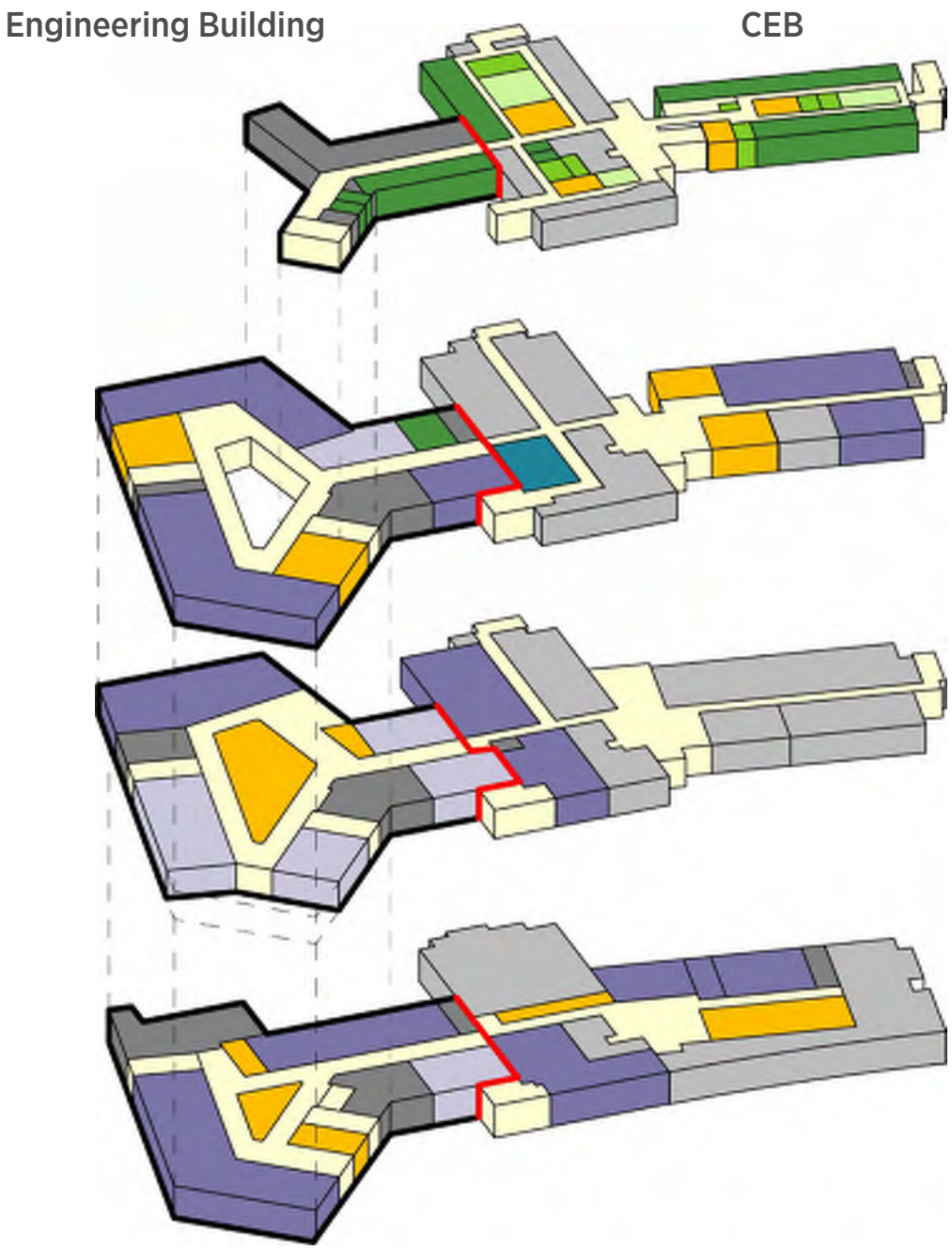
PROGRAM ELEMENT	AREA (ASF)	
ENGINEERING BUILDING		
Teaching Labs	31,400	
Research Labs	3,267	
Lab Support	1,800	
Offices & Office Support	1,740	
Collaboration	7,180	
Total Engineering Building (ASF)	45,387	
Estimated Net/Gross Ratio	55%	Ratio consistent with other science buildings
Estimated Engineering Building Area (GSF)	**82,522**	
CEB Renovated Spaces		
Teaching Labs	14,406	
Research Labs	2,863	
Classrooms	1,296	
Offices & Office Support	8,809	
Collaboration	4,051	
Total CEB Renovated Space (ASF)	31,425	
Estimated Net/Gross Ratio	80%	
Estimated CEB Renovated Area (GSF)	**39,281**	
Cheney Hall Renovated Spaces		
Teaching Labs	981	
Research Labs	1,836	
Total CEB Renovated Space (ASF)	2,817	
Estimated Net/Gross Ratio	90%	
Estimated CEB Renovated Area (GSF)	**3,130**	

5.2 OCCUPANCY

Total enrollment occupancy for the combined Engineering Building and renovated CEB and Cheney Hall project is 700 students. EWU's expectation is that this building under current growth forecasts for students and faculty would reach maximum capacity at about 15 years after opening. The objective will be to occupy and reach capacity as quickly as possible. EWU is continuously reviewing faculty hiring, enrollment data and projections, curriculum requirements, scheduling, class sizes, etc to identify a maximum enrollment capacity.

5.3 BUILDING CONFIGURATION

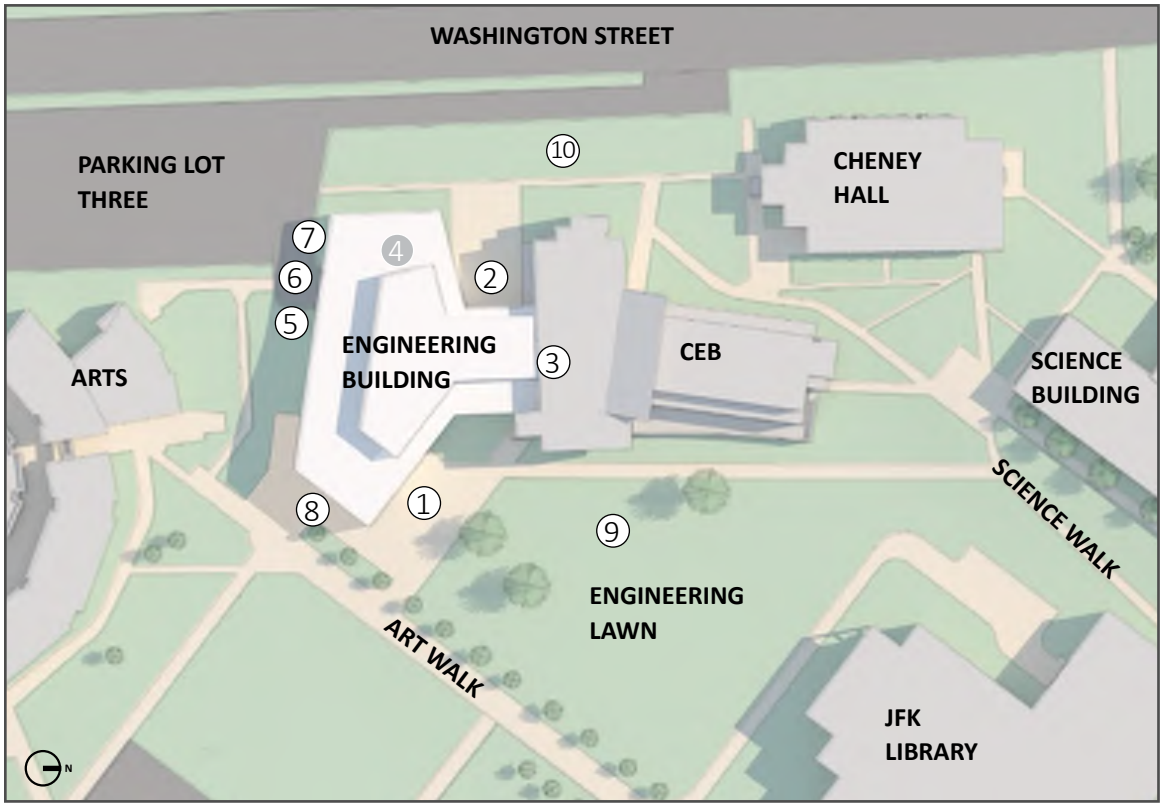
The below axonometric drawing illustrates the basic, four-story, configuration of programmed spaces in the preferred alternative. The project primarily consists of a new facility–to the left of the red line–that contains teaching laboratories, research laboratories, and collaborative working spaces. The new building has an integral connection to the existing Computing and Engineering Building (CEB)–to the right of the red line–some of which will be modified to complete the project program. See Project Drawings section for more detailed floor plans and 3d views.



Engineering Program Legend

- Teaching Laboratories
- Research Laboratories
- Project Laboratories & Storage
- Classrooms
- Collaboration Spaces
- Circulation
- Offices
- Office Support
- Open Office
- Building Support
- Not in project scope

5.4 SITE PLAN



Site Features

1) Northwest Entrance Plaza- One of two primary building entries is located off the Art Walk and faces the Engineering Lawn.

2) Washington Entrance- One of two primary building entries provides access from Washington Street, off of Parking Lot Three.

3) Connection to CEB- Continuation of CEB's north-south circulation corridor into the building on Ground, First and Second Floors.

4) Utility Tunnel- A branch utility tunnel connects a partial mechanical basement with the existing campus utility tunnel that runs under the building.

5) Service Yard- Located adjacent to the parking lot, includes electrical equipment such as transformers, and trash/recycle;

6) Loading Dock- Access from Washington Street through Parking Lot Three;

7) Raised Direct Loading Doc- From Parking Lot Three into Metallics;

8) Direct Loading- From Art Walk into ground level Industry Space and Northwest Entrance.

9) Engineering Lawn- A new path from Science Walk past CEB to the building. Enlarged hardscape work area to the east of both buildings.

10) Bio Infiltration Swale- A vegetative system will hold stormwater and treat stormwater from the vehicular drive

5.5 LONG TERM PLANS

The project is consistent with applicable long-term plans as required by RCW 43.88.110 through EWU's 2014 Comprehensive Master Plan.

5.6 LAWS & REGULATIONS

Sustainable Design

Sustainable strategies to reduce and enhance the project's impact on the environment and lower its energy demand will ultimately have a beneficial effect on its longevity and operational cost. Reusing and upgrading existing buildings is the most important greenhouse gas reduction strategy in the built environment, reducing air pollution, eliminating waste, and reducing the demand for new materials. There are numerous regulations and plans that point this project towards highly energy efficient and low-carbon building strategies listed below, along with many sustainability strategies that can be advanced in the next phase.

High Performance Buildings: Eastern Washington University has a proven track dating back to 2008 of designing and constructing high-performance buildings using the LEED rating system. This project will select design consultants who embody EWU's sustainability objectives. This project will be designed, constructed, and certified to the LEED Silver Standard, as a minimum, in accordance with RCW 39.35D. A LEED Checklist, outlining a preliminary approach to silver, has been included in the Appendix. EWU has had a history of achieving LEED silver or higher and will strive to achieve LEED gold or platinum on this project.

State Efficiency and Environmental Performance: The Governor's Executive Order 20-01 mandates high performance buildings for reduction of greenhouse gases, reduction of pollutants from fossil fuels, and the use of clean energy when technically and economically feasible. Eastern Washington University acknowledges that the costs of constructing zero energy or zero energy capable buildings are nearing parity with conventional buildings. Consequently, the university will further progress its building construction endeavors toward this directive, employing life-cycle cost analysis tools to inform decision-making throughout the design process. The life-cycle cost analysis performed as part of this predesign included the evaluation of a net zero building. In studying the use of photovoltaic (PV) solar panels for on-site renewable energy generation, the required area of PV panels exceeded the available roof area and would require additional dedicated site area. PV panels required by the Washington State Energy Code will be installed.

State Energy Standards for Clean Buildings: The Department of Commerce, through RCW 19.27A.210, has developed standards for reducing greenhouse gas emissions from the building sector as published in the Washington State Clean Buildings Performance Standard (2021). The Clean Building Performance Standard has established energy use intensity targets. This building is anticipated to exceed the 50,000 square feet threshold for Tier 1 Buildings, mandating compliance on the building level. EWU monitors their Energy Use Intensity (EUI) as a campus and has been evaluating their overall EUI in relation to the Washington State Clean Building Performance Standard, with a target campus EUI of 112.2. The preferred building option of this predesign is anticipated to reduce the entire campus' EUI from the current value of 118.4 closer to compliance with the Clean Building Performance Standard EUI requirement.

As of March 15, 2024, the 2021 Edition of the Washington State Energy Code has been implemented. Washington State Energy Codes are on a path towards 70% energy use reduction and the elimination of fossil fuels from buildings by 2031. With progressively more aggressive energy requirements, facilities will progress towards reducing energy consumption and associated greenhouse gas emissions, as outlined in the Greenhouse Gas Emissions Policy. The 2021 code

includes a requirement for photovoltaics panels on site. The project will be permitted under the code in effect at the time of permit which may be the 2021 codes or the 2024 codes, which are expected to be in effect November of 2026.

Required vehicle charging capabilities: Per RCW 19.27.540, where new parking is provided at the building, electric vehicle charging stations and infrastructure shall be provided in compliance with WAC 51-50-0429. The electric vehicle charging stations and infrastructure shall meet Level 2 charging capacity requirements with each charger rated for 40 amps at 208V, 1PH. Charger locations will be coordinated to not conflict with campus snow removal operations.

Greenhouse Gas Emissions Policy (RCW 70A.45.070): The referenced Revised Code of Washington regarding the greenhouse gas emissions reductions requires all state agencies to reduce greenhouse gas emissions as follows:

i. By 2020 to 1990 levels.
ii. By 2030 to forty-five percent below 1990 levels.
iii. By 2040 to seventy percent below 1990 levels.
iv. By 2050 to ninety-five percent below 1990 levels.

Eastern Washington University is committed to becoming a carbon neutral institution and a leader in sustainable practices. Part of the University's strategy to cut greenhouse gas emissions involves decreasing reliance on fossil fuels for building energy. The incorporation of energy-efficient HVAC, plumbing, and electrical systems in this proposed facility is crucial for advancing the campus's goal of reducing overall fossil fuel usage. Given that major capital projects are typically significant energy consumers, prioritizing energy efficiency in the new facility is particularly important.

This project is unique for EWU as it intends to utilize a new all electric heating and cooling system produced by a ground source heat pump for heating, domestic hot water, and chilled water. This ground source heat pump system will be housed in a newly proposed central geothermal energy plant. By connecting to an all-electric heating system, this project will significantly reduce carbon emissions associated with the building when compared to the existing facility that is currently connected to the campus steam plant, which utilizes natural gas fired steam boilers.

Campus Decarbonization Plan & Climate Action Plan: EWU is currently working on a campus Decarbonization Plan, scheduled for completion in 2025. This plan will outline the steps needed to align the campus with House Bill 1390, to decarbonize the existing central heating plant.

EWU is also updating their Climate Action Plan (CAP), which will address how the University can achieve carbon neutrality over the next 30 years. While the CAP may not be complete in the short term, design teams should consider strategies to align with the goals of carbon neutrality in the next 30 years. The electricity grid in Washington will be carbon neutral beginning in 2030, meaning a high-performance, all-electric building will meet that goal.

Campus Decarbonization Plan & Climate Action Plan: Supporting these plans and compliance with HB 1390, this project intends to connect to a new GeoEco central plant that utilizes an efficient, all-electric heating and cooling system produced by a ground source heat pump for heating, domestic hot water, and chilled water. This ground source heat pump system will be housed in a newly proposed central geothermal energy plant. By connecting to an all-electric heating system, this project will significantly reduce carbon emissions associated with the building when compared to the existing facility that is currently connected to the campus steam plant, which utilizes natural gas fired steam boilers. The building will also serve students and faculty as a living lab of the low-carbon energy future that they will be part of.

The building design can save cost and allow the GeoEco plant to serve more buildings by reducing peak loads through a high-performance envelope, including reasonable glazing percentage and above-code insulation, as well as high performance mechanical systems and demand response systems.

Consolidation of energy intensive lab/shop spaces into the new addition, whose processes require large amounts of fresh air and exhaust, will allow for sustainable energy efficient solutions that cannot be accommodated within the existing building due to practical spatial restraints. Energy efficient solutions include capture of waste energy from the exhaust air to pre-heat and pre-cool the ventilation air, variable flow demand-based ventilation systems, filtering and recycling air from sawdust collection systems.

ELCCA & LCCA: Washington State requires capital projects to engage in Energy Life Cycle Cost Analysis (ELCCA) per the Department of Enterprise Services (DES) Assessment as well as a Life Cycle Cost Analysis (LCCA) per the Office of Financial Management (OFM). The design team and University will strive to use these requirements as an opportunity to study high-performance design to reduce energy use and cost in detail and make informed decisions about energy-saving strategies, in line with Washington State's greenhouse reduction goals for new buildings. Meeting these requirements requires a robust energy modeling effort including ASHRAE Standard 209.

Wellness: Americans spend 90% of our time indoors, so buildings need to support human health. Part of the LEED system and EWU's mission includes supporting student wellness, beyond the air pollution and climate pollution reductions that are part of energy-related strategies above. Student health and educational outcomes can be improved through sensitive daylighting, a mix of social and separate spaces, materials selection to reduce or eliminate toxins, abundant fresh air, biophilia, access for a range of mobility and learning modes and more. Increasing the insulation value of the existing building will significantly increase thermal comfort as well. The design of the building during the next phase is critical for these goals.

EWU Campus Landscape Vision and Prairie Restoration Project: These plans work toward a resilient, sustainable campus landscape that is part of student experience and engagement towards ecological restoration. This plan includes dedicating "a third of campus land and resources for students to actively participate in a real-world, multidisciplinary project designed to restore a threatened ecosystem in our region." This includes low-maintenance Xeriscape, plantings that do not need watering after establishment, installed previously at EWU as part of the Interdisciplinary Science Center project as a water-saving feature. High performance, water-saving plumbing fixtures are anticipated in the LEED scorecard.

Embodied Carbon and the Buy Clean, Buy Fair Act: Since an all-electric building will have close to zero greenhouse gas emissions from energy use, nearly all greenhouse gases will be released in the creation, transportation, and installation of construction materials, referred to as embodied carbon. The most important embodied carbon strategy – building reuse – is already integrated into the Predesign preferred alternate. Reusing and renovating nearly all of the existing buildings means that the biggest impact materials – structure and enclosure – only need minor updates instead of building from all new materials. In the next phase additional embodied carbon reductions through material selection and specifications, especially concrete, will contribute LEED points and an overall project carbon reduction. Emerging low-carbon steel and concrete, along with mass timber, can be considered during design.

HB 1282 was passed in 2024, requiring disclosure of Environmental Product Declarations (EPDs) that include greenhouse gas emissions information for certain materials on state projects > 50,000 sf such as this one, beginning in July 2026.

Archeological and Cultural Resources
No archeological or cultural resources are known or anticipated. Per Governor's Executive Order 21-02, EWU has initiated consultation with DAHP and affected tribes; see DAHP and Tribal Letters in the Appendix. DAHP has noted that a survey of Cadet Hall showing non-significance will be required to complete their review. This survey is in progress.

ADA Implementation
The project complies with Executive Order 96094, the Americans with Disabilities Act.

Planning Compliance
The Preferred Alternative complies with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.

Information required by RCW 43.88.0301(1)

RCW 43.88.0301(1)(a)(i):	No
RCW 43.88.0301 (1)(a)(ii)(A):	No, not within the urban growth area. Yes, part of planned employment growth.
RCW 43.88.0301 (1)(a)(ii)(B):	Yes. EWU growth provides growth in Cheney and graduates with skills used by local industry.
RCW 43.88.0301 (1)(b)(i):	Yes
RCW 43.88.0301 (1)(b)(ii):	No
RCW 43.88.0301 (1)(b)(iii):	Yes

Other Codes & Regulations
EWU engineering building is expected to comply with the following codes:

Building	International Building Code, latest edition with Washington State amendments, WAC 51-50
Fire	International Fire Code, latest edition with Washington State amendments, WAC 51-54 NFPA 13 Standard for the Installation of Sprinkler Systems
Mechanical	International Mechanical Code, latest edition with Washington State amendments, WAC 51-52
Plumbing	Uniform Plumbing Code, current Washington State-required edition with amendments, WAC 51-56 & 57
Electrical	National Electric Code, current Washington State-required edition, WAC 296-46B
Energy	Washington State Non-Residential Energy Code, latest edition, WAC 51-11
Accessibility	Accessible and Usable Buildings and Facilities, ICC/ANSI 117.1, current Washington State-required edition
Air Quality	Washington State Ventilation and Indoor Air Quality Code, WAC 51-13
Elevators	American Society of Mechanical Engineers (ASME) A17.1, current Washington State-required edition
Sustainability	High-performance public buildings (Chapter 39.35D RCW). State efficiency and environmental performance (Executive Order 20-01) State Energy Standards for Clean Buildings (RCW 19.27A.210) Greenhouse Gas Emissions Policy (RCW 70A.45.070)
Seismic	American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures ASCE 7-16

EWU Engineering building is expected to comply with the following standards:
- American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

- ASHRAE Standard 62.1 – Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 55 – Thermal Comfort
- Sheet Metal Contractors Association of North America (SMACNA)
- American Society of Plumbing Engineers (ASPE)
- Eastern Washington University, Design and Construction Guidelines

Preliminary Building Code Analysis

The following code analysis identifies critical issues in the 2021 International Building Code that must be addressed during the design process; however, it is not intended as a complete investigation of relevant code requirements.

Use and Occupancy Classification (Chapter 3): The building occupancy will be classified as Group B, with Group S-2 spaces for low-hazard general storage and possibly Group H-2 spaces for hazardous storage.

Construction Type (Chapter 5): Type II-A, fully sprinklered construction is assumed for this report.

Building Height and Area (Chapter 5): Predesign concept plans have determined that the Engineering building will be 3 stories in height, with total size of about 82,500 gross square feet. The largest single floor will be approximately 26,000 square feet. Type II-A fully sprinklered buildings with Group B occupancies are allowed to be up to 112,500 square feet per story, up to 85 feet in height, and a maximum of 6 stories tall. H-2 occupancies are allowed on any floor up to two stories above grade.

Fire Resistive Construction (Chapter 6 & 7): Per IBC 602.2, all building elements are to be of noncombustible construction.

Building Element	Required Rating
Structural Frame	1-hour
Exterior Bearing Walls	1-hour
Interior Bearing Walls	1-hour
Exterior Non-bearing Walls	Unrated with greater than 30-foot separation
Int. Non-bearing Partitions	Unrated unless providing required separation
Floors	1-hour
Roofs	1-hour
Shaft Enclosures	1-hour
Exterior Openings	Unprotected with no limit if over 20-foot separation

Note: The provision of an automatic fire sprinkler system through the building may eliminate the requirement for 1-hour fire resistive construction in some building elements.

Occupant Load (Table 1004.1.1):

Area	Occupant Load Factor
Classrooms	20 sf/ occupant
Laboratories	50 sf/ occupant
Offices	150 sf/ occupant
Storage	300 sf/ occupant
Mechanical Rooms	300 sf/ occupant

Egress Requirements (Chapter 10):

Egress Element	Requirement
Exit Width	Stairs: 0.3"/ occupant, minimum 44" wide for occ. load > 50
Door Width	0.2"/ occupant, minimum 32" wide clear opening
Exit Corridors	Minimum 44" wide
Number of Exits	2 when occupant load > 50, 3 when occ. load > 500
Exit Location	Exits shall be located at a distance apart equal to not less than one third of the length of the maximum diagonal dimension of the building or area served, where building is equipped with automatic sprinkler systems.
Travel Distance	Travel distance shall not exceed 300' in a sprinklered. Group B occupancy. H-2 occupancies are limited to shorter allowable travel distances, 100'.

5.7 PROBLEMS, COMPONENTS, TECHNOLOGY, SECURITY, COMMISSIONING

Problems Requiring Future Study: No problems requiring future study have been identified.

Significant Components: No significant or distinguishable components, including major equipment and ADA requirements in excess of existing code have been identified.

Planned Technology Infrastructure: The project is planned to conform with EWU's IT protocols and specifications with typical IT infrastructure for the space use types. See the Outline Specifications and Laboratory Room Data Sheets in the Appendix for more detail.

Security Measures: The project is planned to conform to EWU's security guideines and includes typical security measures for the space use types. See the Outline Specifications in the Appendix for more detail.

Planned Building Commissioning: Building commissioning is integrated into schedule to verify via documentation that all building systems perform interactively and according to the design intent.

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6.0 PHASING, DELIVERY, SCHEDULE & MANAGEMENT

6.1 PHASING OPPORTUNITY

6.2 DELIVERY METHOD

6.3 IMPLEMENTATION & MANAGEMENT

6.4 MILESTONE SCHEDULE

6.5 SCHEDULE FACTORS

6.1 PHASING OPPORTUNITY

The project can be phased as noted below. The decision to phase and phasing details will be determined in the Design phase. This report, including schedule and cost estimate, assumes the Engineering Building and targeted renovations of CEB and Cheney Hall occur in a single phase.

Preliminary Phasing Strategy

- Phase 1: Engineering Building construction with connections to CEB. CEB and Cheney remain occupied during construction. Loading for CEB would occur at the Ground Floor during construction.
- Phase 2: Renovations of CEB and Cheney Hall.

6.2 DELIVERY METHOD

Eastern Washington University intends to employ the traditional Design/Bid/Build approach for this project. Previous major capital projects at EWU have been successfully executed within or under the allocated budget using this method. Its cost-effectiveness aligns well with the regional context and the construction administration capabilities available to EWU. Presently, there's no compelling reason for EWU to seek approval for an alternative delivery method under RCW 39.10.

6.3 PROJECT MANAGEMENT

The University's Construction & Planning office will manage the design and construction of this project. The Associate Vice President for Facilities and Planning is responsible for overall organization management. Construction & Planning provides oversight of programming; predesign; cost estimating; design and construction services for building alterations, new construction, and grounds improvements for the Cheney campus.

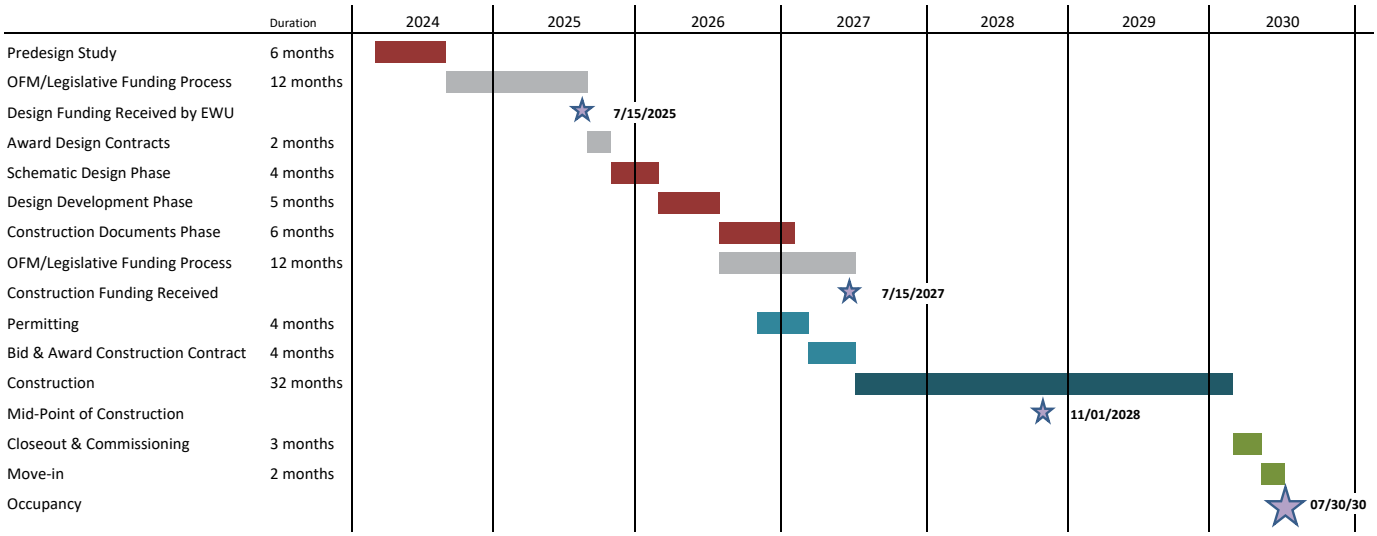
Project managers organize and administer the work of outside design consultants and public works contractors. They follow projects all the way through construction and work closely with clients, project architects, designers and consultants to ensure projects are on time and within budget.

The following individuals in the Construction & Planning office will oversee this project:

Kris Jeske	Director, Construction & Planning
Troy Bester	Senior Project Manager

The cost for the University's management of the design and construction is included in the Project Budget Analysis section of this report

6.4 MILESTONE SCHEDULE



6.5 SCHEDULE FACTORS

Value Engineering and Constructibility
Value-engineering analysis and constructability review will be integrated throughout the design and building process, and the time has been factored into the schedule above.

Project Delays
The proposed construction and completion of the new GeoEco Plant, which will provide geothermal heating and cooling to this project, is planned as a separate project. The completion of the GeoEco Plant will be required before the completion of this project, as it will serve as the sole source of building heating and domestic hot water.

Permitting
Buildings on EWU's campus are subject to the governing codes of the City of Cheney. EWU maintains a good working relationship with the City of Cheney and discusses each project with the City prior to implementation. It is anticipated that during the design process, the university and design team will meet periodically with officials of the City to ascertain that building plans are in conformance to the City's requirements.

Local Government Ordinances or Neighborhood Issues
No known local government ordinances or neighborhood issues.

Local Jurisdiction & Community Engagement
The local jurisdiction will be notified during the design phase. Meetings with local engineering industry partners are planned as part of the process. Community stakeholder meetings are not currently anticipated.

7.0 PROJECT BUDGET ANALYSIS PREFERRED ALTERNATIVE

7.1 COST ESTIMATE ASSUMPTIONS

7.2 CONSTRUCTION COST ESTIMATE UNIFORMAT LEVEL II SUMMARY

7.3 PROPOSED PROJECT COST

7.4 FURNITURE, FIXTURES & EQUIPMENT

7.5 PROPOSED FUNDING

7.6 FACILITY OPERATIONS AND MAINTENANCE REQUIREMENTS

7.7 C100

7.1 COST ESTIMATE ASSUMPTIONS

The following assumptions have been made as the basis for the Engineering Building project budget:

- The Engineering Building and targeted renovations to CEB and Cheney Hall will be constructed as a single phase.
- The construction start date will be July 2027.
- The construction period will be 32 months.
- Design/Bid/Build delivery method will be utilized.
- The project will follow the Outline Specifications included in the Appendix of this report.
- The Engineering Building will be designed to achieve a minimum LEED silver rating.
- The Engineering Building will be designed to comply with the codes and standards sited in this report.
- New mechanical, plumbing and electrical services will be provided complying with local building codes and campus standards.
- Heating and domestic hot water to the Engineering Building and renovated CEB will be provided by a connection to a new campus low temperature heating water (LTHW) system which is a separate campus GeoEco Plant project. This system will operate at 120°F. 50' of dedicated 6"Ø low temperature hot water supply and return piping is anticipated be routed across from mains installed as part of the GeoEco Plant project to the building utilizing direct buried, insulated, jacketed, and fusion-welded high temperature HDPE SDR-11 pipe.
- New utility tunnel connections will bring campus steam, chilled water, electrical and telecommunications to the buildings.
- The Engineering Building will be sprinklered throughout.
- Approximately 24 of the existing parking stalls will be removed and/or relocated as part of this project. A new loading zone from Washington Street via Parking Lot Three will be constructed.
- Subgrade soil conditions are expected to be similar to those at nearby buildings. A geotechnical investigation for the site has not been completed. Soils reports from the adjacent JFK Library and the nearby CEB indicate that site soils consist of a thin stratum of topsoil over medium stiff clayey silt or clay (Palouse formation) over stiffer Saprolite clays over basalt bedrock.
    - ❖ At CEB the clays extend down to as deep as 40 feet with groundwater encountered at 10 to 15 feet deep, and foundations consist of spread footings over rock bearing pads, which are located in stiffer Saprolite clays below the Palouse formation layer.
    - ❖ At JFK the site is clay silt over basalt bedrock at depths ranging from 12-17.5 feet below grade with ground water present, and the foundations are taken to bedrock utilizing concrete piers, and there is a foundation dewatering system.
    - ❖ The adjacent campus utility tunnel has dewatering sumps that pump to the stormwater system.
    - ❖ The presence of groundwater is expected on the project site, necessitating the inclusion of a permanent dewatering system for the utility tunnel connection and basement area.

7.2 CONSTRUCTION COST ESTIMATE UNIFORMAT LEVEL II SUMMARY

A detailed construction cost estimate for new building, existing building work and site improvements was prepared by a professional cost estimator. See Appendix for detailed estimate.

New Engineering Building Construction:

A10	Foundations	$1,267,643
A20	Basement Construction	$575,940
B10	Superstructure	$5,812,905
B20	Exterior Closure	$3,681,412
B30	Roofing	$1,168,398
C10	Interior Construction	$3,119,207
C20	Stairs	$175,000
C30	Interior Finishes	$3,392,694
D10	Conveying	$525,000
D20	Plumbing Systems	$3,465,924
D30	HVAC Systems	$8,912,376
D40	Fire Protection Systems	$453,871
D50	Electrical Systems	$8,087,156
E10	Equipment (built in)	$3,213,230
E20	Casework & Furnishings (built in)	$ 918,880
	Subtotal New Building Construction	$44,769,635
	Design Contingency/ Contractor Overhead	$12,714,576
	Total New Building Construction Cost	$57,484,211

Existing CEB Building Construction:

C10	Interior Construction	$1,135,668
C30	Interior Finishes	$1,291,712
D20	Plumbing Systems	$ 522,437
D30	HVAC Systems	$3,894,156
D40	Fire Protection Systems	$145,340
D50	Electrical Systems	$1,924,769
E10	Equipment (built in)	$ 261,544
E20	Casework & Furnishings (built in)	$304,035
F20	Selective Demolition	$336,500
	Subtotal Existing CEB Building Construction	$ 9,816,161
	Design Contingency/ Contractor Overhead	$2,577,724
	Total Existing CEB Building Construction Cost	$12,393,885

Existing Cheney Building Construction:

C10	Interior Construction	$22,532
C30	Interior Finishes	$ 109,160
D20	Plumbing Systems	$41,629
D30	HVAC Systems	$157,345
D40	Fire Protection Systems	$11,581
D50	Electrical Systems	$153,370
E10	Equipment (built in)	$25,226
E20	Casework & Furnishings (built in)	$23,475
F20	Selective Demolition	$28,951
	Subtotal Existing Cheney Hall Building Construction	$573,270
	Design Contingency/ Contractor Overhead	$150,541
	Total Existing Cheney Hall Building Construction Cost	$723,811

Site Construction:		
G10	Site Preparation	$1,743,564
G20	Site Improvements	$726,364
G30	Site Civil / Mechanical Utilities	$285,700
G40	Site Electrical Utilities	$670,000
G50	Other Site Construction	$137,500
	Design Contingency/ Contractor Overhead	$935,677
	Total Sitework Construction Cost	$4,498,805
General Conditions & Support Services		$3,680,000
Unescalated Maximum Allowable Construction Cost (MACC)		$78,780,712
Escalation to Midpoint of Construction (Q4, 2028)		$14,180,528
Escalated Maximum Allowable Construction Cost (MACC)		**$92,961,240**

7.3 PROPOSED PROJECT COST

Escalated project costs for the Engineering Building are summarized as follows; detailed project costs have been submitted to OFM through the online Capital Budgeting System.

Acquisition Costs	$0
Consultant Services	$9,569,384
Construction Contracts	$106,942,195
Equipment	$6,403,647
Art Work	$636,743
Other Costs	$0
Project Management	$4,433,304
Total Project Request	**$127,985,272**

7.4 FURNITURE, FIXTURES & EQUIPMENT: Included in the project budget.

7.5 PROPOSED FUNDING: The Engineering Building will be a State funded project.

7.6 FACILITY OPERATIONS AND MAINTENANCE REQUIREMENTS

Assumptions

The following estimates of operations and maintenance costs, including FTEs, for the Engineering Building are based on the "EWU's Annual Cost per Gross Square Foot" for FY24. Costs are escalated at an inflation rate of 3.0 % per year. Through careful project sequencing and/or phased construction, moving costs are estimated to be minimal. No additional operating costs are anticipated after the renovations of CEB and Cheney Hall.

Impact & Agency Responsible

The Engineering Building project will be maintained by the Owner. It will result in an increase to operations and maintenance costs for the campus. The new building will require an increase in the custodial staff, maintenance staff, goods and services, and utility costs.

Operations and Maintenance Cost

Current campus operations and maintenance costs for FY25 are shown in Table 1. For the Engineering Building, the projected operations and maintenance costs for the first full year of occupancy (FY2030) and five subsequent biennia are shown in Table 2.

Table 1: Operations and Maintenance - Current Campus

Operations	Operating cost GSF/YR
Component :	FY25
091-Utilities	$3.89
092 - Bldg & Utilities Maintenance	$2.73
093 - Custodial & Grounds Service	$3.56
094 - Ops & Maintenance Support	$3.73
Total Annual Per GSF	$13.91

Table 2: Operations and Maintenance - Projected Engineering Building

Operations	Operating cost GSF/YR	Cost 2032	Cost 2034	Cost 2036	Cost 2038	Cost 2040
Component :	FY30					
091-Utilities	$4.51	$4.78	$5.08	$5.38	$5.71	$6.06
092 - Bldg. & Utilities Maintenance	$3.16	$3.36	$3.56	$3.78	$4.13	$4.25
093 - Custodial & Grounds Service	$4.13	$4.38	$4.64	$4.93	$5.38	$5.55
094 - Ops & Maintenance Support	$4.32	$4.59	$4.87	$5.16	$5.64	$5.81
Total Annual Per GSF	$16.13	$17.11	$18.15	$19.25	$20.87	$21.67
Total GSF	82,522					
Total Annual Operating Cost	$1,330,709	$1,411,749	$1,497,724	$1,588,936	$1,722,131	$1,788,361

7.7 C100

STATE OF WASHINGTON

AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Engineering Building
OFM Project Number	30000556

Contact Information	
Name	Troy Bester
Phone Number	509-359-2204
Email	tbester@ewu.edu

Statistics			
Gross Square Feet	124,933	MACC per Gross Square Foot	$648
Usable Square Feet	79,629	Escalated MACC per Gross Square Foot	$744
Alt Gross Unit of Measure			
Space Efficiency	63.7%	A/E Fee Class	A
Construction Type	Other Sch. A Projects	A/E Fee Percentage	7.08%
Remodel	No	Projected Life of Asset (Years)	30
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, Wa
Contingency Rate	5%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	March-24	Predesign End	June-24
Design Start	November-25	Design End	January-27
Construction Start	July-27	Construction End	March-30
Construction Duration	32 Months		

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Project Cost Summary			
Total Project	$111,881,745	Total Project Escalated	$127,985,272
		Rounded Escalated Total	$127,985,000
Amount funded in Prior Biennia			**$0**
Amount in current Biennium			**$7,500,000**
Next Biennium			**$120,485,000**
Out Years			**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$4,174,615		
Extra Services	$2,224,200		
Other Services	$1,969,052		
Design Services Contingency	$418,393		
Consultant Services Subtotal	**$8,786,260**	**Consultant Services Subtotal Escalated**	**$9,569,384**

Construction			
Maximum Allowable Construction Cost (MACC)	$80,908,889	Maximum Allowable Construction Cost (MACC) Escalated	$92,961,240
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$4,545,444		$5,240,898
Non-Taxable Items	$0		$0
Sales Tax	$7,605,493	Sales Tax Escalated	$8,740,057
Construction Subtotal	**$93,059,826**	**Construction Subtotal Escalated**	**$106,942,195**

Equipment			
Equipment	$5,100,000		
Sales Tax	$453,900		
Non-Taxable Items	$0		
Equipment Subtotal	**$5,553,900**	**Equipment Subtotal Escalated**	**$6,403,647**

Artwork			
Artwork Subtotal	**$636,743**	**Artwork Subtotal Escalated**	**$636,743**

Agency Project Administration			
Agency Project Administration Subtotal	$3,845,016		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$3,845,016**	**Project Administration Subtotal Escalated**	**$4,433,304**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$111,881,745**	Total Project Escalated	**$127,985,272**
		Rounded Escalated Total	**$127,985,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				$0
Consultant Services					
Consultant Services Subtotal	$9,569,384		$7,500,000	$2,069,384	$0
Construction					
Construction Subtotal	$106,942,195			$106,942,195	$0
Equipment					
Equipment Subtotal	$6,403,647			$6,403,647	$0
Artwork					
Artwork Subtotal	$636,743			$636,743	$0
Agency Project Administration					
Project Administration Subtotal	$4,433,304			$4,433,304	$0
Other Costs					
Other Costs Subtotal	$0				$0
Project Cost Estimate					
Total Project	**$127,985,272**	**$0**	**$7,500,000**	**$120,485,273**	**-$1**
	$127,985,000	**$0**	**$7,500,000**	**$120,485,000**	**$0**
	Percentage requested as a new appropriation		**6%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Design
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
Remaining consultant services, construction, equipment, artwork, agency project administration
Insert Row Here

Cost Estimate Details

Acquisition Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	NA			
Appraisal and Closing	NA			
Right of Way	NA			
Demolition	NA			
Pre-Site Development	NA			
Other				
Insert Row Here				
ACQUISITION TOTAL	**$0**	**NA**	**$0**	

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0452**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$4,174,615			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$4,174,615**	**1.0653**	**$4,447,218**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$90,000			
Geotechnical Investigation	$30,000			
Commissioning	$180,000			
Site Survey	$28,500			
Testing				
LEED Services	$90,000			
Voice/Data Consultant	$60,300			
Value Engineering	$35,000			
Constructability Review	$31,400			
Environmental Mitigation (EIS)	$30,000			
Landscape Consultant	$150,000			
Electronic Security Consultant	$20,000			
Audiovisual Consultant	$40,000			
Lighting Consultant	$58,000			
Laboratory Planning Consultant	$450,000			
Acoustical Consultant	$34,000			
Interior Design	$400,000			
Elevator Consultant	$20,000			
Hardware Consultant	$7,500			
Code Consultant	$8,900			
Building Envelope Consultant	$80,000			
Value Engineering Support	$35,000			
Energy Life Cycle Cost Analysis (ELCCA)	$80,000			
Life Cycle Cost Analysis (LCCA)	$30,000			
Energy Modeling	$65,600			
Models & Renderings	$25,000			
Full Fire Protection Design	$15,000			
Reimbursible Expenses	$130,000			
Sub TOTAL	**$2,224,200**	**1.0653**	**$2,369,441**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,875,552			31% of A/E Basic Services
HVAC Balancing	$20,000			
Staffing				
Commissioning Support	$33,500			
Record Drawings	$40,000			
Sub TOTAL	**$1,969,052**	**1.1530**	**$2,270,317**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$418,393			
Other				
Insert Row Here				
Sub TOTAL	**$418,393**	**1.1530**	**$482,408**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$8,786,260**		**$9,569,384**	

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$1,743,564			
G20 - Site Improvements	$726,364			
G30 - Site Mechanical Utilities	$285,700			
G40 - Site Electrical Utilities	$670,000			
G60 - Other Site Construction	$137,500			
Design Contingency	$641,363			18%.
Contractor Markup	$294,314			7%.
Sub TOTAL	**$4,498,805**	**1.1037**	**$4,965,332**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other	$2,128,177			
Insert Row Here				
Sub TOTAL	**$2,128,177**	**1.1037**	**$2,348,869**	
3) Facility Construction				
A10 - Foundations	$1,267,643			
A20 - Basement Construction	$575,940			
B10 - Superstructure	$5,812,905			
B20 - Exterior Closure	$3,681,412			
B30 - Roofing	$1,168,398			
C10 - Interior Construction	$4,277,407			
C20 - Stairs	$175,000			
C30 - Interior Finishes	$4,793,566			
D10 - Conveying	$525,000			
D20 - Plumbing Systems	$4,029,990			
D30 - HVAC Systems	$12,963,877			
D40 - Fire Protection Systems	$610,792			
D50 - Electrical Systems	$10,165,295			
F10 - Special Construction				
F20 - Selective Demolition	$365,452			
General Conditions	$3,680,000			
CFCI Equipment	$3,500,000			
CFCI Casework & Furnishings	$1,246,390			
Design Contingency	$10,824,025			18%.
Contractor Mark Up	$4,618,816			7%.
Sub TOTAL	**$74,281,907**	**1.1530**	**$85,647,039**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$80,908,889**		**$92,961,240**	
	$648		*$744 per GSF*	

Cost Estimate Details

7) Owner Construction Contingency				
Allowance for Change Orders	$4,045,444			
Additional Allowance for Renovation Portion of Project	$500,000			
Sub TOTAL	**$4,545,444**	**1.1530**	**$5,240,898**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1530**	**$0**	
9) Sales Tax				
Sub TOTAL	**$7,605,493**		**$8,740,057**	
CONSTRUCTION CONTRACTS TOTAL	**$93,059,826**		**$106,942,195**	

Equipment

Item	Base Amount	Escalation Factor	Escalated Cost	Notes
1) Equipment				
E10 - Equipment	$3,600,000			
E20 - Furnishings	$1,500,000			
F10 - Special Construction				
Other				
Insert Row Here				
Sub TOTAL	**$5,100,000**	**1.1530**	**$5,880,300**	
2) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1530**	**$0**	
3) Sales Tax				
Sub TOTAL	**$453,900**		**$523,347**	
EQUIPMENT TOTAL	**$5,553,900**		**$6,403,647**	

Artwork

Item	Base Amount	Escalation Factor	Escalated Cost	Notes
1) Artwork				
Project Artwork	$0			0.5% of total project cost for new construction
Higher Ed Artwork	$636,743			0.5% of total project cost for new and renewal construction
Other				
Insert Row Here				
ARTWORK TOTAL	**$636,743**	**NA**	**$636,743**	

Cost Estimate Details

Project Management				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management				
Agency Project Management	$3,845,016			
Additional Services				
Other				
Insert Row Here				
Subtotal of Other	*$0*			
PROJECT MANAGEMENT TOTAL	**$3,845,016**	**1.1530**	**$4,433,304**	

Other Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs				
Hazardous Material Remediation/Removal				
Historic and Archeological Mitigation				
Other				
Insert Row Here				
OTHER COSTS TOTAL	**$0**	**1.1037**	**$0**	

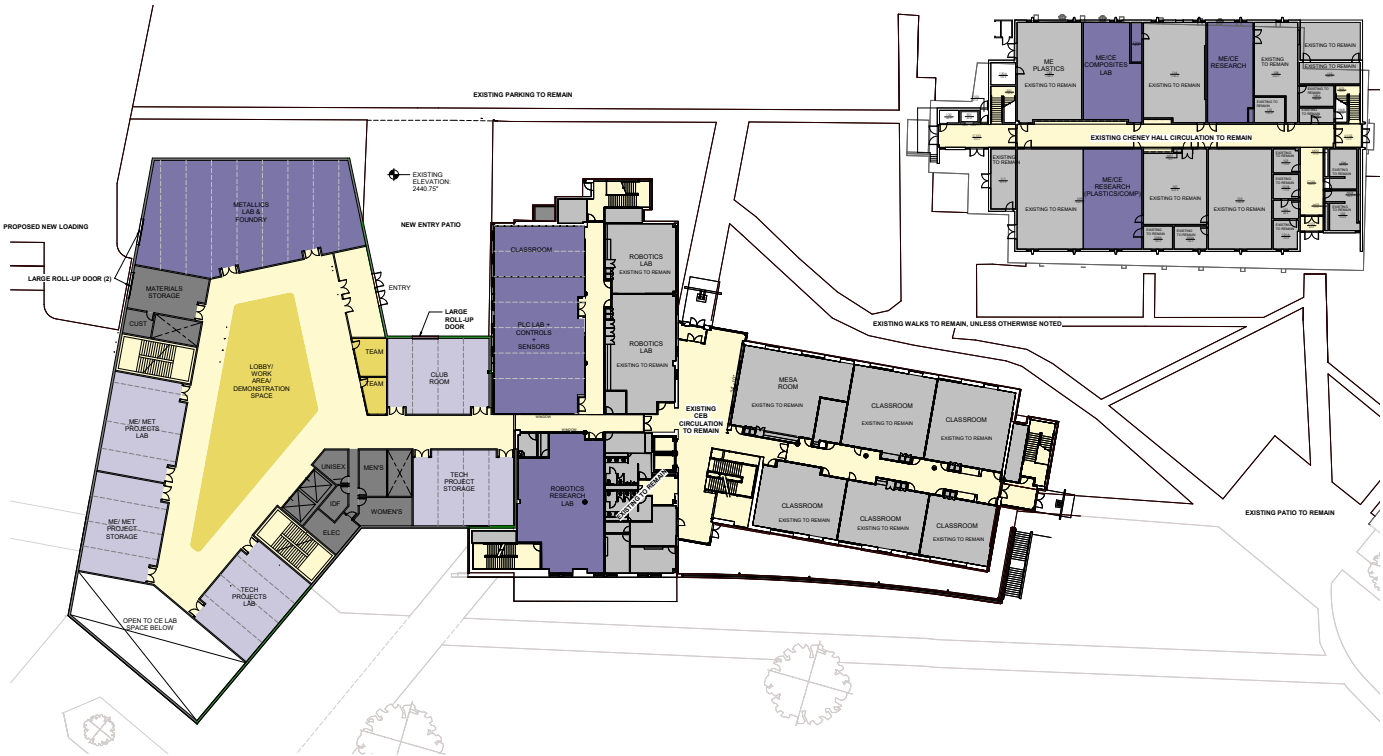
8.0 PROJECT DRAWINGS

8.1 BUILDING PLANS

8.2 AERIAL AND CONCEPTUAL MASSING VIEWS

8.1 BUILDING PLANS

GROUND LEVEL



LEVEL ONE

Engineering Program Legend

- Teaching Laboratories
- Research Laboratories
- Project Laboratories & Storage
- Classrooms
- Collaboration Spaces
- Circulation
- Offices
- Office Support
- Open Office
- Building Support
- Not in project scope

LEVEL TWO

LEVEL THREE

Engineering Program Legend

- Teaching Laboratories
- Research Laboratories
- Project Laboratories & Storage
- Classrooms
- Collaboration Spaces
- Circulation
- Offices
- Office Support
- Open Office
- Building Support
- Not in project scope

8.2 AERIAL AND CONCEPTUAL MASSING VIEWS

VIEW LOOKING EAST

VIEW LOOKING WEST

VIEW TOWARDS WASHINGTON STREET ENTRY

VIEW TOWARD ART WALK ENTRY

9.0 APPENDIX

9.1 PREDESIGN CHECKLIST

9.2 DAHP AND TRIBAL NOTIFICATION LETTERS

9.3 PREDESIGN STUDY PROCESS PARTICIPANTS

9.4 PRELIMINARY LEED CHECKLIST

9.5 LABORATORY DETAILED REQUIREMENTS

9.6 PRELIMINARY CONSTRUCTION COST ESTIMATE

9.7 CHENEY HALL, CEB & CADET HALL FCS REPORTS

9.8 OUTLINE SPECIFICATIONS

9.1 PREDESIGN CHECKLIST

Appendix 1: Predesign checklist and outline
A predesign should include the content detailed here. OFM will approve limited scope predesigns on a case-by-case basis.

Executive summary
Problem statement, opportunity, or program requirement

- ☑ Identify the problem, opportunity, or program requirement that the project addresses and how it will be accomplished.
- ☑ Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location, or physical accommodations. Include anticipated caseload projections (growth or decline) and assumptions, if applicable.
- ☑ Explain the connection between the agency's mission, goals, and objectives; statutory requirements; and the problem, opportunity, or program requirements.
- ☑ Describe in general terms what is needed to solve the problem.
- ☑ Include any relevant history of the project, including previous predesigns or budget funding requests that did not go forward to design or construction.

Analysis of alternatives (including the preferred alternative)

- ☑ Describe all alternatives that were considered, including the preferred alternative. Include:
- ☑ A no action alternative.
- ☑ Advantages and disadvantages of each alternative. Please include a high-level summary
- ☑ table with your analysis that compares the alternatives, including the anticipated cost for each alternative.
- ☑ Cost estimates for each alternative:
- ☑ Provide enough information so decision makers have a general understanding of the costs.
- ☑ Complete OFM's Life Cycle Cost Model (RCW 39.35B.050).
- ☑ Schedule estimates for each alternative. Estimate the start, midpoint, and completion dates.

Detailed analysis of preferred alternative

- ☑ Nature of space – how much of the proposed space will be used for what purpose (i.e., office, lab, conference, classroom, etc.)
- ☑ Occupancy numbers.
- ☑ Basic configuration of the building, including square footage and the number of floors.
- ☑ Space needs assessment. Identify the guidelines used.
- ☑ Site analysis:
  - ☑ Identify site studies that are completed or under way and summarize their results.
  - ☑ Location.
  - ☑ Building footprint and its relationship to adjacent facilities and site features. Provide aerial view, sketches of the building site and basic floorplans.
  - ☑ Water rights and water availability.
  - ☑ Stormwater requirements.
  - ☑ Ownership of the site, easements, and any acquisition issues.
  - ☑ Property setback requirements.
  - ☑ Potential issues with the surrounding neighborhood, during construction and ongoing.
  - ☑ Utility extension or relocation issues.
  - ☑ Potential environmental impacts.
  - ☑ Parking and access issues, including improvements required by local ordinances, local road impacts and parking demand.
  - ☑ Impact on surroundings and existing development with construction lay-down areas and construction phasing.
  - ☑ Consistency with applicable long-term plans (such as the Thurston County and Capitol campus master plans and agency or area master plans) as required by RCW 43.88.110.

- ☑ Consistency with other laws and regulations:
  - ☑ High-performance public buildings (Chapter 39.35D RCW).
  - ☑ State efficiency and environmental performance, if applicable (Executive Order 20-01).
  - ☑ State energy standards for clean buildings (RCW 19.27A.210).
  - ☑ Compliance with required vehicle charging capability for new buildings that provide on-site parking (RCW 19.27.540).
  - ☑ Greenhouse gas emissions reduction policy (RCW 70.235.070).
  - ☑ Archeological and cultural resources (Executive Order 21-02 and Section 106 of the National Historic Preservation Act of 1966). If mitigation is anticipated, please note this in the predesign with narrative about how mitigation is worked into the project schedule and budget.
  - ☑ Americans with Disabilities Act (ADA) implementation (Executive Order 96-04).
  - ☑ Compliance with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.
  - ☑ Information required by RCW 43.88.0301(1).
  - ☑ Other codes or regulations.
- ☑ Identify problems that require further study. Evaluate identified problems to establish probable costs and risk.
- ☑ Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.
- ☑ Identify planned technology infrastructure and other related IT investments that affect the building plans.
- ☑ Identify any site-related and/or physical security measures for the project.
- ☑ Describe planned commissioning to ensure systems function as designed.
- ☑ Describe any future phases or other facilities that will affect this project, including impacts to current lease contracts. Include detail on the need to backfill space or cost assumptions for vacant space.
- ☑ Provide a comparative discussion of the pros and cons of the project delivery methods considered for this project and offer a recommendation of proposed procurement method for the preferred alternative. The proposed method of project delivery must be justified.
- ☑ Describe how the project will be managed within the agency.
- ☑ Schedule.
- ☑ Provide a high-level milestone schedule for the project, including key dates for budget
- ☑ approval, design, bid, acquisition, construction, equipment installation, testing, occupancy and full operation.
- ☑ Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).
- ☑ Describe factors that may delay the project schedule.
- ☑ Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
- ☑ Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are a part of the process.

Project budget analysis for the preferred alternative

- ☑ Cost estimate.
  - ☑ Major assumptions used in preparing the cost estimate.
  - ☑ Summary table of Uniformat Level II cost estimates.
  - ☑ The C-100.
- ☑ Proposed funding.
  - ☑ Identify the fund sources and expected receipt of the funds.
  - ☑ If alternatively financed, such as through a COP, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.
- ☑ Facility operations and maintenance requirements.
  - ☑ Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs) and moving costs.
  - ☑ Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repair, replacement, and maintenance.
  - ☑ Identify the agency responsible for ongoing maintenance and operations, if not maintained by the owner.
- ☑ Clarify whether furniture, fixtures and equipment are included in the project budget. If not included, explain why.

Predesign appendices

- ☑ Completed Life Cycle Cost Model.
- ☑ A letter from DAHP.
- ☑ Title report for projects including proposed acquisition.

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9.2 DAHP AND TRIBAL NOTIFICATION LETTERS

June 13, 2024

Troy Bester
Eastern Washington University

In future correspondence please refer to:
Project Tracking Code: 2020-06-04168
Property: EWU Engineering Building
Re: More Information Needed, Survey Requested

Dear Troy:

Thank you for contacting the Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Office (SHPO) under provisions of Governor's Executive Order 21-02. Our review is based upon documentation provided in your submittal. We understand this request is only regarding the predesign of the project, and appreciate you consulting with DAHP early on in project development.

In order to complete our review, we request an intensive level survey of Cadet Hall. Cadet Hall is proposed to be demolished as part of the project scope and has not been surveyed for eligibility to the National Register of Historic Places. Cadet Hall was built in 1956 and may be significant for its association with the successful ROTC program at EWU.

Before we can assess project impact on historic resources, we need to know what historic resources are present in the project area. An intensive-level survey and updated Historic Property Inventory Form completed by a Secretary of the Interior Qualified Architectural Historian will assist us in making this determination.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in conformance with Executive Order 21-02. Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

State of Washington • **Department of Archaeology & Historic Preservation**
P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065
www.dahp.wa.gov

Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Jill Maria Wagner, PhD
Tribal Historic Preservation Officer
Coeur d'Alene Tribe

RE: Propose Project at Eastern Washington University
Engineering Building
EWU Project No. CP1141

Dr. Wagner:

This letter is to notify you of a proposed Engineering Building, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

The proposed new building will be connected to the Computing and Engineering Building (CEB) to address current facility deficiencies and meet the future needs of the proposed civil engineering academic program. The 82,522 GSF building will accommodate hands-on teaching and research laboratories, lab support facilities, student meeting and study areas, and faculty offices. Additionally, 42,411 GSF of the CEB and nearby Cheney Hall will be modified to support the program.

The initial site proposed for construction is on the south side of CEB, which necessitates the demolition of Cadet Hall and an adjacent parking lot. Built in 1955, Cadet Hall currently houses the ROTC program for the EWU campus, which will be relocated to another facility on campus. EWU will perform an Intensive-level survey and updated Historic Property Inventory Form for Department of Archaeology and Historic Preservation (DAHP) prior to design. Sitework for the project will include providing utilities from a proposed nearby geothermal plant, as well as paving parking areas and landscaping. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

Troy Bester
Senior Project Manager

Attachments:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Mr. Guy Moura
Tribal Historic Preservation Officer
Confederated Tribes of the Colville Reservation

RE: Propose Project at Eastern Washington University
Engineering Building
EWU Project No. CP1141

Mr. Moura:

This letter is to notify you of a proposed Engineering Building, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

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Troy Bester
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EWU expands opportunities for personal transformation through excellence in learning.

EASTERN WASHINGTON UNIVERSITY

Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Mr. Randy Abrahamson
Tribal Historic Preservation Officer
Spokane Tribe of Indians

RE: Propose Project at Eastern Washington University
Engineering Building
EWU Project No. CP1141

Mr. Abrahamson,

This letter is to notify you of a proposed Engineering Building, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

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Sincerely,

Troy Bester
Senior Project Manager

Attachments:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

9.3 PREDESIGN STUDY PROCESS PARTICIPANTS

EASTERN WASHINGTON UNIVERSITY

EWU ENGINEERING DEPARTMENT
David Bowman, Dean, College of Science, Technology, Engineering, and Mathematics
Jennifer Waldo, Associate Dean, College of Science, Technology, Engineering, and Mathematics

2024 Faculty Participants
Jason Durfee, Department Chair & Professor, MENT, MET Program Coordinator
Richard Orndorff, Professor, Geosciences
Chad Pritchard, Professor, Geosciences
Awlad Hossain, Professor, ME, MET, ME Program Coordinator
Jennifer Leaf, Assistant Professor, ME
Troy Krumrey, Lecturer, Manufacturing/Technology, Construction
Joe Stoutimore, Engineering Technician 2

2020 Faculty Participants
Martin Weiser, Department Chair & Associate Professor, ME & MET
Terence Geyer, Senior Lecturer, Applied Technology, Technology/Manufacturing
Rusty Hallin, Lecturer, Applied Technology, Technology/Manufacturing
James S. McCuistion, Lecturer, Distance Education & Technology
Donald Richter, Professor, ME, MET & Technology/Manufacturing
Gary Weber, Lecturer, ME & MET

EWU FACILITIES AND PLANNING
Kris Jeske, Director, Construction & Planning
Troy Bester, Senior Project Manager

DESIGN TEAM

LMN Architects (Architect)
Jennifer DuHamel
Jennifer Milliron
Rachel Dinkel
Kjell Anderson
Stephen Van Dyck

Research Facilities Design (Laboratory Planner)
Terry D. Brown
Jeff R. Schulien

Saiful Bouquet (Structural Engineer)
Saiful Islam
YK Low

Coughlin Porter Lundeen (Civil Engineer)
Tim Brockway
Ken Wiersema

MW Consulting Engineers (Mech/Elec Engineer)
Anthony Schoen
Joel Enevold
Kjersten Khuta

Roen Associates (Cost Estimator)
Dan Deymonaz
Jovelyn Limbag

9.4 PRELIMINARY LEED CHECKLIST

LEED

Washington State requires sizable capital projects to achieve a minimum of LEED Silver. Several projects at EWU have achieved LEED Gold.

LEED v4/v4.1 for BD+C: New Construction and Major Renovation
Project Checklist

Y	?	N			
1			Credit	Integrative Process	1

7	9	16	Location and Transportation		16
		16	Credit	LEED for Neighborhood Development Location	16
	1		Credit	Sensitive Land Protection	1
	2		Credit	High Priority Site	2
3	2		Credit	Surrounding Density and Diverse Uses	5
3	2		Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
	1		Credit	Green Vehicles	1

5	5	0	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
1	1		Credit	Site Development - Protect or Restore Habitat	2
	1		Credit	Open Space	1
1	2		Credit	Rainwater Management	3
1	1		Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

6	5	0	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1	1		Credit	Outdoor Water Use Reduction	2
4	2		Credit	Indoor Water Use Reduction	6
	2		Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

15	18	0	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
3	3		Credit	Enhanced Commissioning	6
10	8		Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
	2		Credit	Demand Response	2
	3		Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	2		Credit	Green Power and Carbon Offsets	2

7	**6**	**0**	**Materials and Resources**		**13**
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
3	2		Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
1	1		Credit	Construction and Demolition Waste Management	2

8	**8**	**0**	**Indoor Environmental Quality**		**16**
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
1	1		Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
	3		Credit	Daylight	3
	1		Credit	Quality Views	1
	1		Credit	Acoustic Performance	1

4	**2**	**0**	**Innovation**		**6**
3	2		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

3	**1**	**0**	**Regional Priority**		**4**
1			Credit	Regional Priority: Water Use Reduction (40%)	1
1			Credit	Regional Priority: Construction IAQ Plan	1
1			Credit	Regional Priority: BPDO - EPD	1
	1		Credit	Regional Priority: Specific Credit	1

56	**54**	**16**	**TOTALS**	Possible Points: **110**

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

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DETAILED SPACE REQUIREMENTS

Laboratory & Support

LMN / RFD

Eastern Washington University

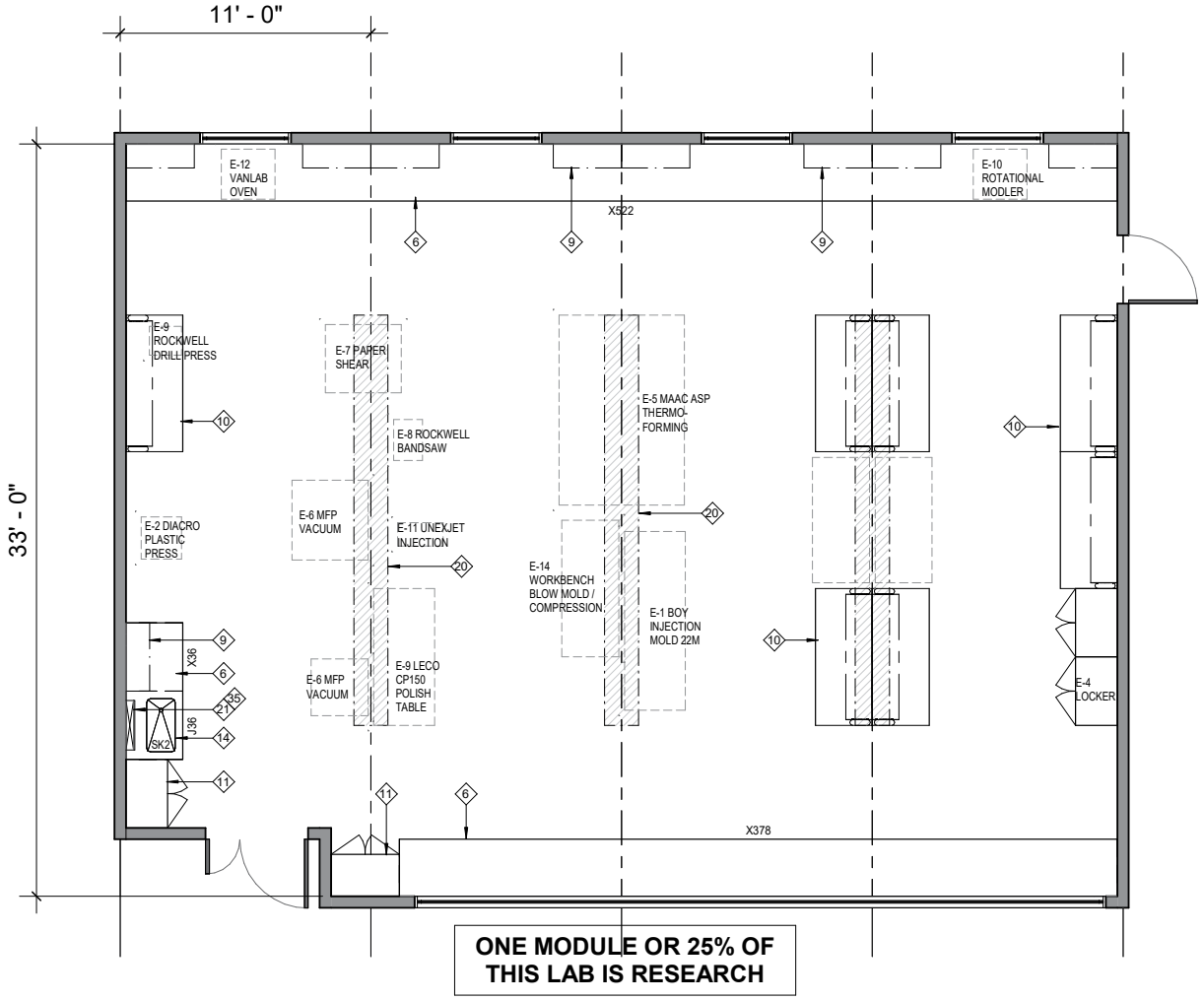
DEPARTMENT: ME

SPACE NAME: PLASTICS LAB

SPACE ID NO: 2.01 CHN

AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

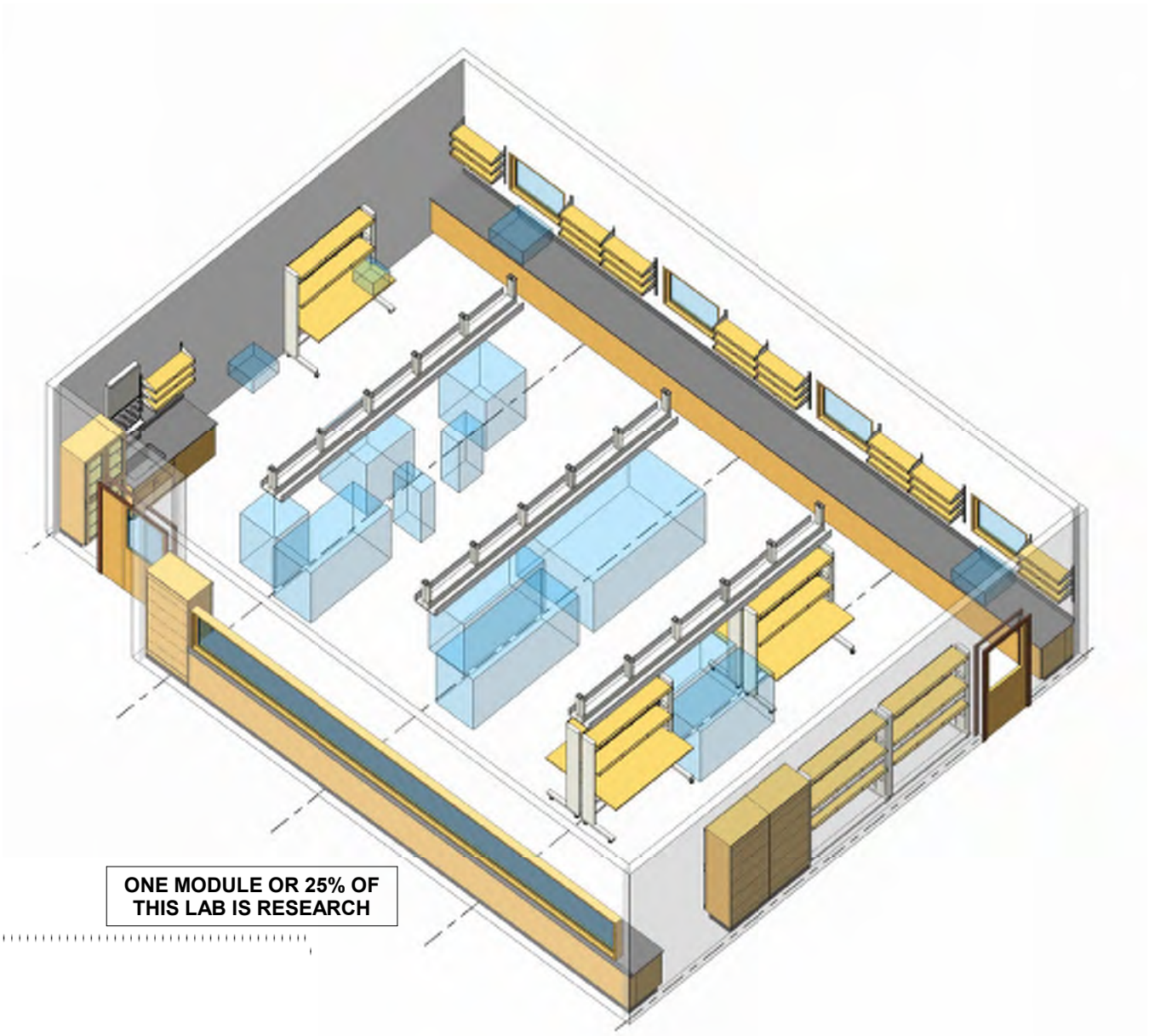


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

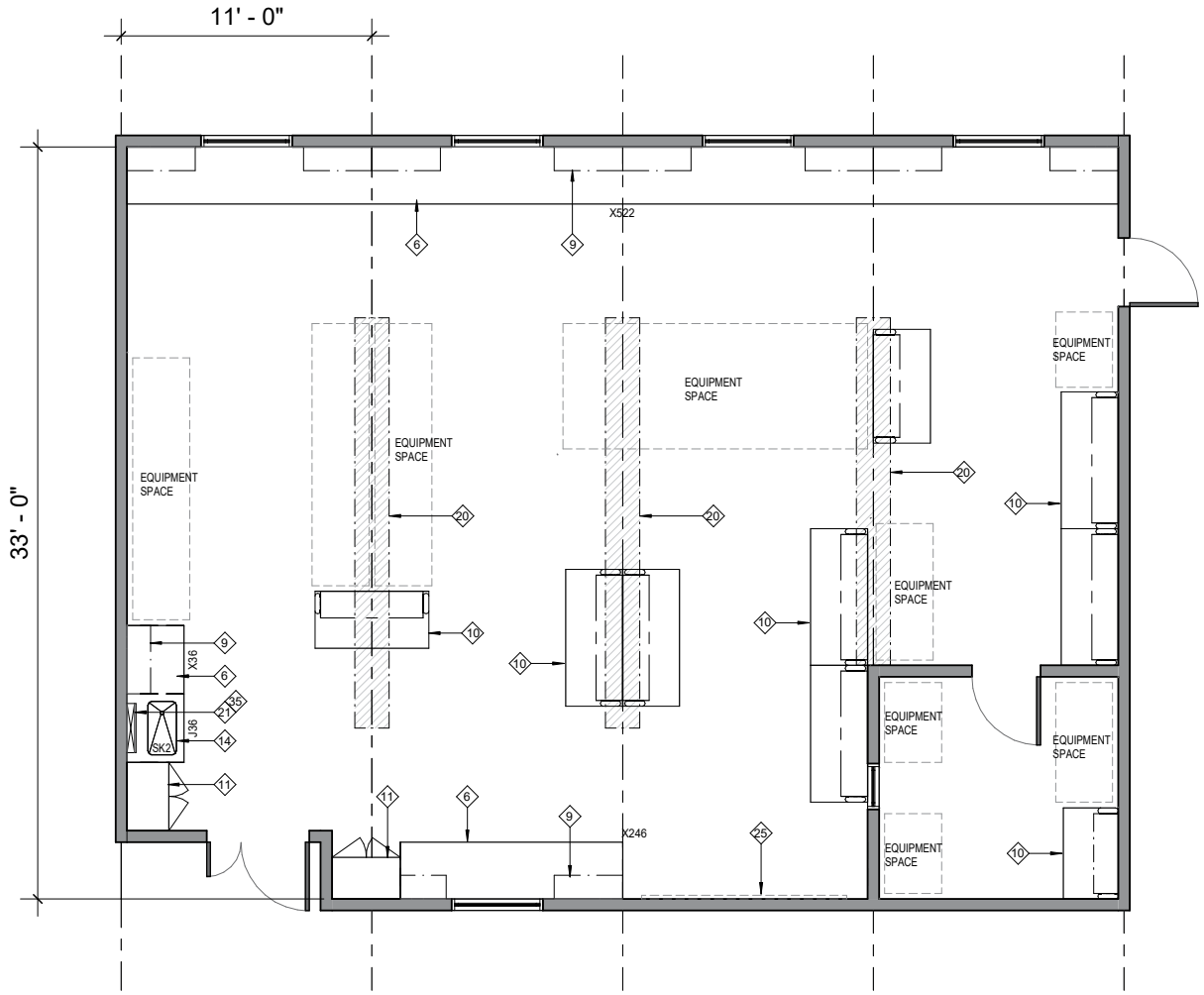
DEPARTMENT: ME **SPACE ID NO: 2.01 CHN**
SPACE NAME: PLASTICS LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.03 EB**
SPACE NAME: HVAC TEACHING LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



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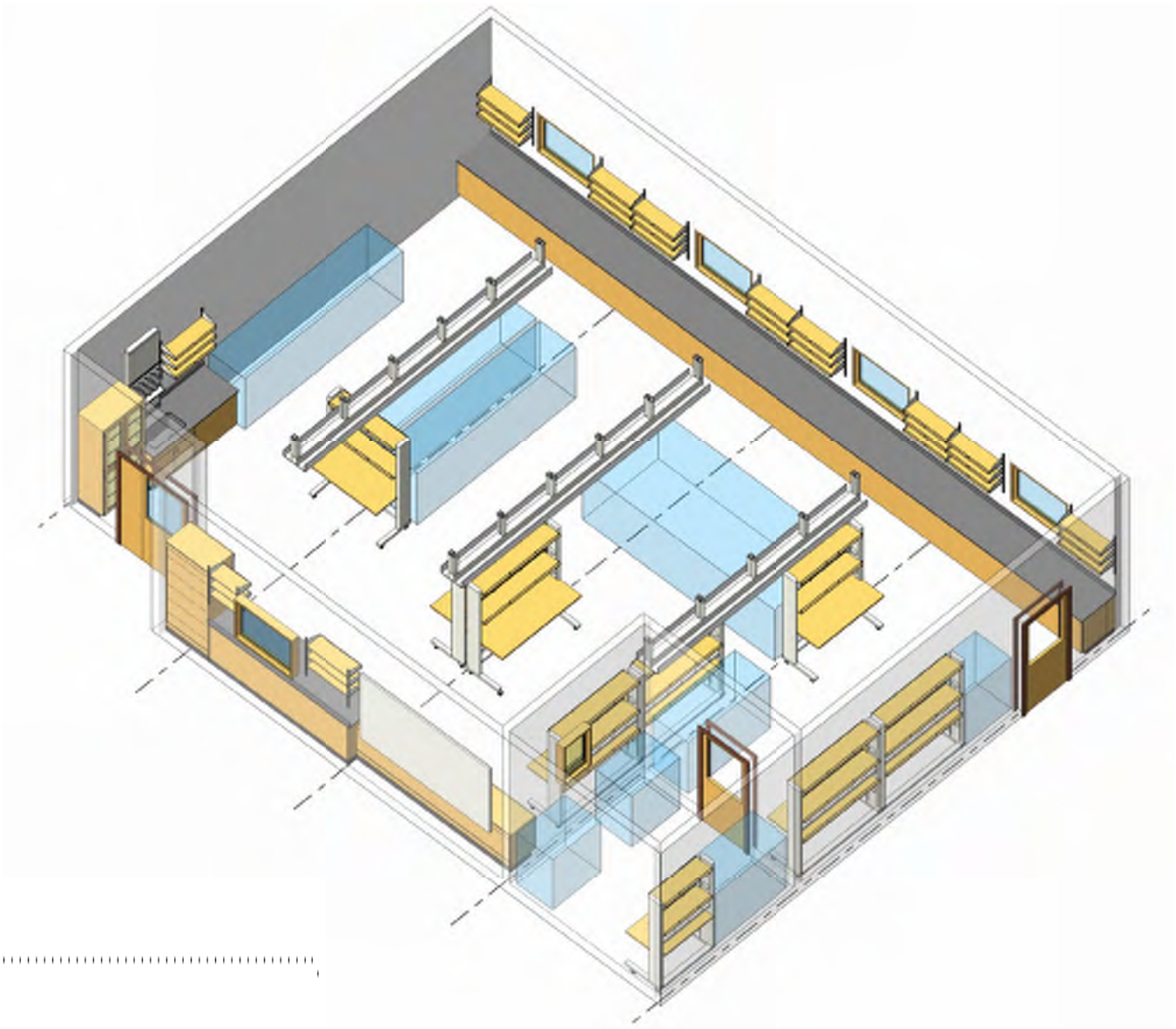
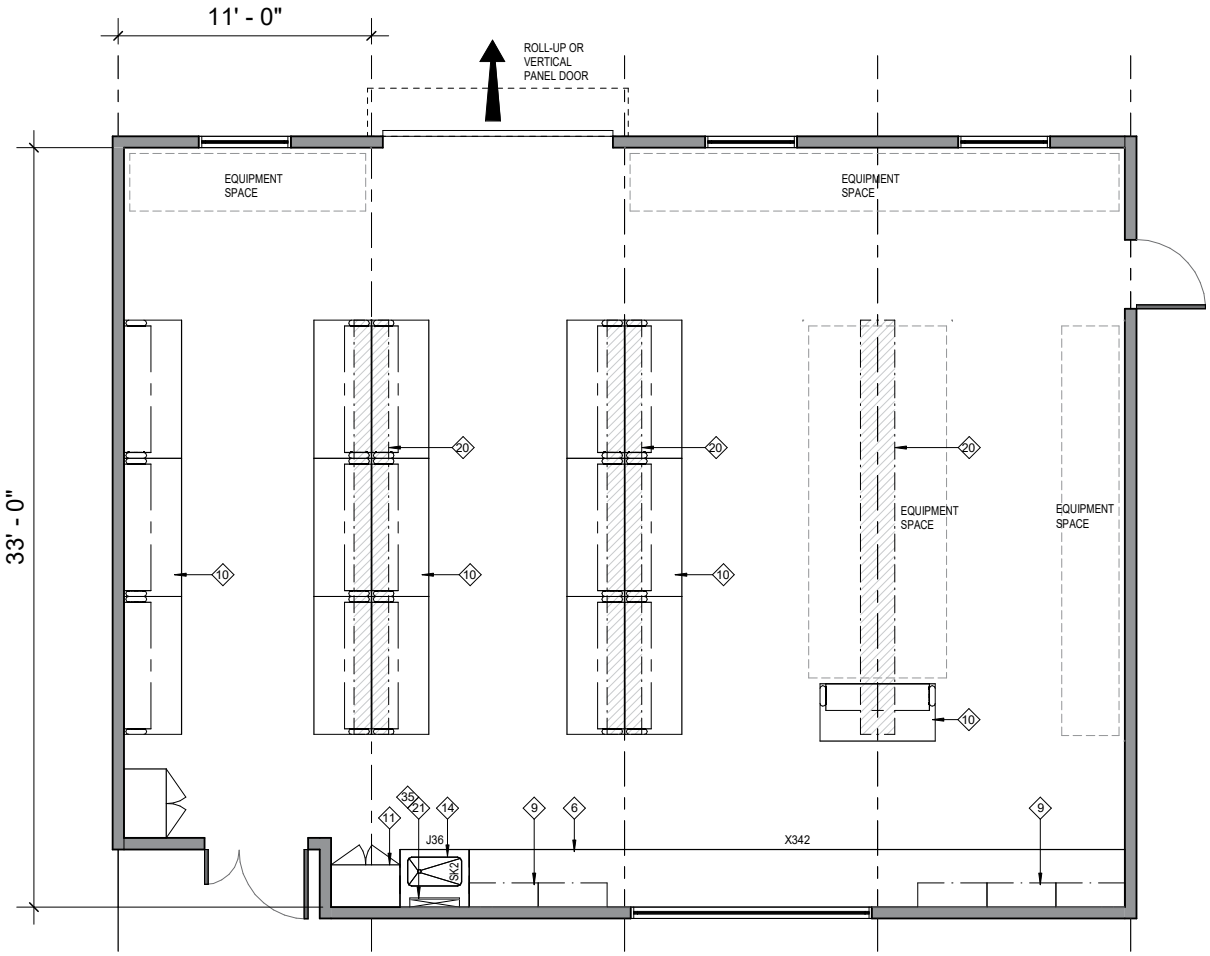


DEPARTMENT: ME **SPACE ID NO: 1.13 EB**
SPACE NAME: ME/MET PROJECTS LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

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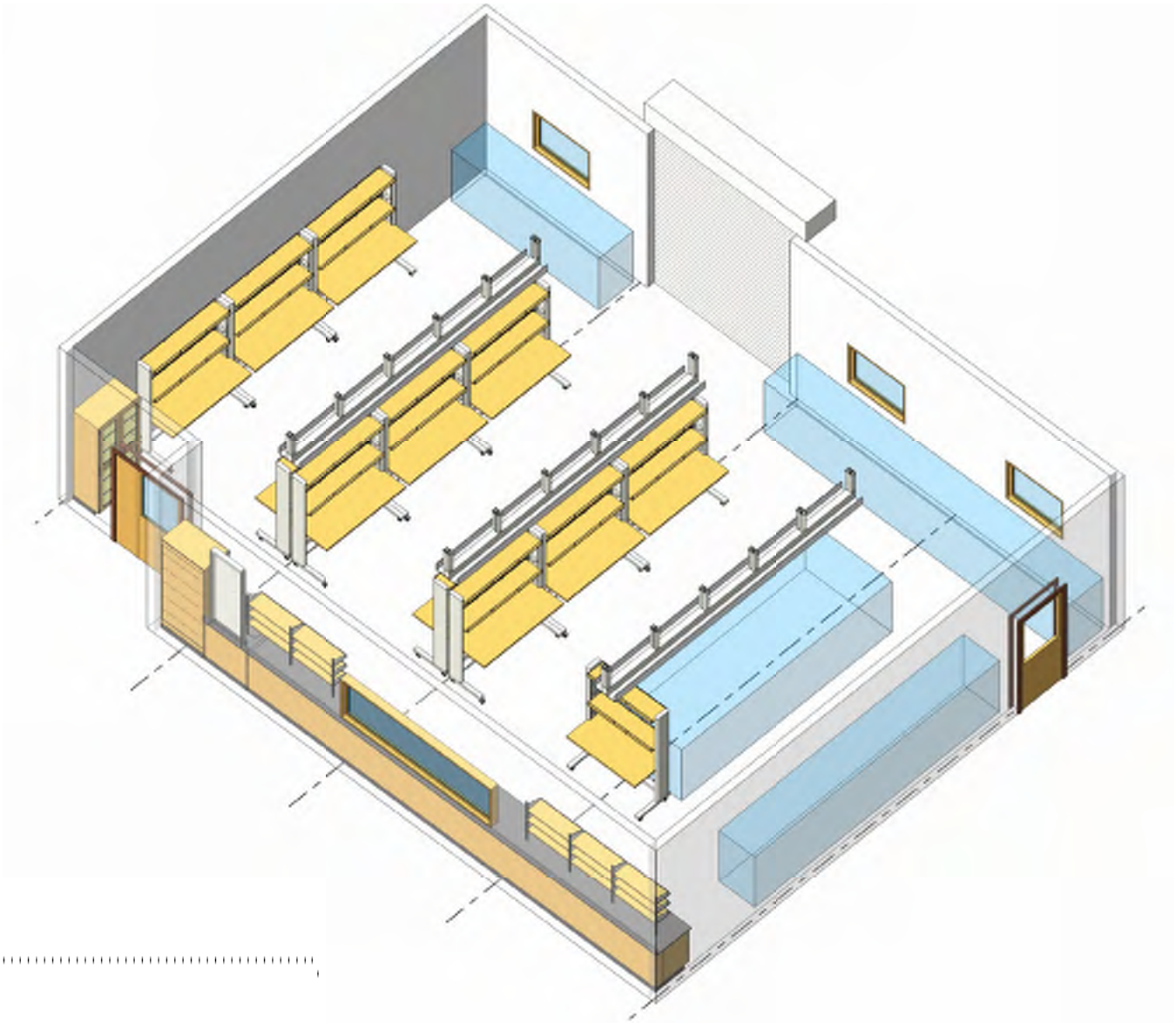
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

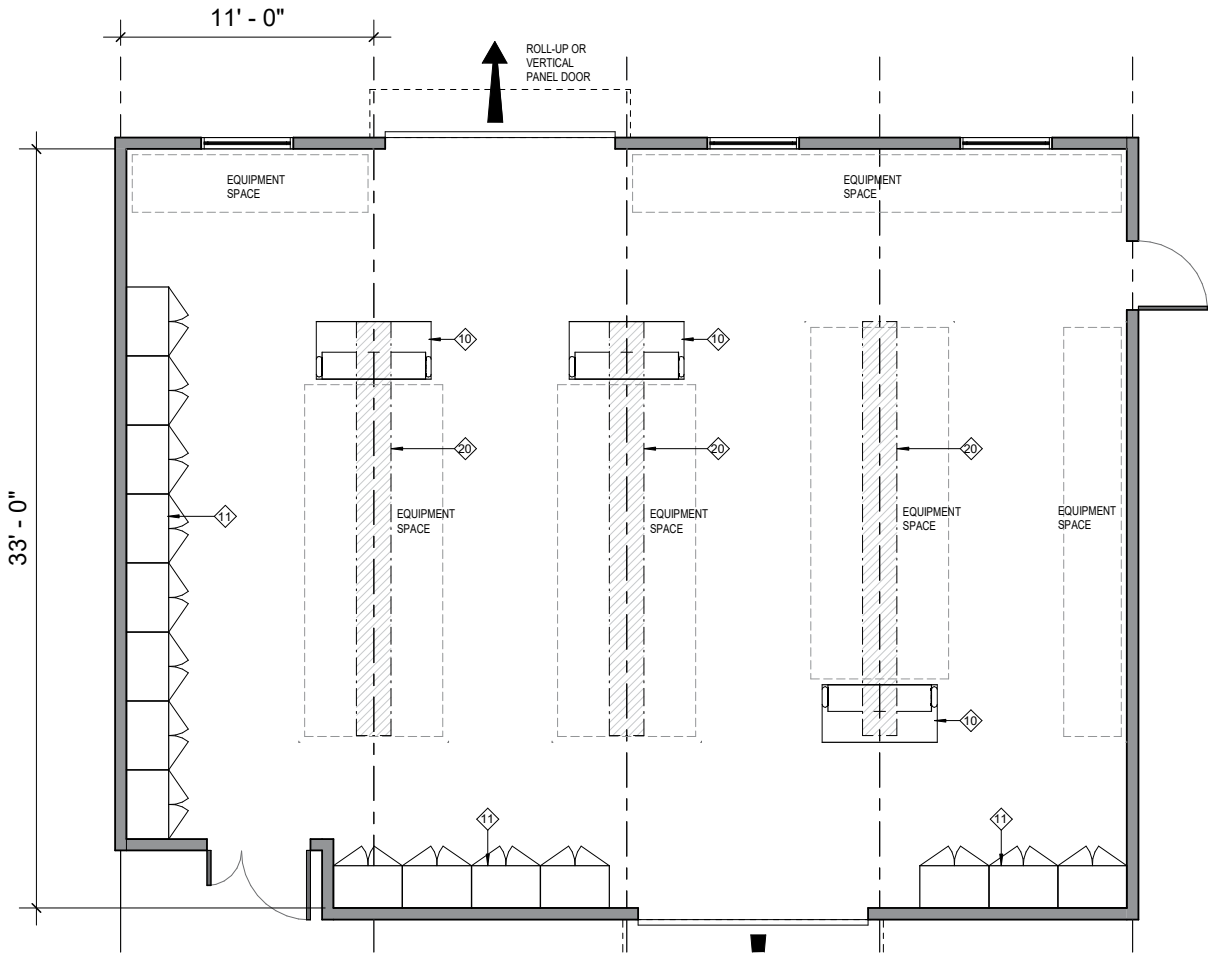
DEPARTMENT: ME **SPACE ID NO: 1.13 EB**
SPACE NAME: ME/MET PROJECTS LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.14 EB**
SPACE NAME: ME/METS PROJECT STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

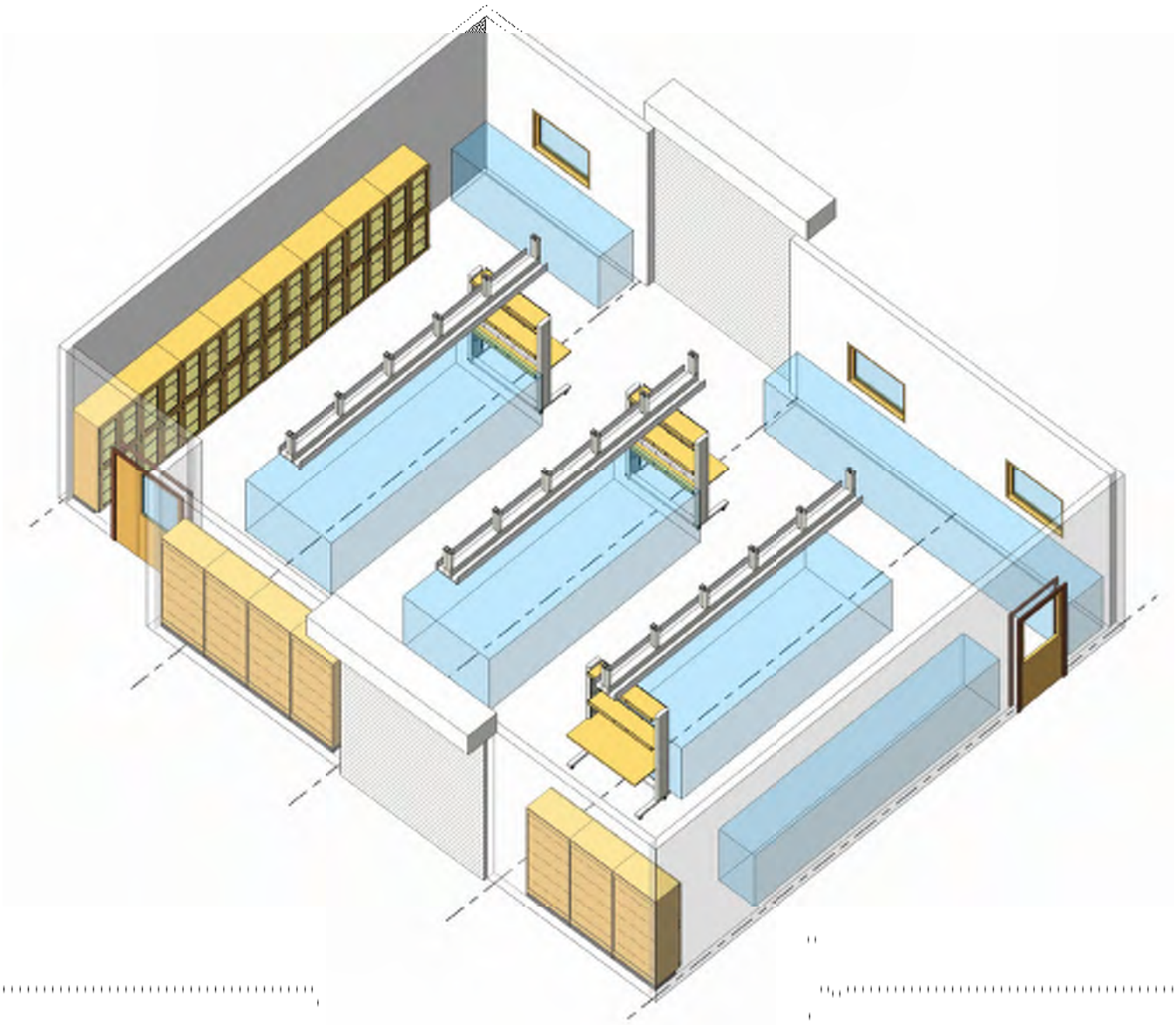


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

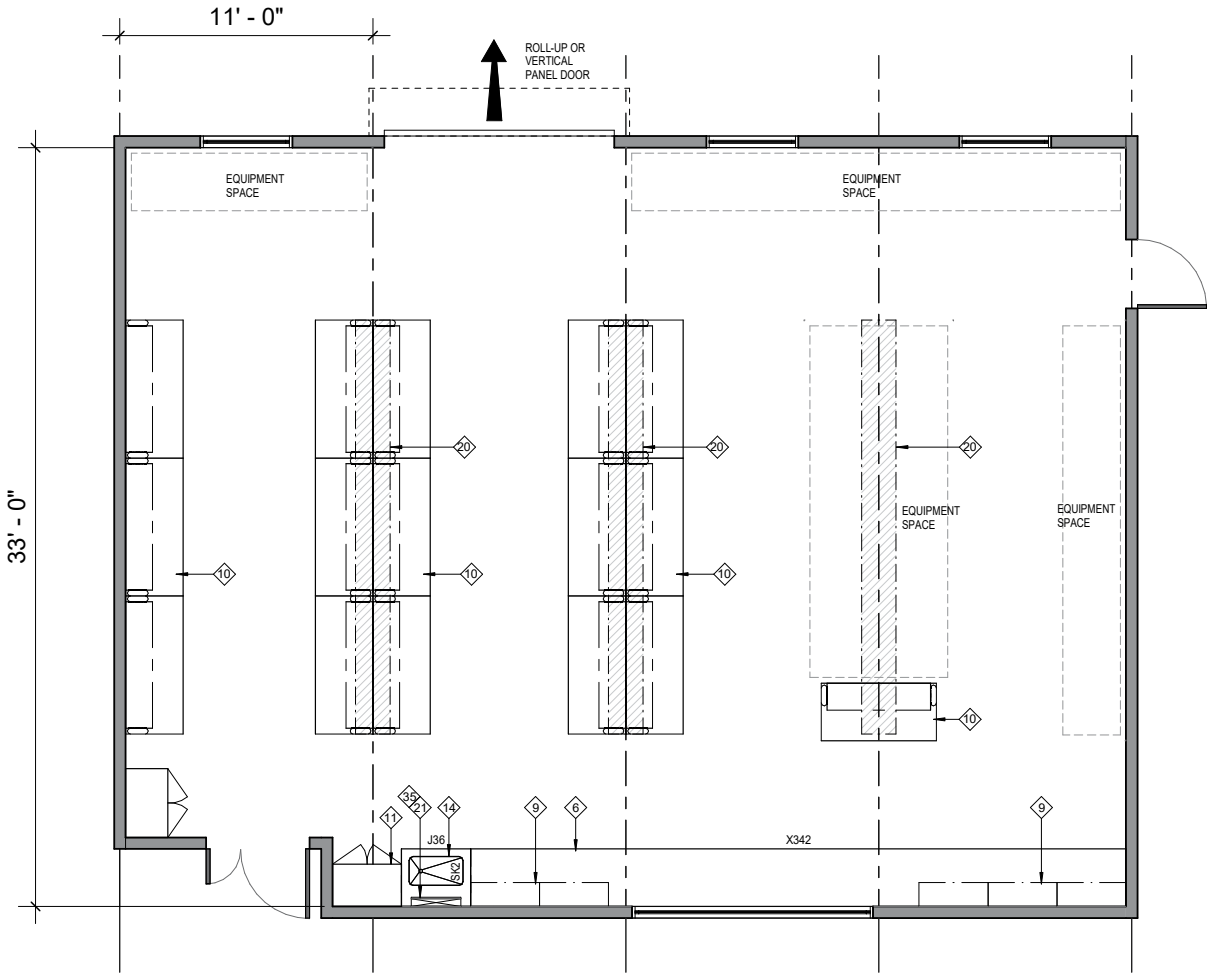
DEPARTMENT: ME **SPACE ID NO: 1.14 EB**
SPACE NAME: ME/METS PROJECT STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.15 EB**
SPACE NAME: TECH PROJECTS LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



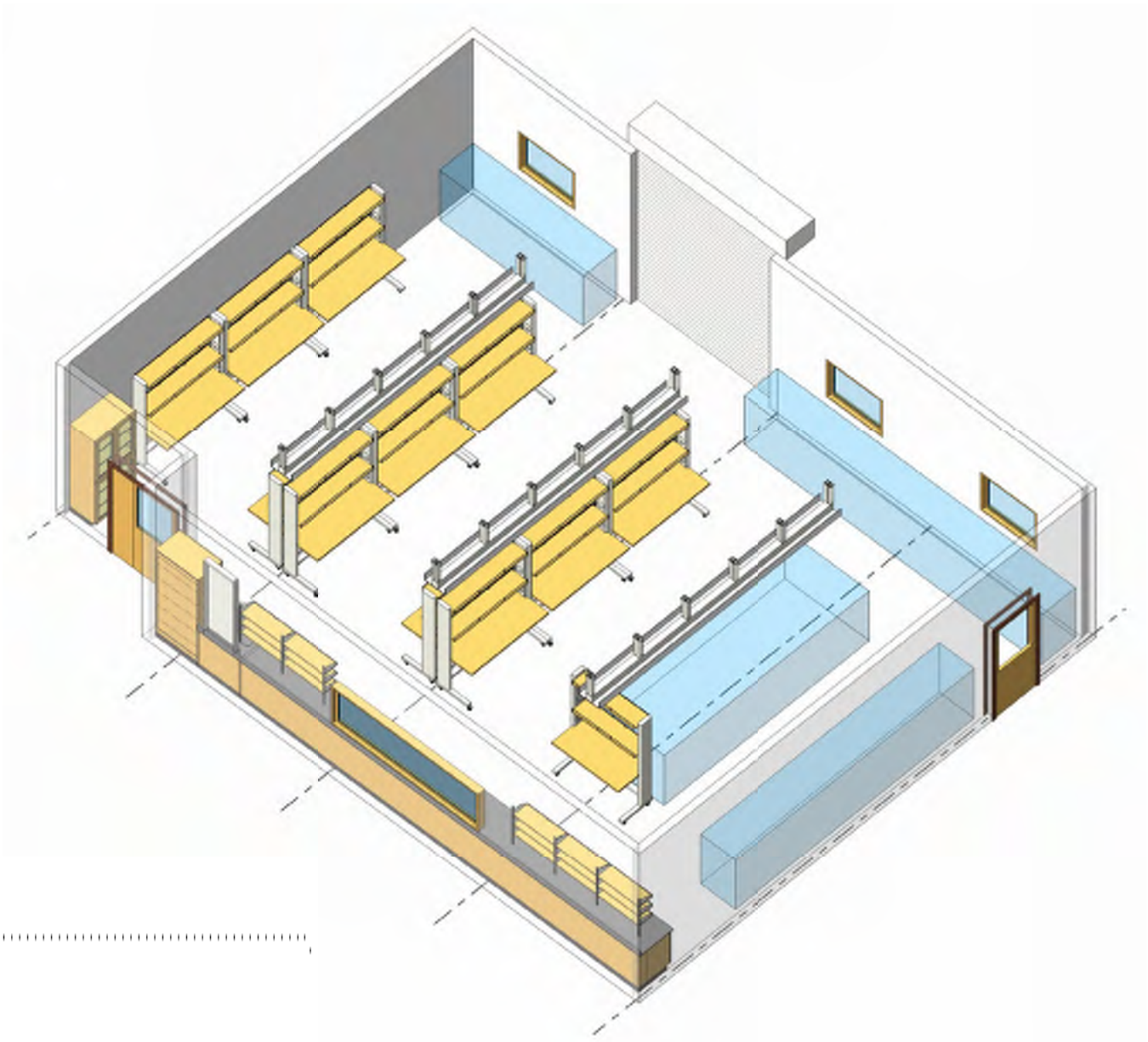
0' 2' 4' 8'
1/8" = 1'-0"

FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

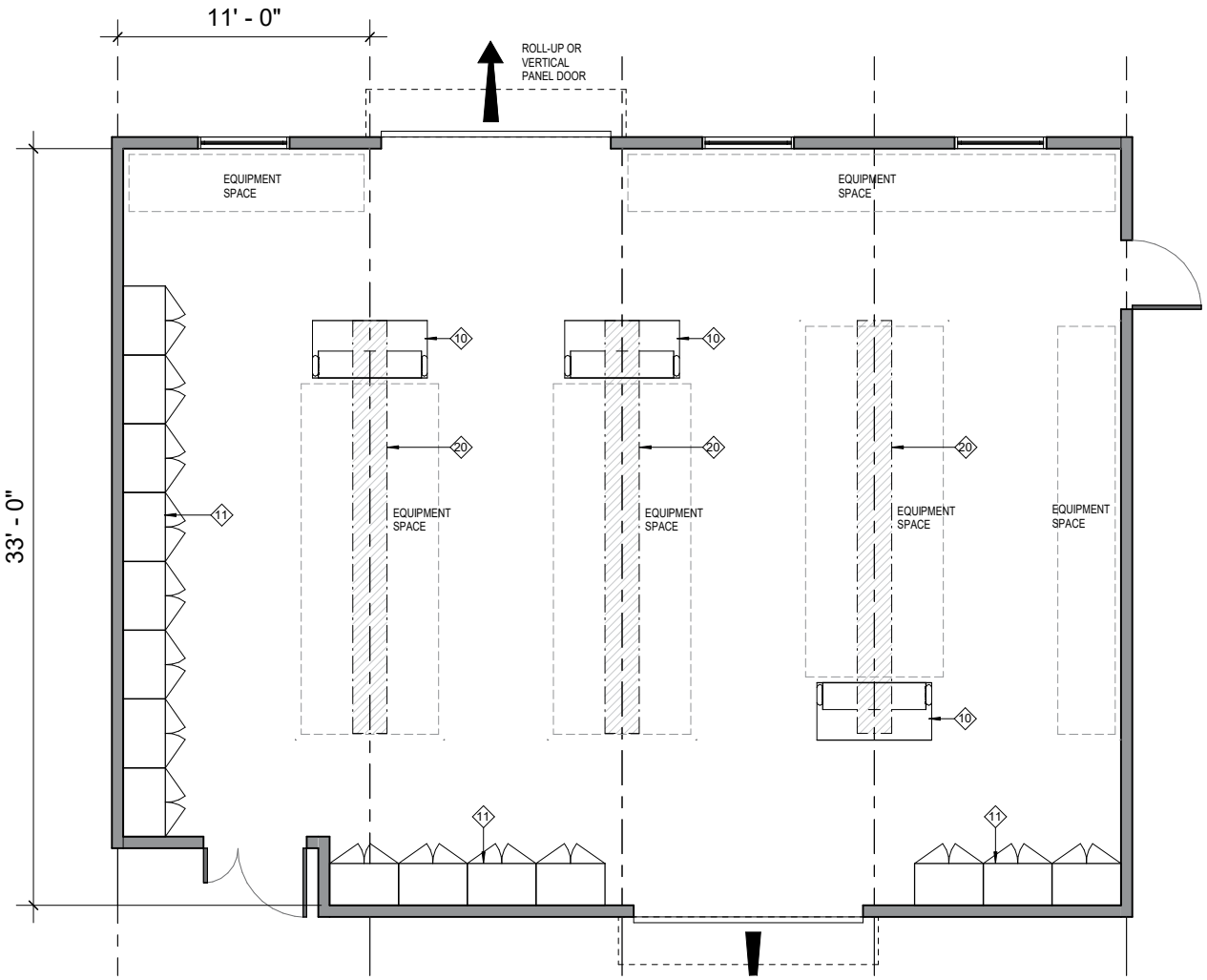
DEPARTMENT: ME **SPACE ID NO: 1.15 EB**
SPACE NAME: TECH PROJECTS LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.16 EB**
SPACE NAME: TECH PROJECT STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

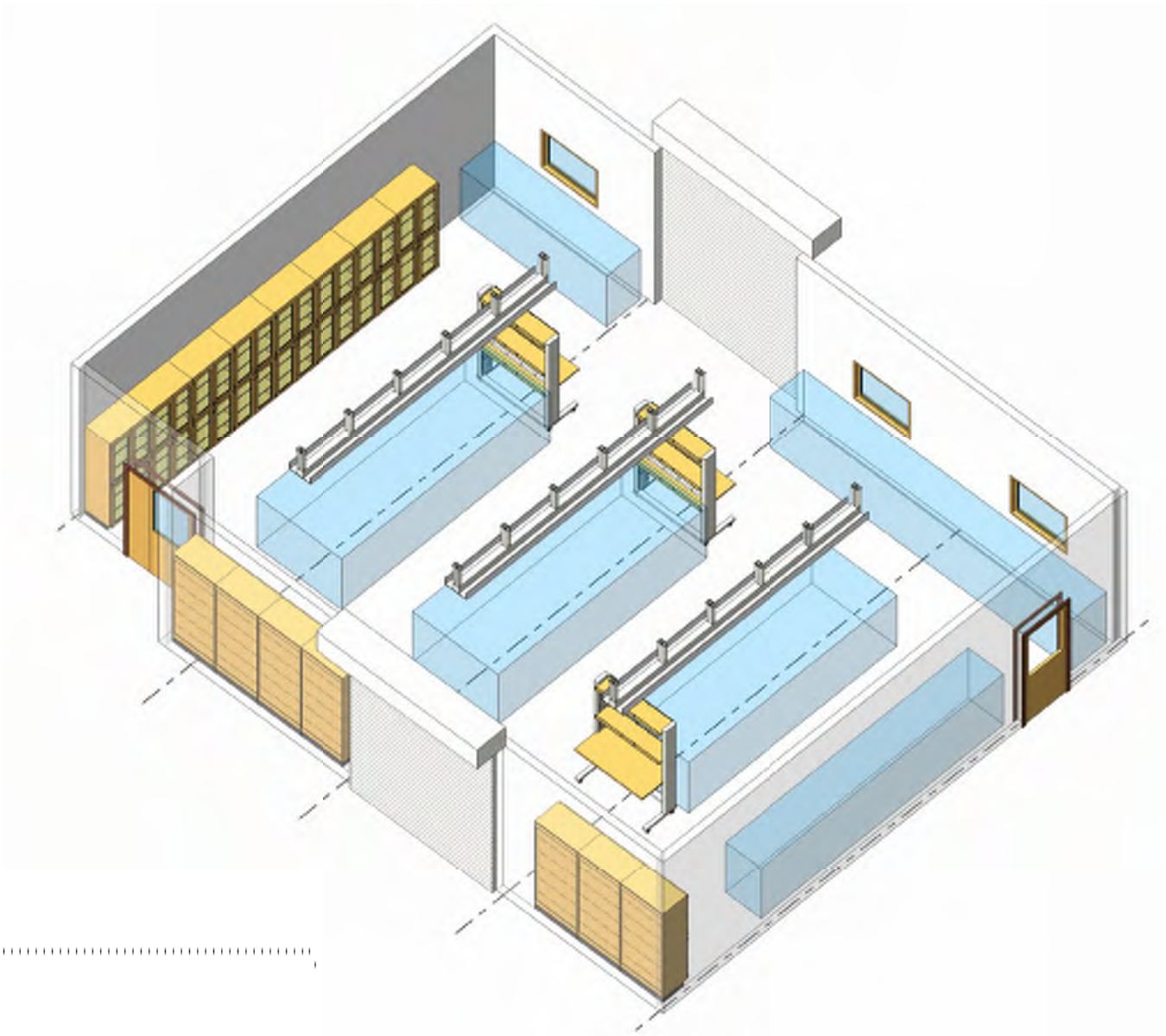


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

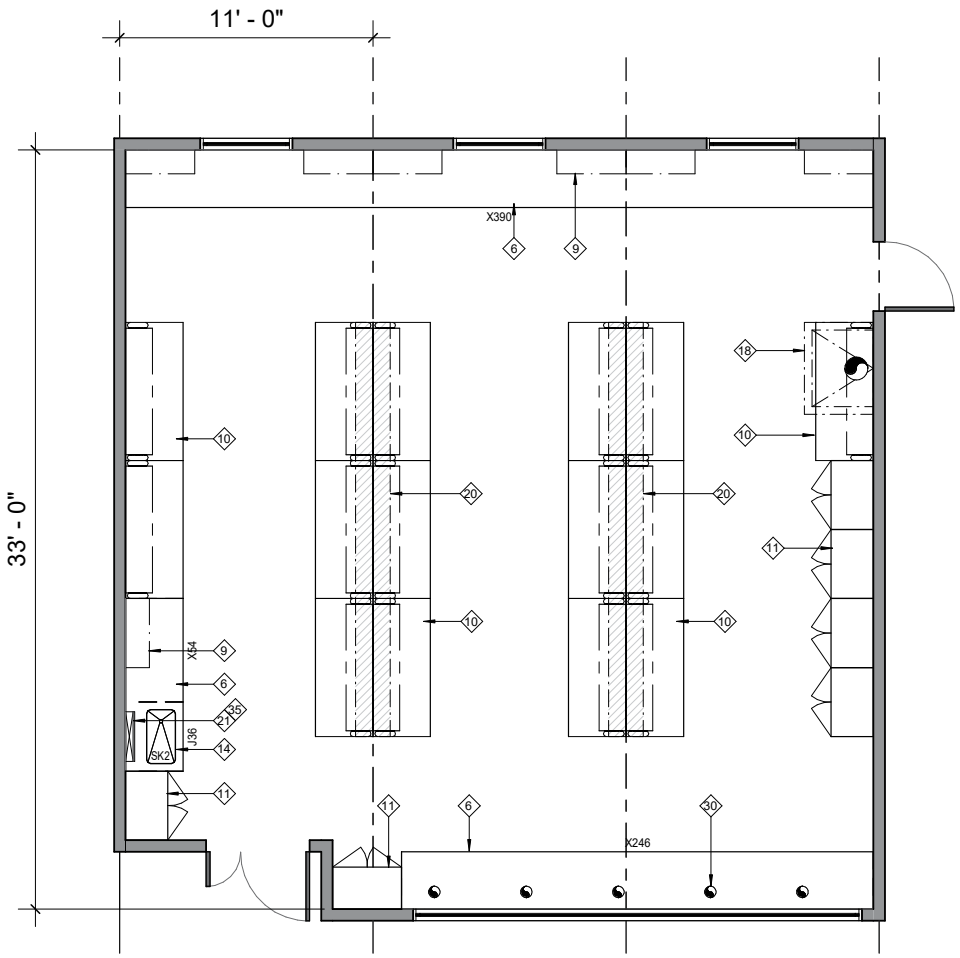
DEPARTMENT: ME **SPACE ID NO: 1.16 EB**
SPACE NAME: TECH PROJECT STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.18 EB**
SPACE NAME: MAKER SPACE **AREA NSF: 1,089**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



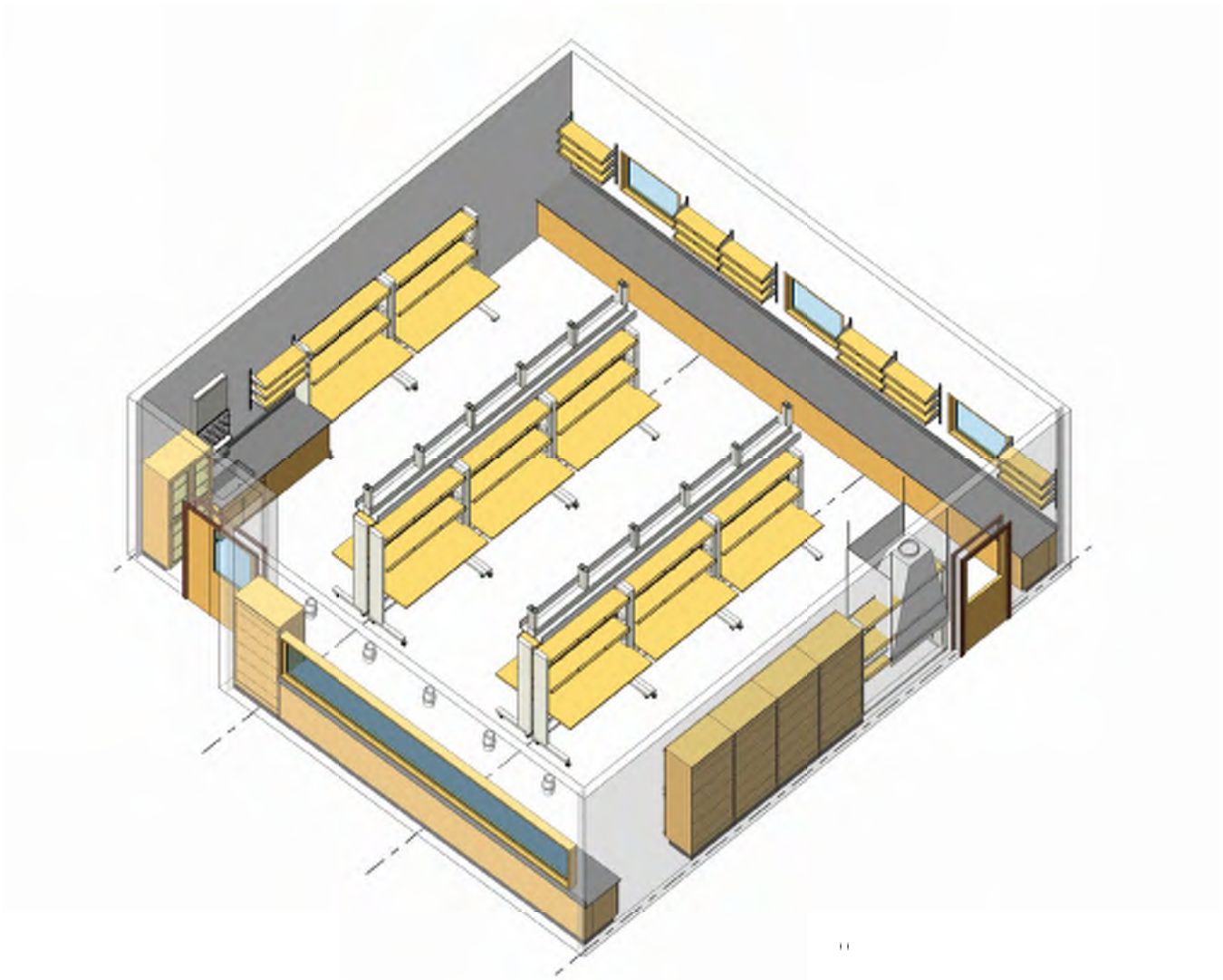
0' 2' 4' 8'
1/8" = 1'-0"

FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME **SPACE ID NO: 1.18 EB**
SPACE NAME: MAKER SPACE **AREA NSF: 1,089**

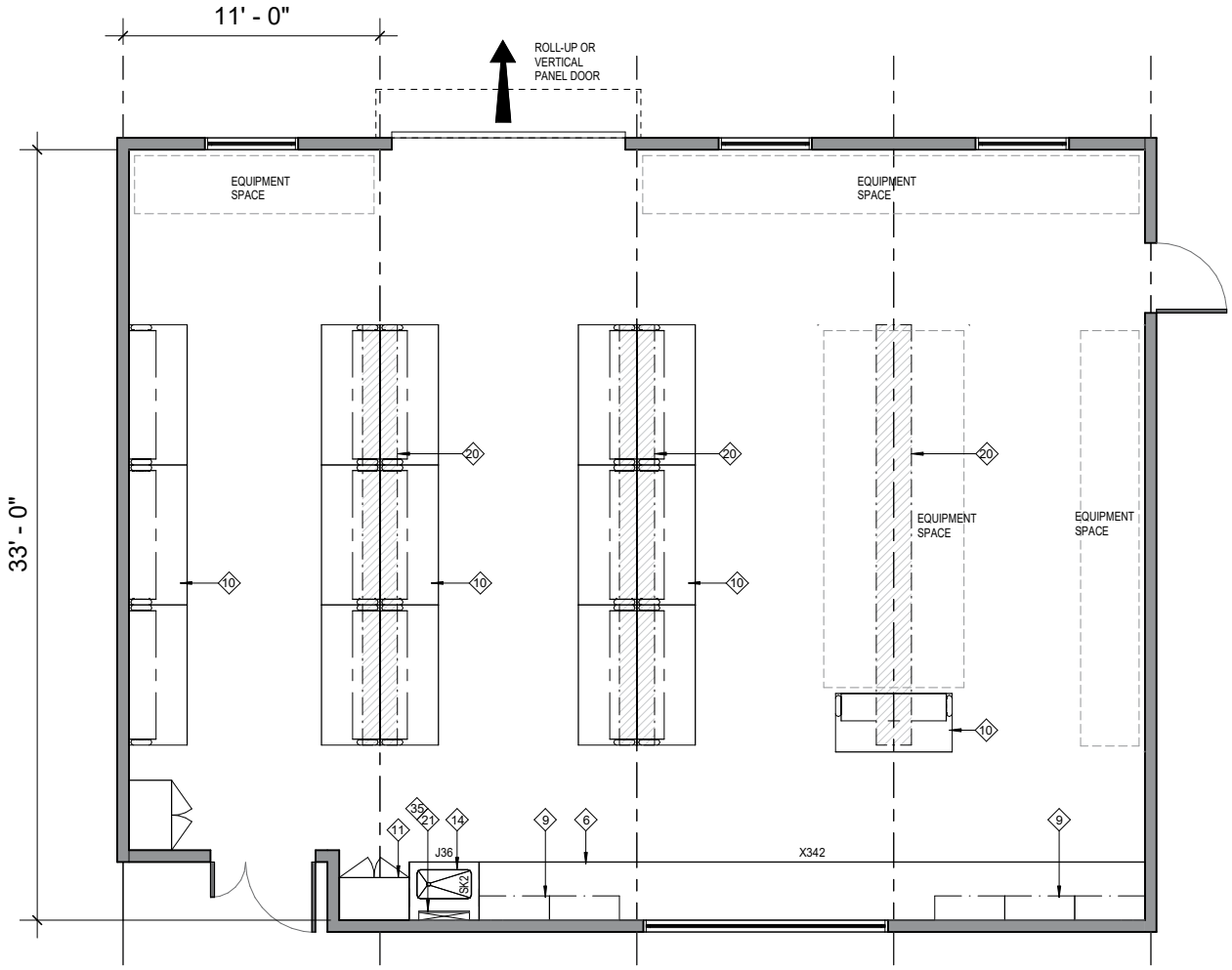
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: CLUB ROOM LAB

SPACE ID NO: 1.17 EB
AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

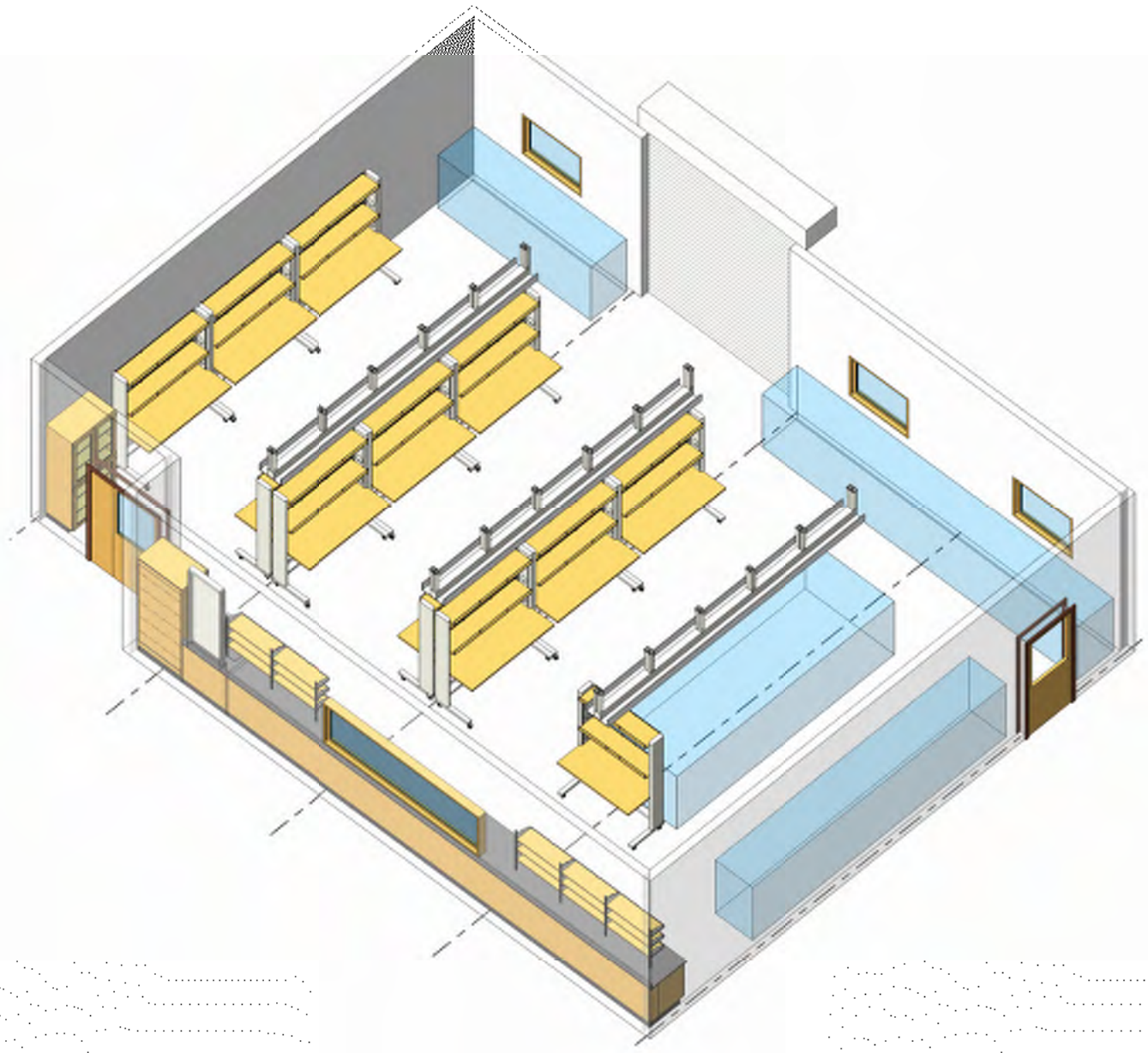


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME
SPACE NAME: CLUB ROOM LAB
SPACE ID NO: 1.17 EB
AREA NSF: 1,452

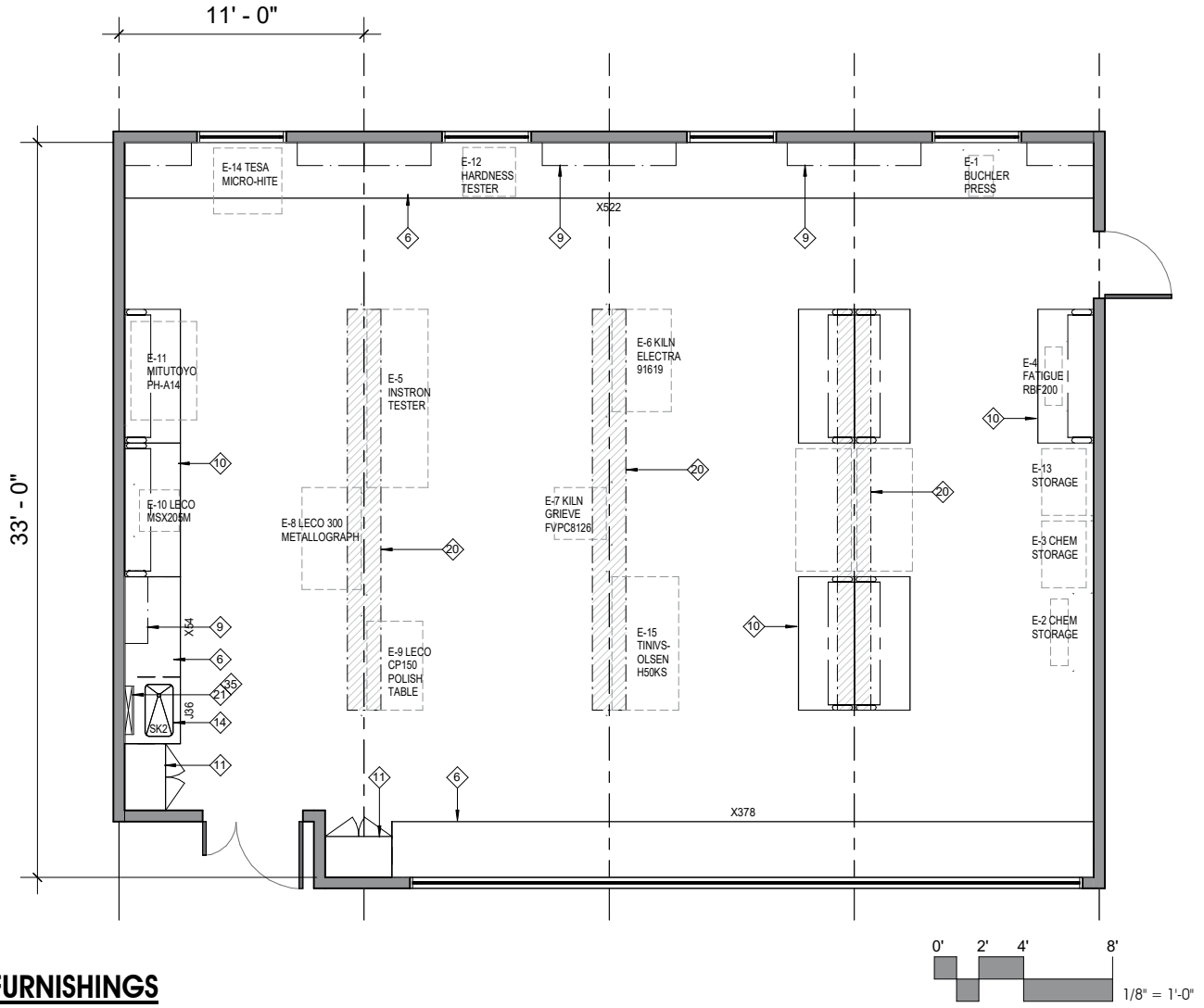
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: MATERIAL SCIENCE

SPACE ID NO: 1.04 CEB
AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

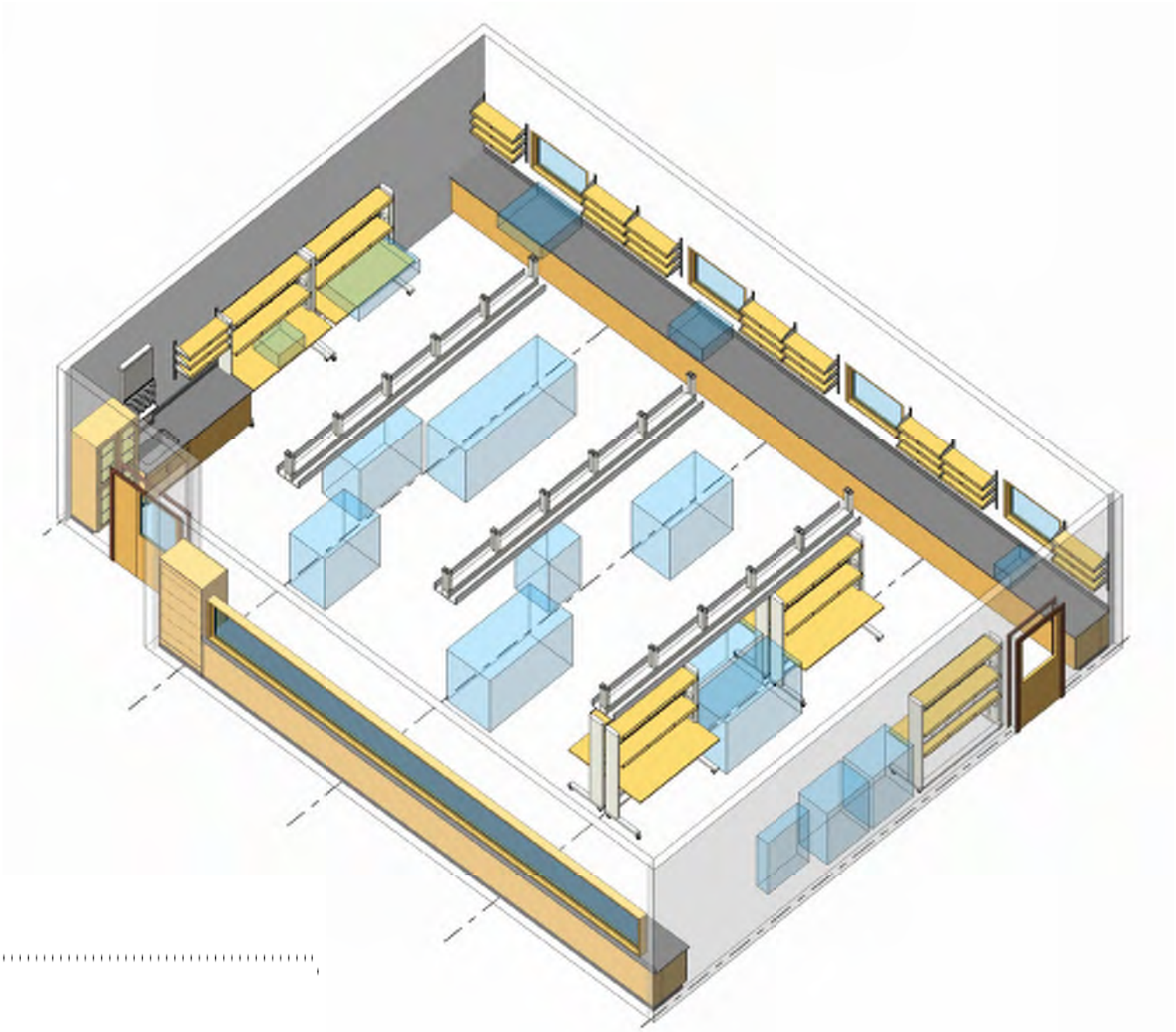


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME **SPACE ID NO: 1.04 CEB**
SPACE NAME: MATERIAL SCIENCE **AREA NSF: 1,452**

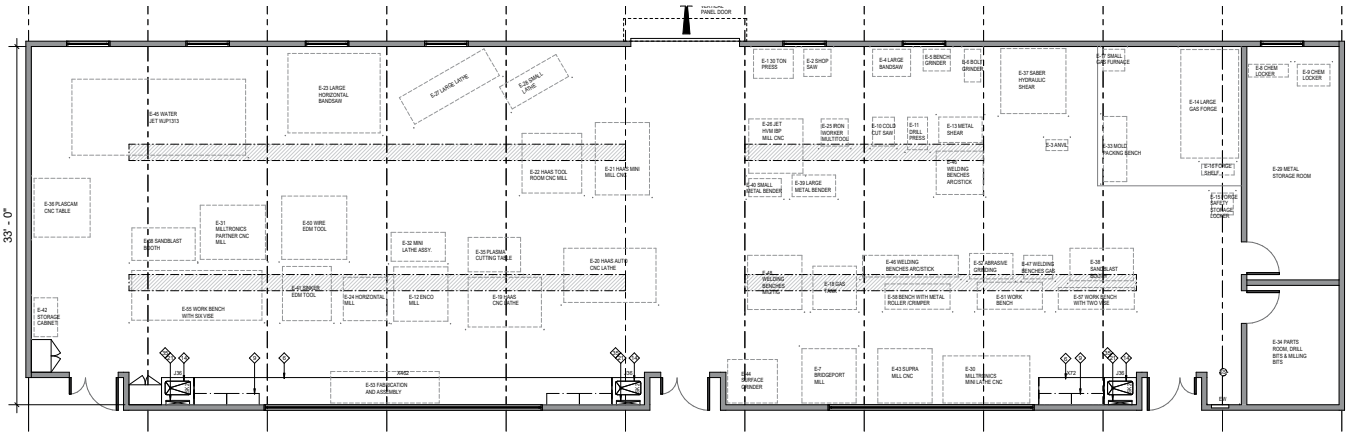
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: METALLICS LAB

SPACE ID NO: 1.02 EB
AREA NSF: 3,993

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



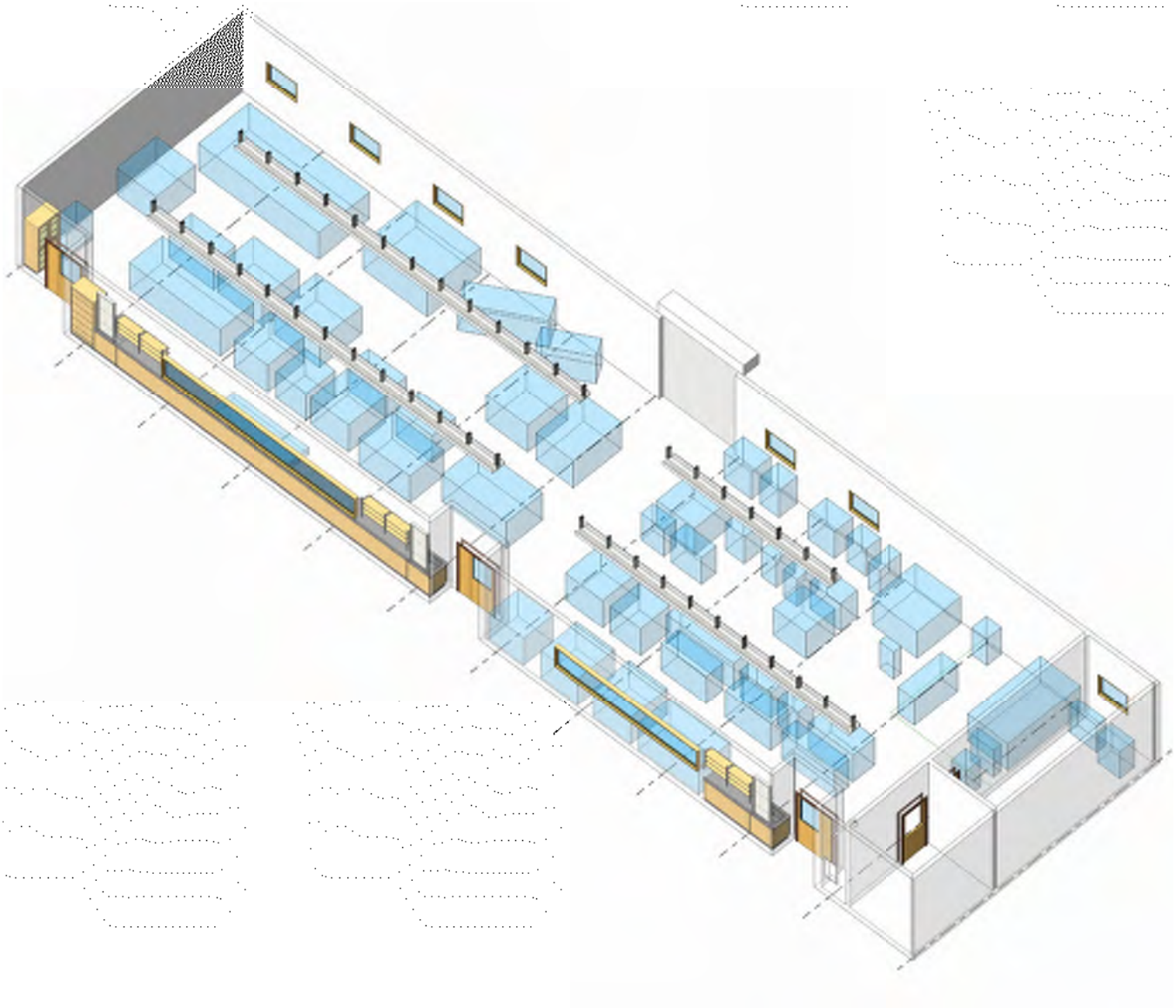
FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

DEPARTMENT: ME
SPACE NAME: METALLICS LAB

SPACE ID NO: 1.02 EB
AREA NSF: 3,993

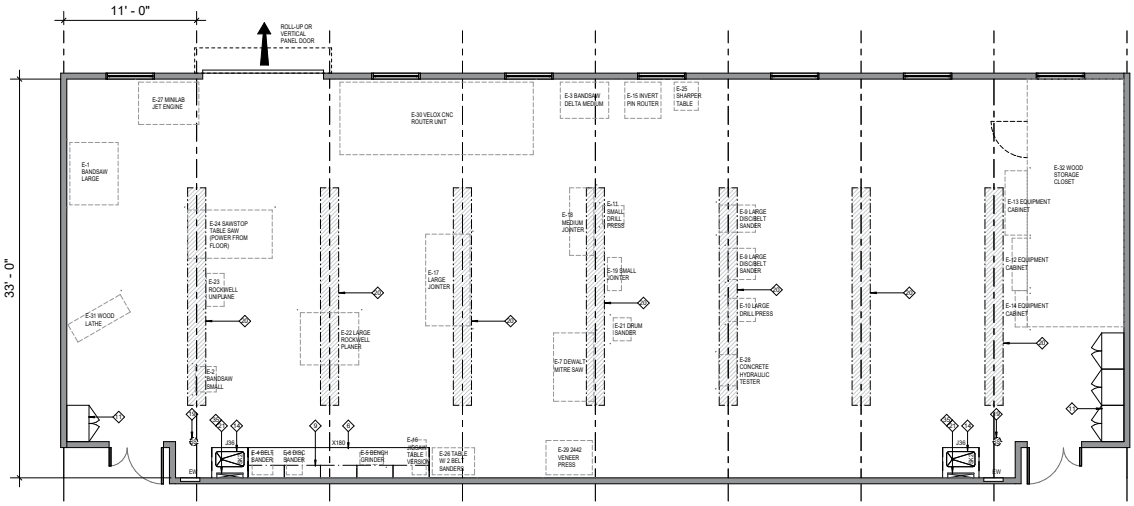
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: WOOD SHOP

SPACE ID NO: 1.01 EB
AREA NSF: 2,904

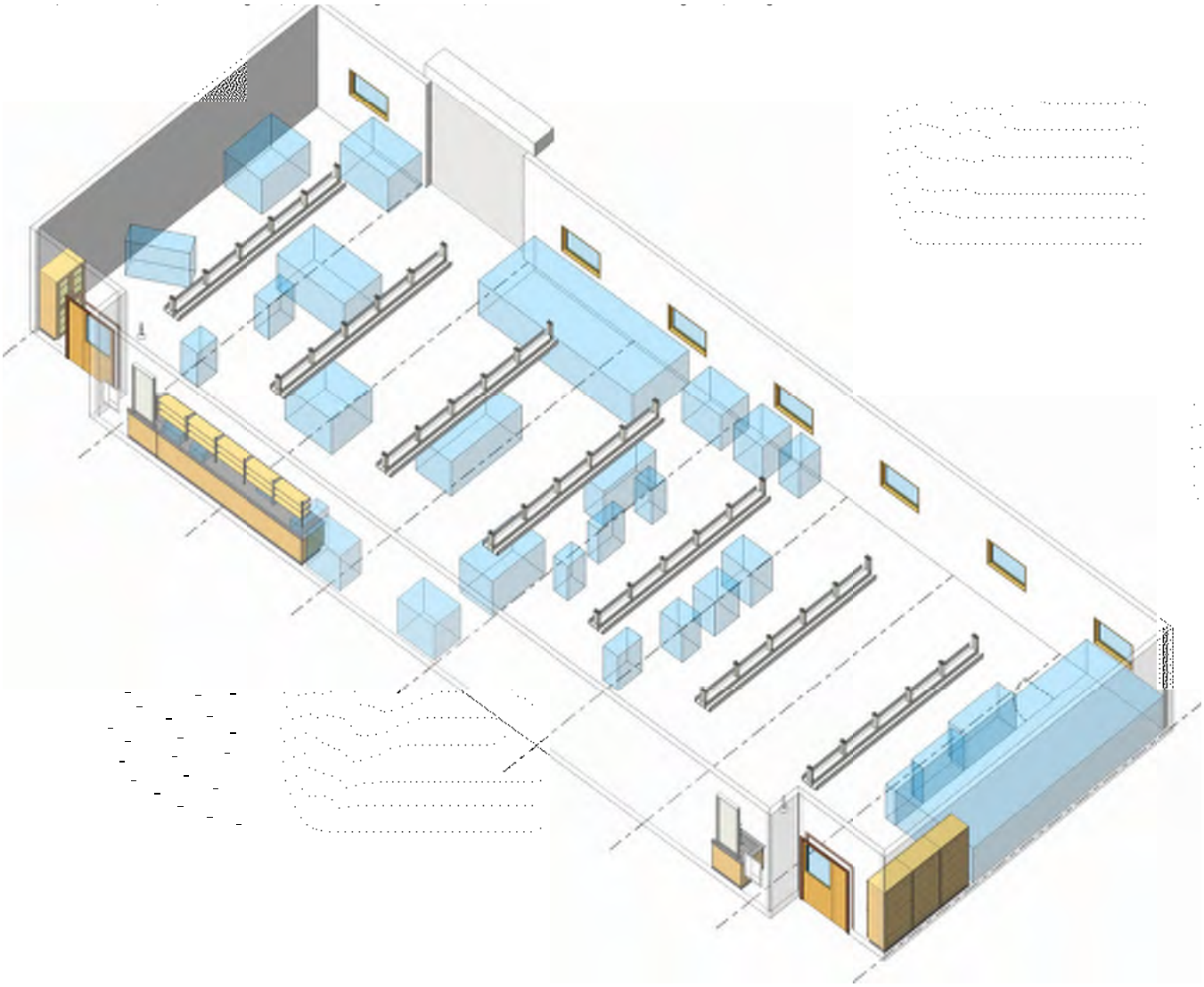
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: WOOD SHOP

SPACE ID NO: 1.01 EB
AREA NSF: 2,904

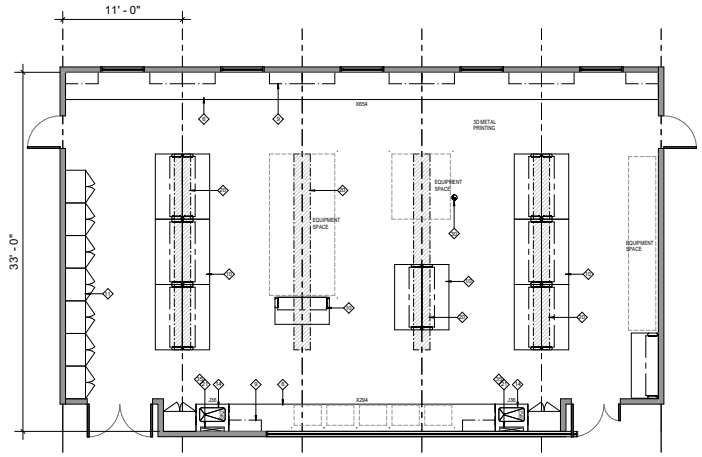
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: ADDITIVE MANUFACTURING

SPACE ID NO: 1.03 CEB
AREA NSF: 1,815

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

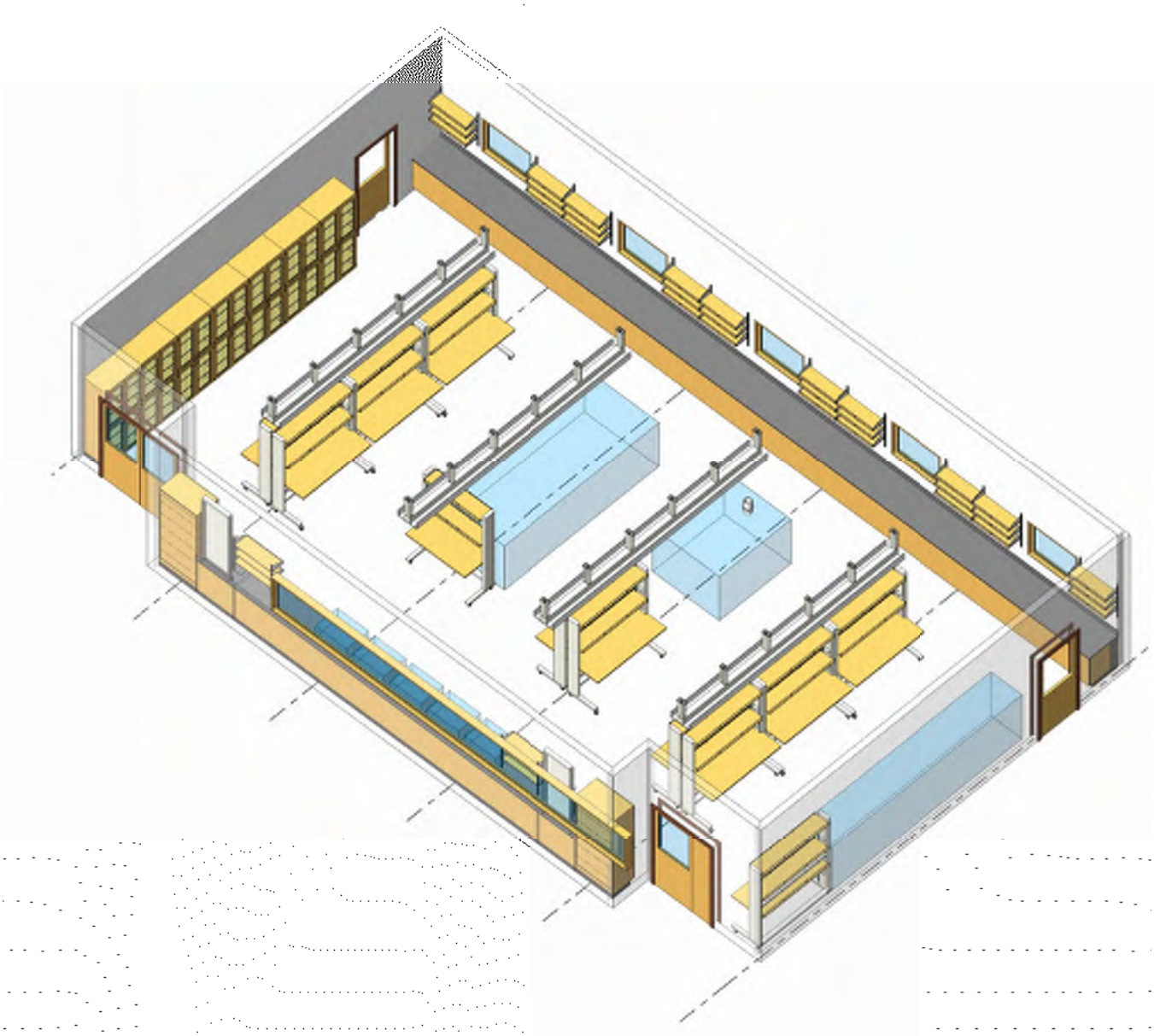


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

DEPARTMENT: ME **SPACE ID NO: 1.03 CEB**
SPACE NAME: ADDITIVE MANUFACTURING **AREA NSF: 1,815**

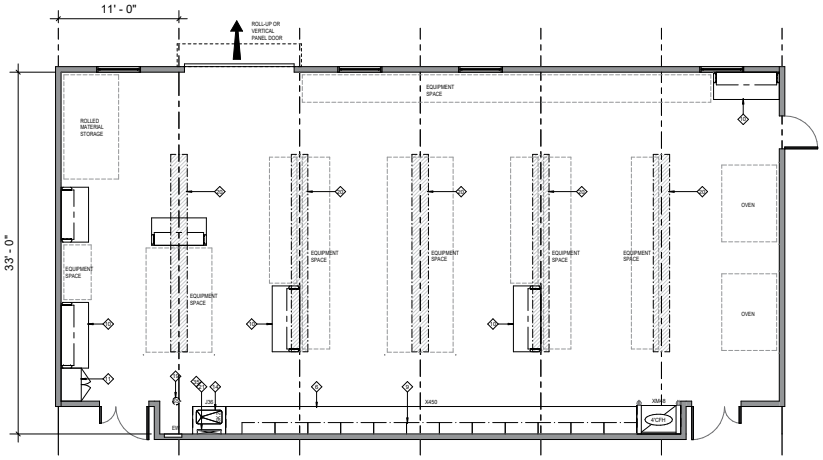
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: COMPOSITE LAB

SPACE ID NO: 1.01 CHN
AREA NSF: 2,178

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



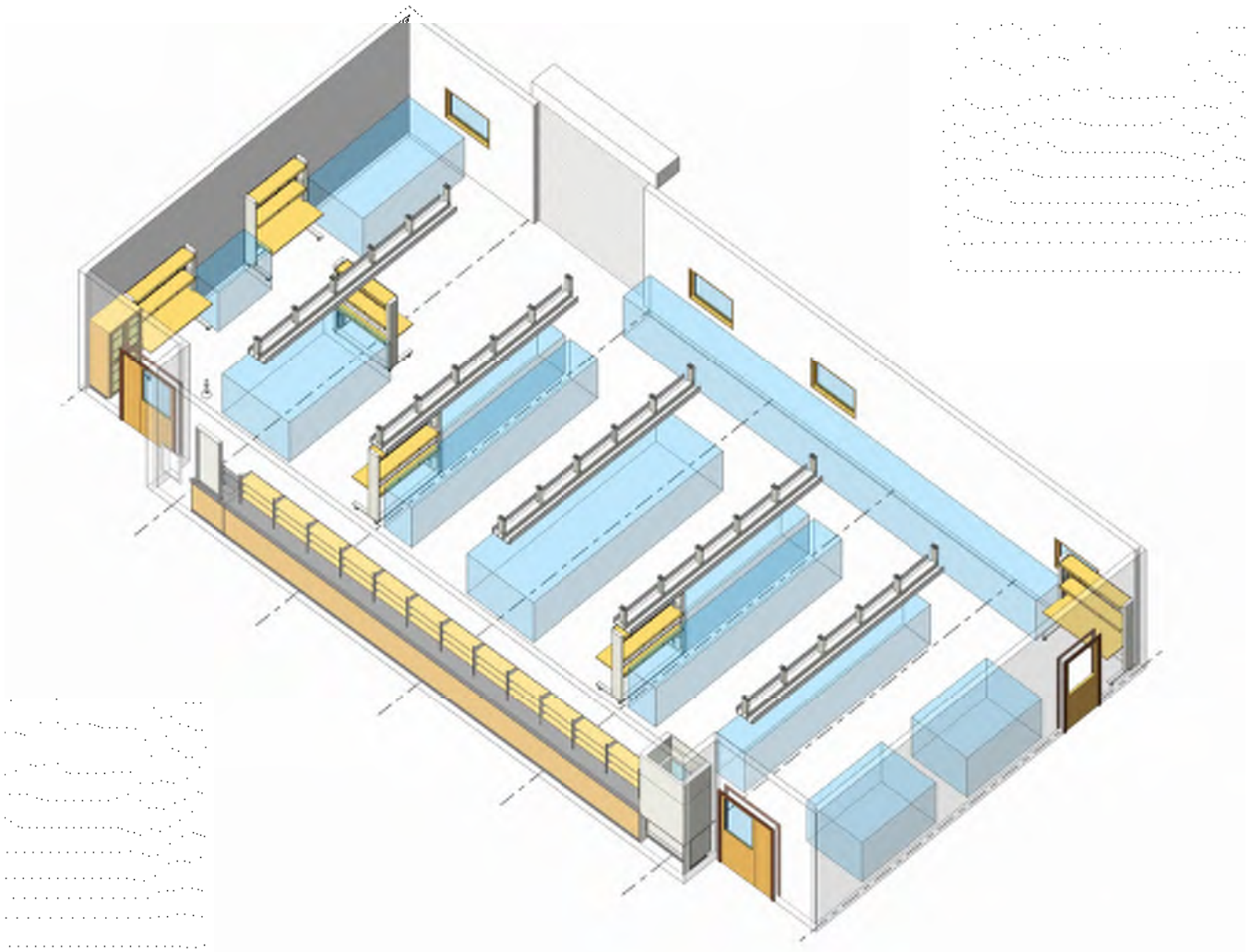
FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

0' 2' 4' 8'
1/8" = 1'-0"

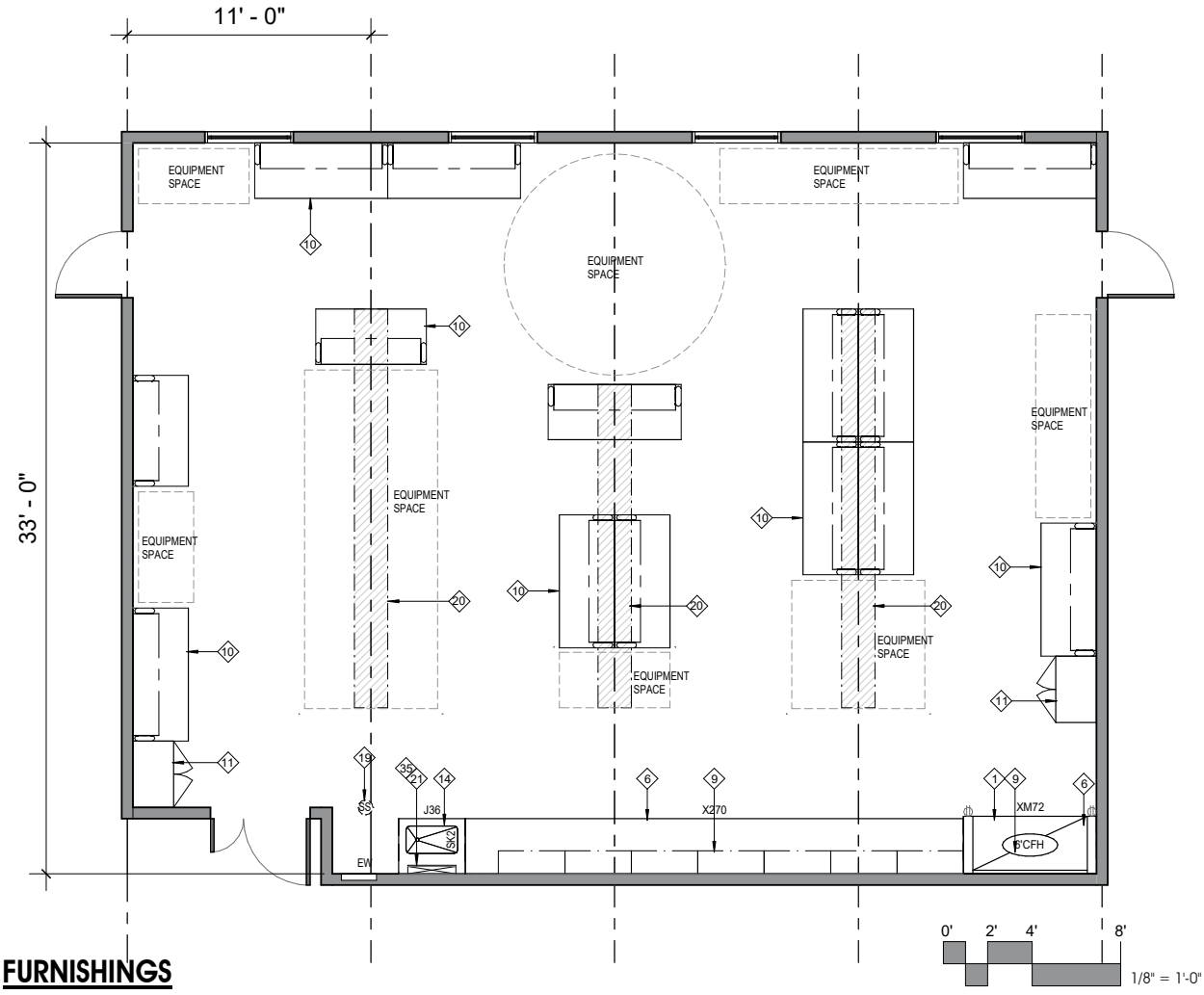
DEPARTMENT: ME **SPACE ID NO: 1.01 CHN**
SPACE NAME: COMPOSITE LAB **AREA NSF: 2,178**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 2.03 EB**
SPACE NAME: ROBOTICS RESEARCH LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

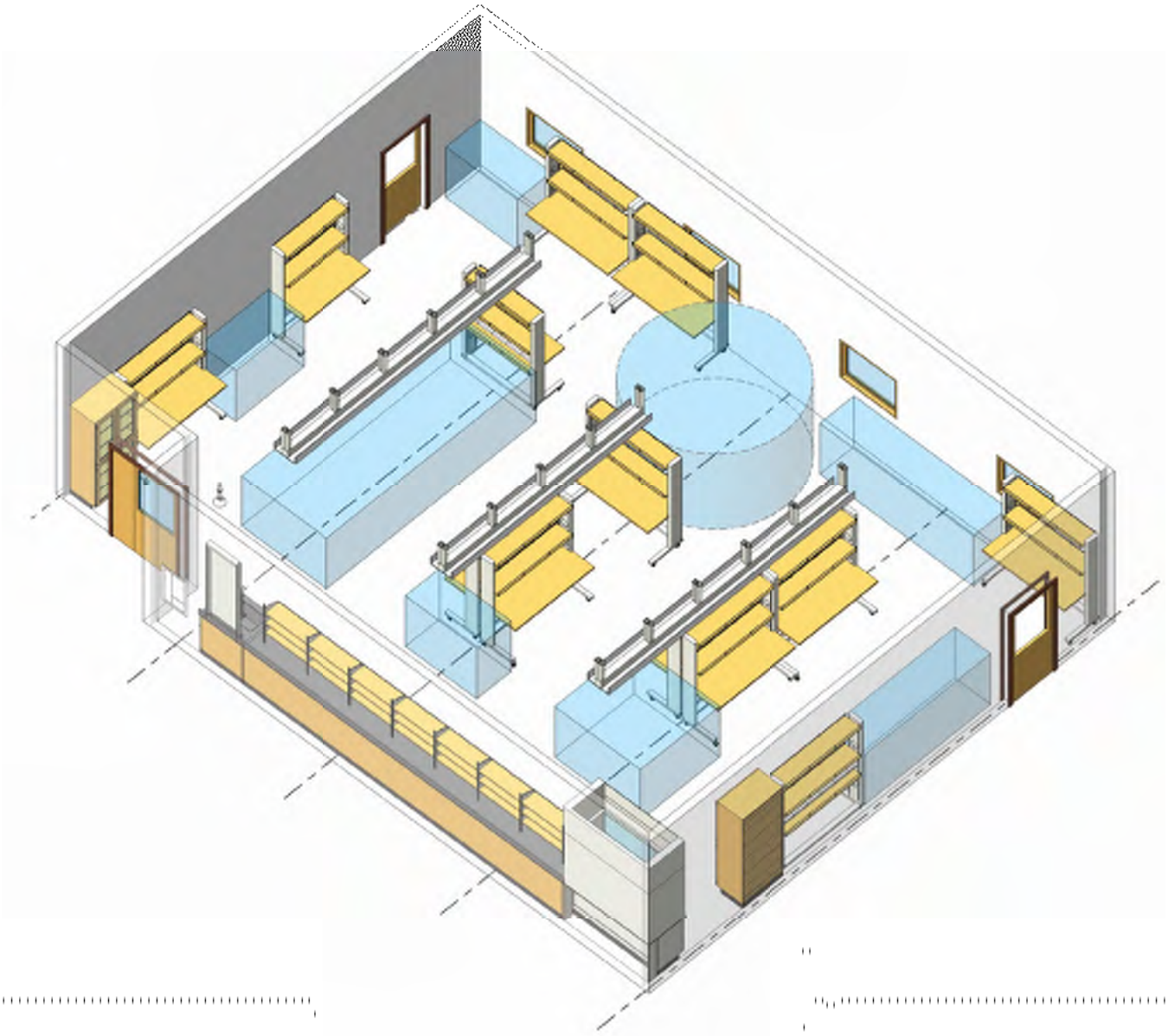


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME **SPACE ID NO: 2.03 EB**
SPACE NAME: ROBOTICS RESEARCH LAB **AREA NSF: 1,452**

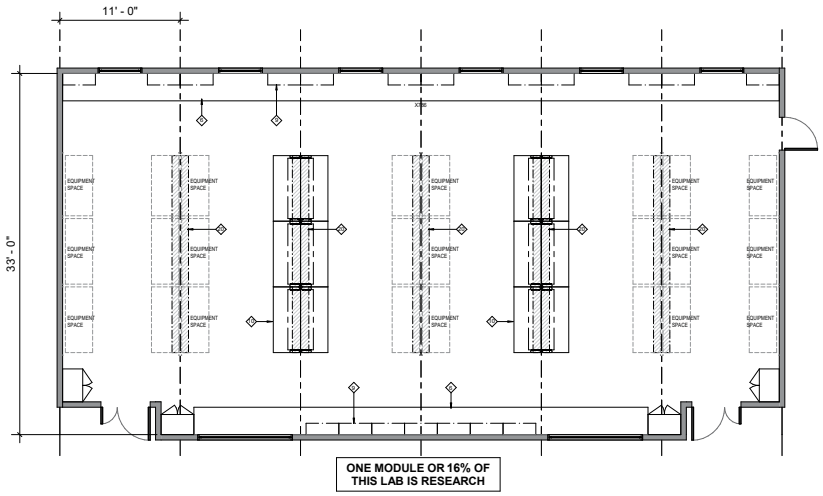
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: FLUID POWER LAB

SPACE ID NO: 1.04 EB
AREA NSF: 2,178

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



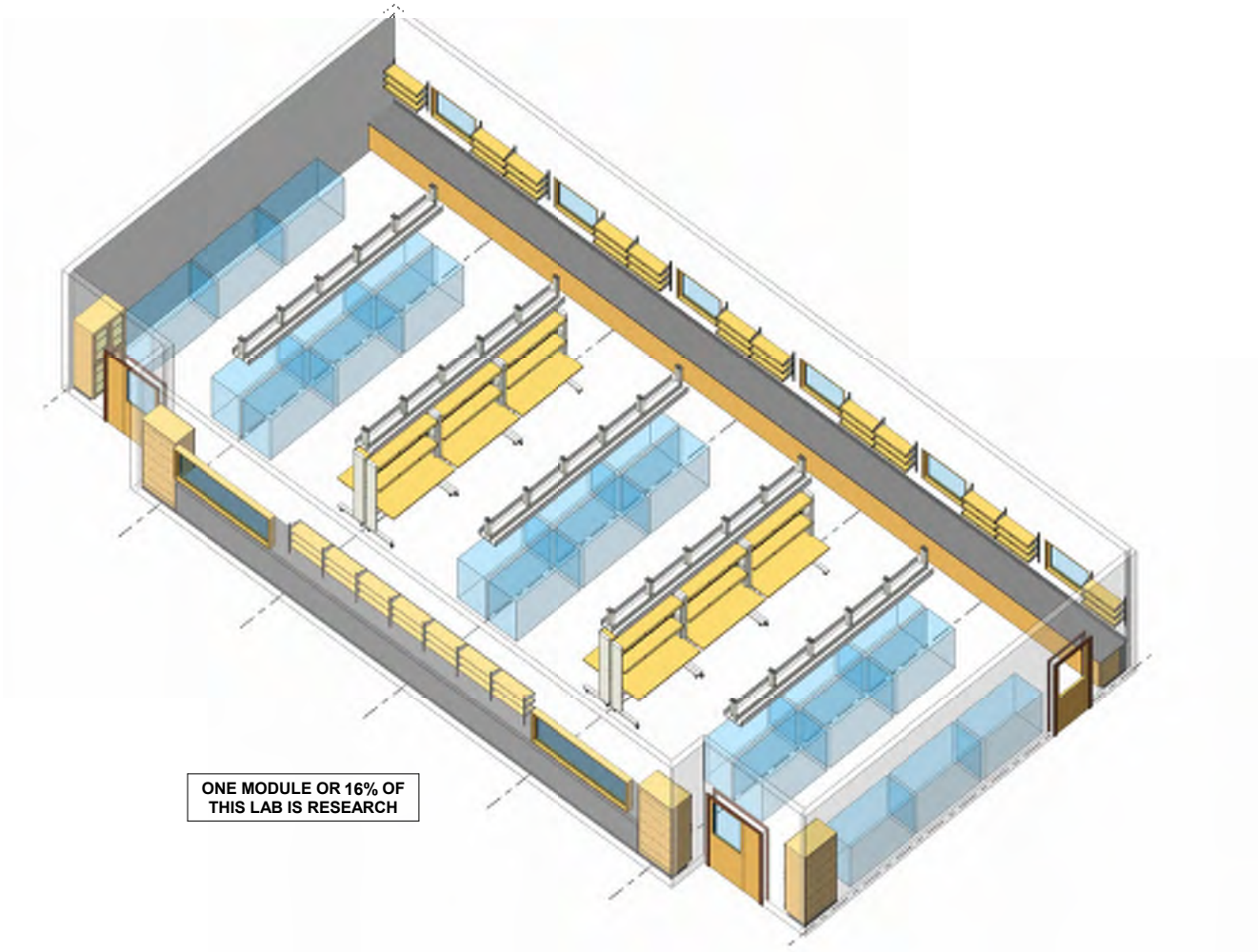
FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

DEPARTMENT: ME
SPACE NAME: FLUID POWER LAB

SPACE ID NO: 1.04 EB
AREA NSF: 2,178

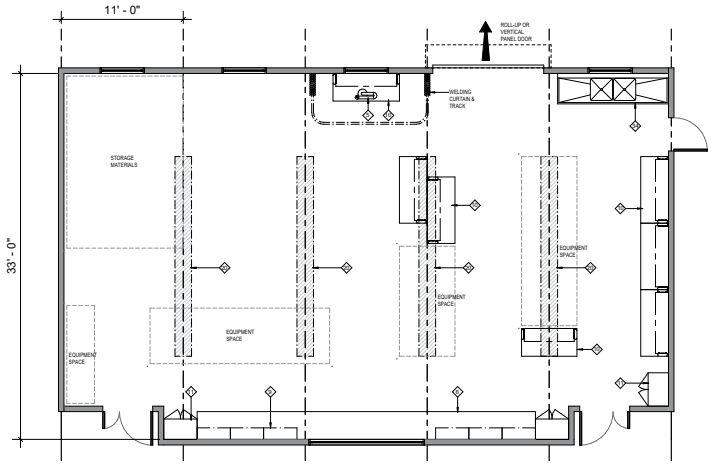
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: CONSTRUCTION LAB

SPACE ID NO: 1.05 EB
AREA NSF: 1,815

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

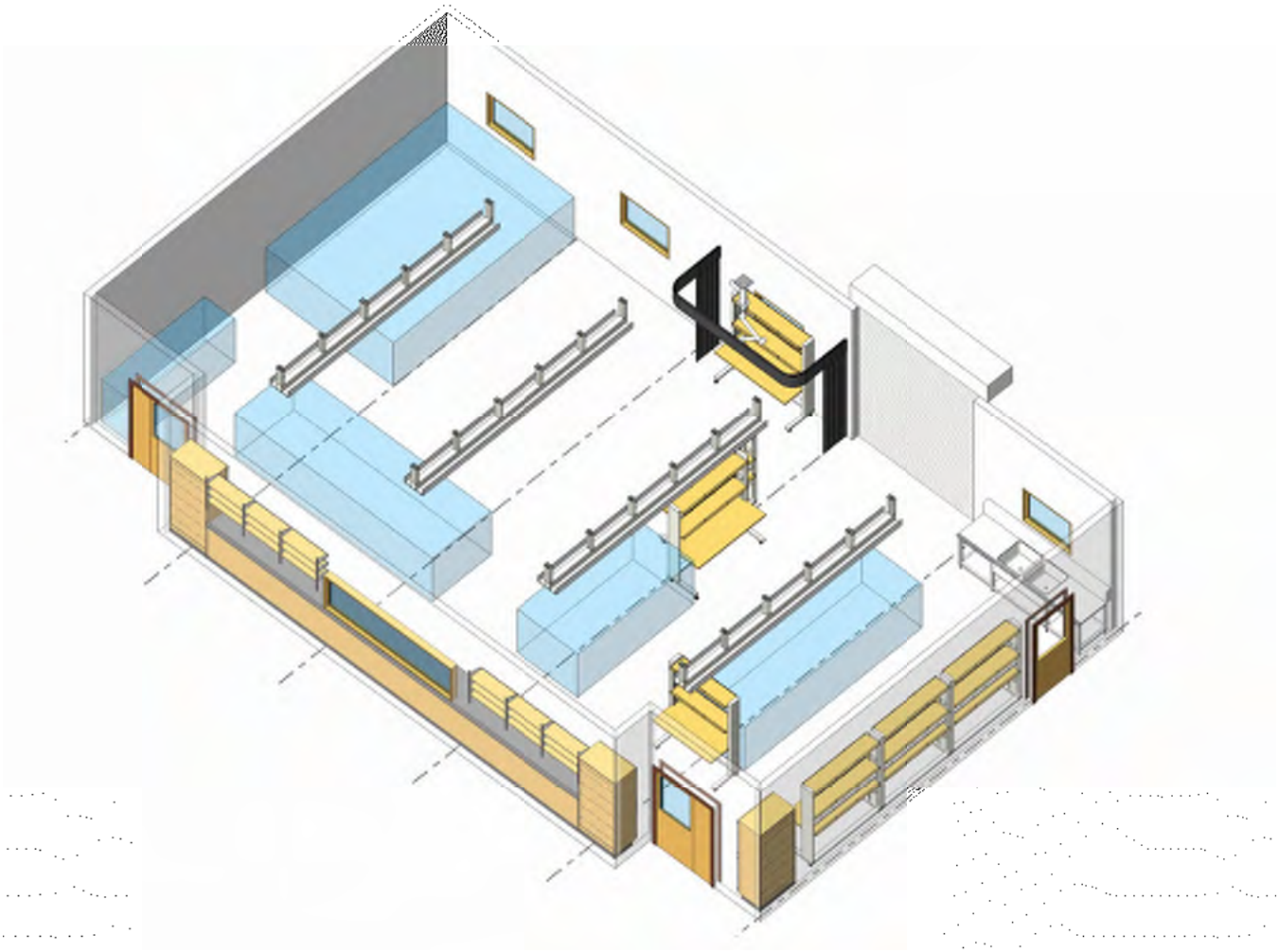


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

DEPARTMENT: ME **SPACE ID NO: 1.05 EB**
SPACE NAME: CONSTRUCTION LAB **AREA NSF: 1,815**

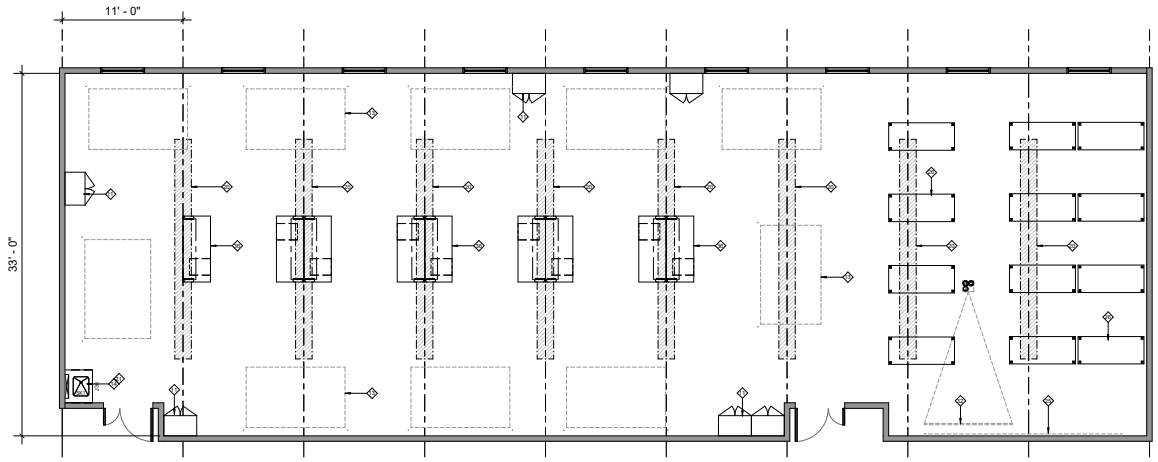
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: MET
SPACE NAME: PLC + CONTROLS + SENSORS LAB

SPACE ID NO: 1.03 CEB
AREA NSF: 3,267

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
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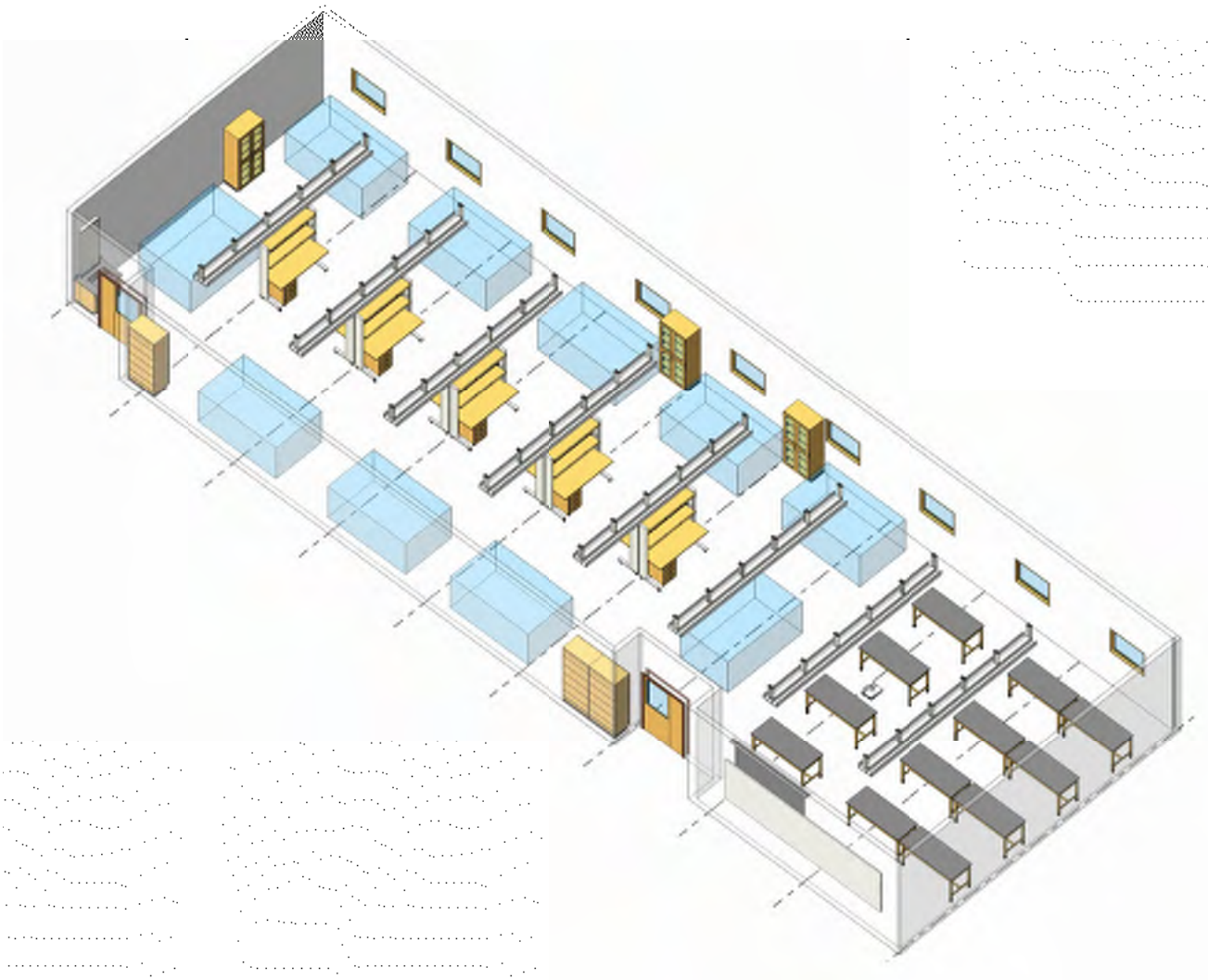
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

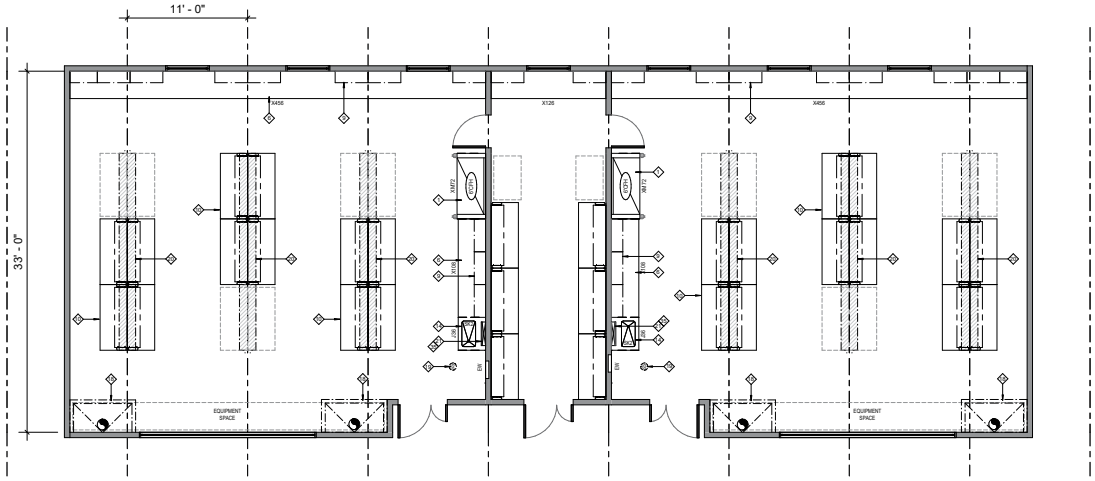
DEPARTMENT: MET **SPACE ID NO: 1.03 CEB**
SPACE NAME: PLC + CONTROLS + SENSORS LAB **AREA NSF: 3,267**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME / CE **SPACE ID NO: 1.01/1.02 CEB**
SPACE NAME: THERMODYNAMICS LAB **AREA NSF: 2,904**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
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16. Coat/ Bookbag Storage
17. Laser Curtain
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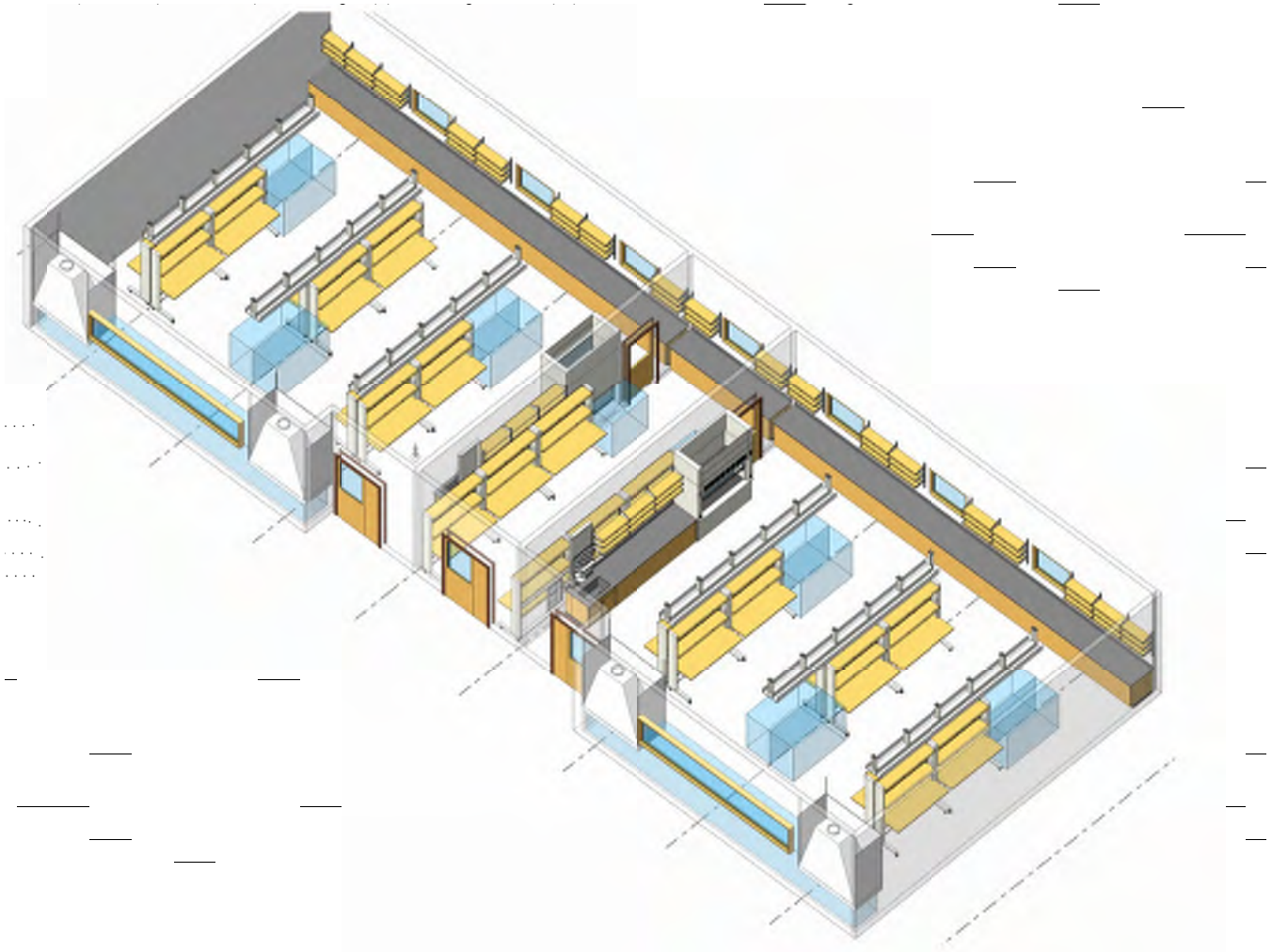
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

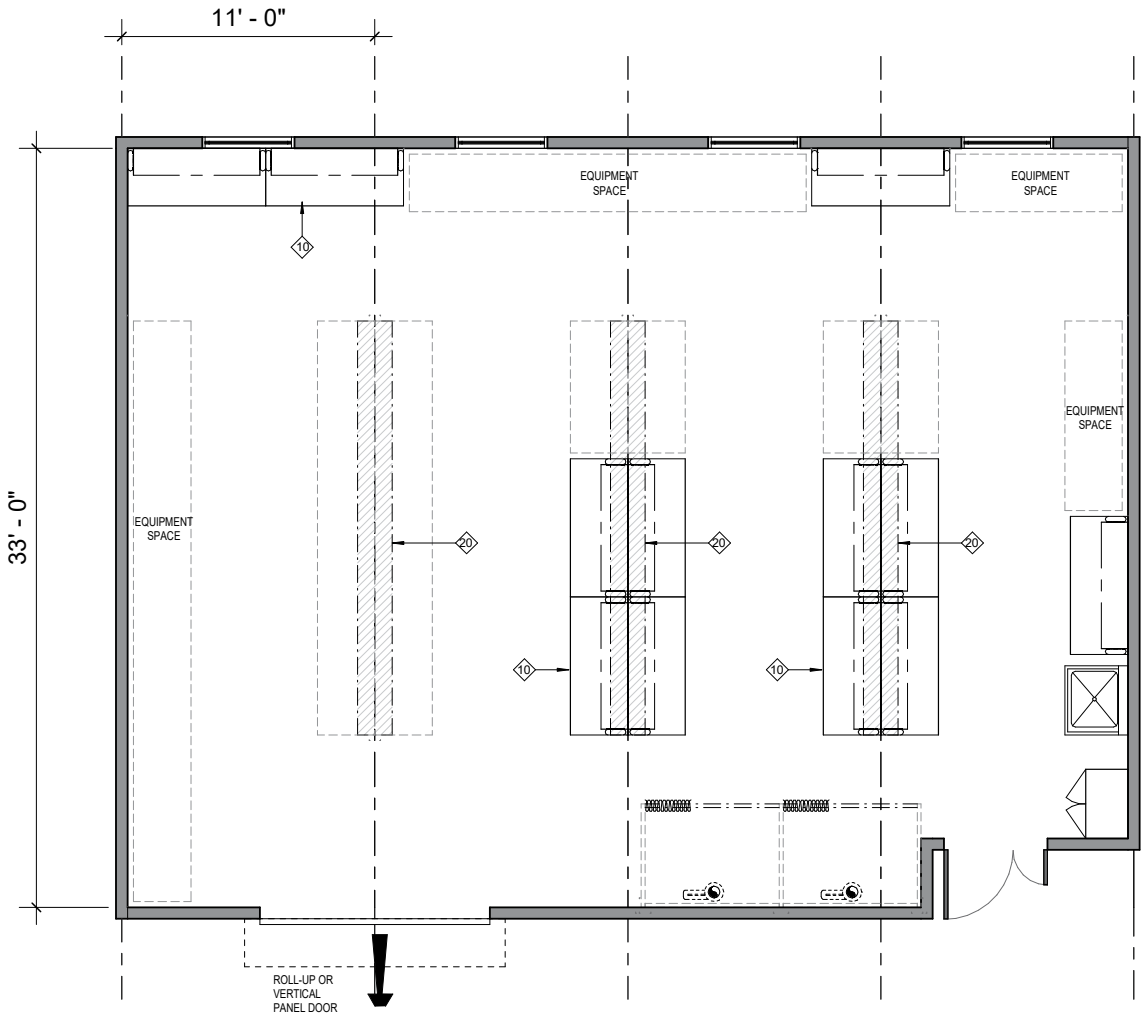
DEPARTMENT: ME / CE **SPACE ID NO: 1.01/1.02 CEB**
SPACE NAME: THERMODYNAMICS LAB **AREA NSF: 2,904**

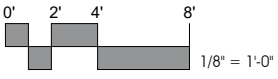
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.06 EB**
SPACE NAME: CONSTRUCTION ENGINEEERING LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



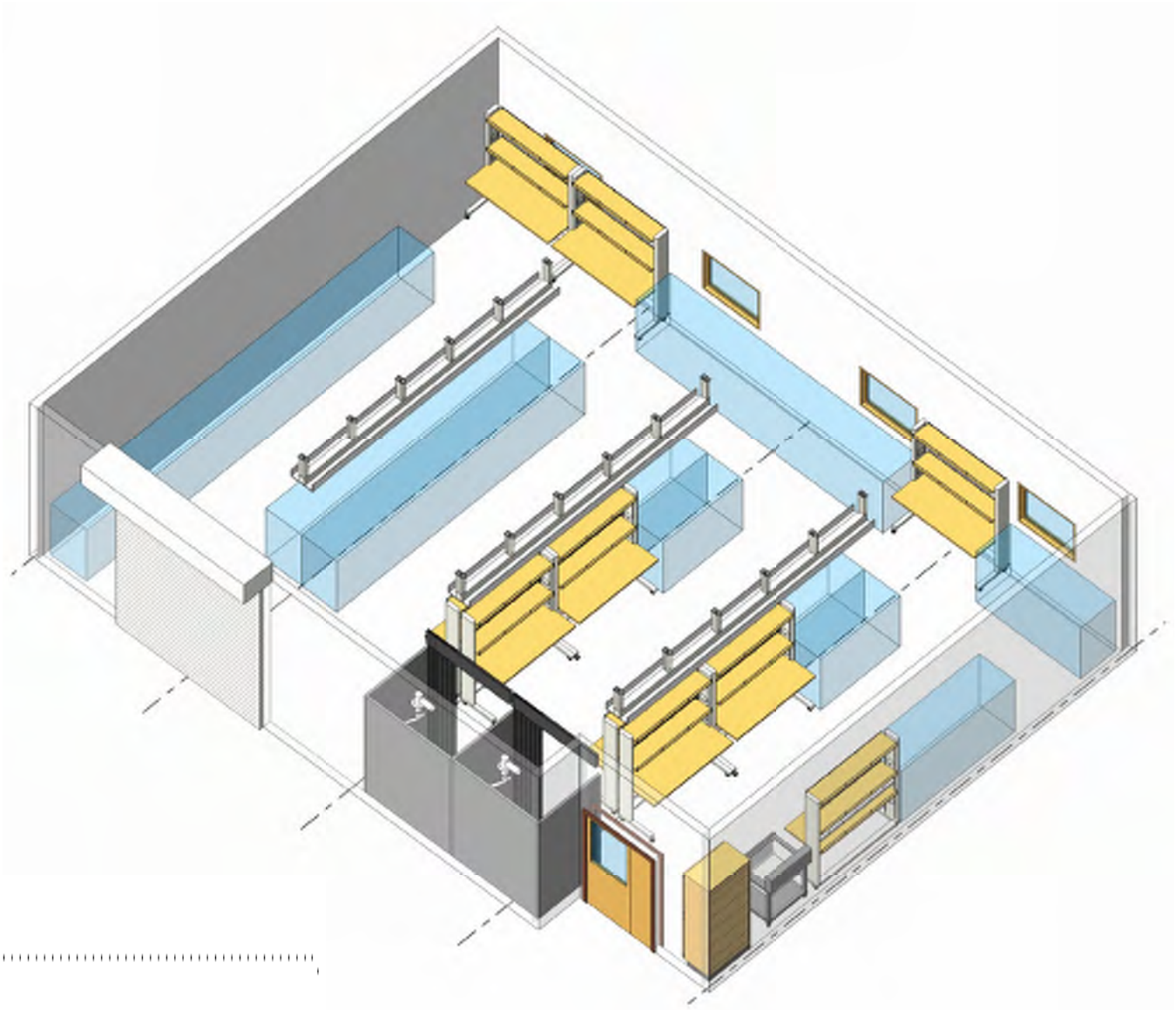


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

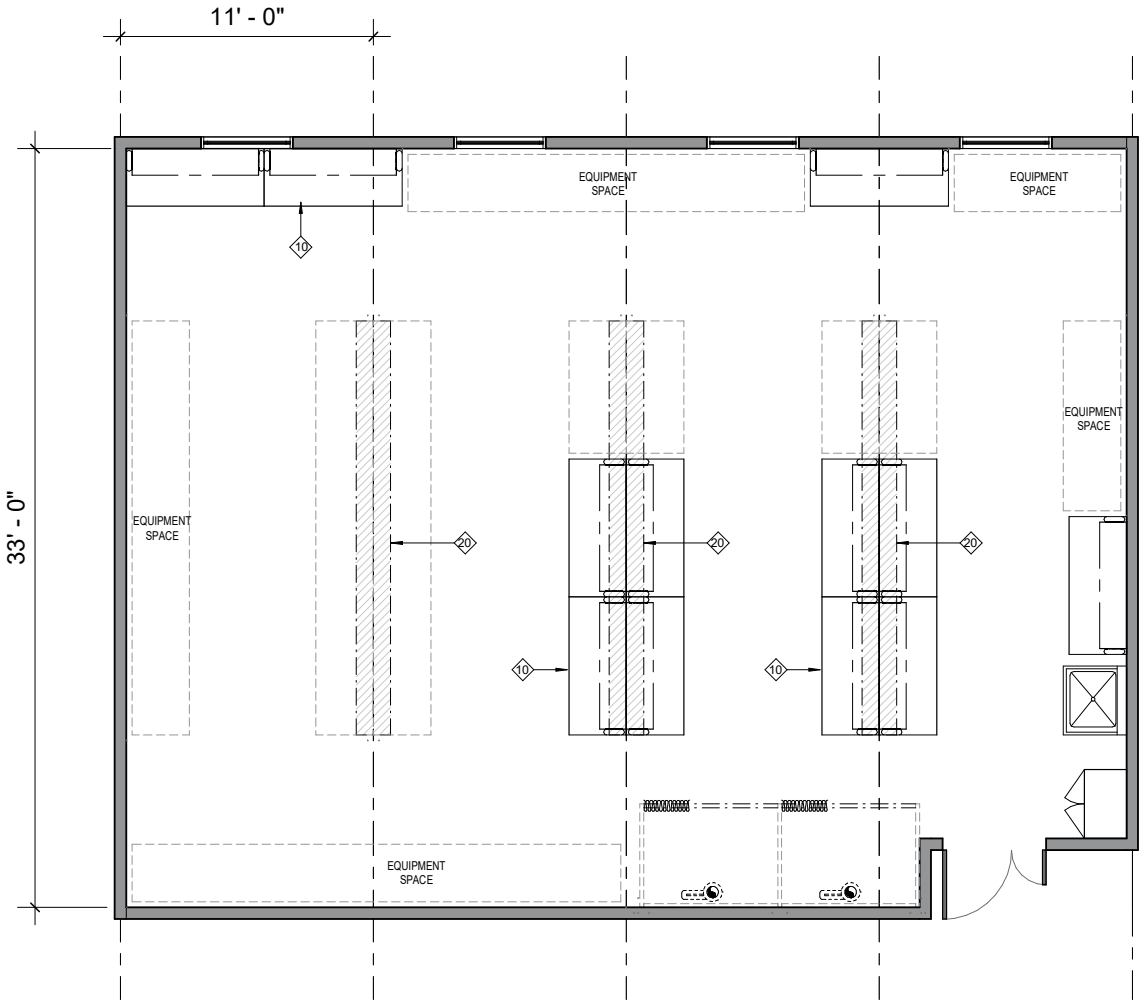
DEPARTMENT: CE **SPACE ID NO: 1.06 EB**
SPACE NAME: CONSTRUCTION ENGINEEERING LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.06 CEB**
SPACE NAME: CONSTRUCTION MATERIALS LAB / CTL BRIDGE CAPSTONE AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
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16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
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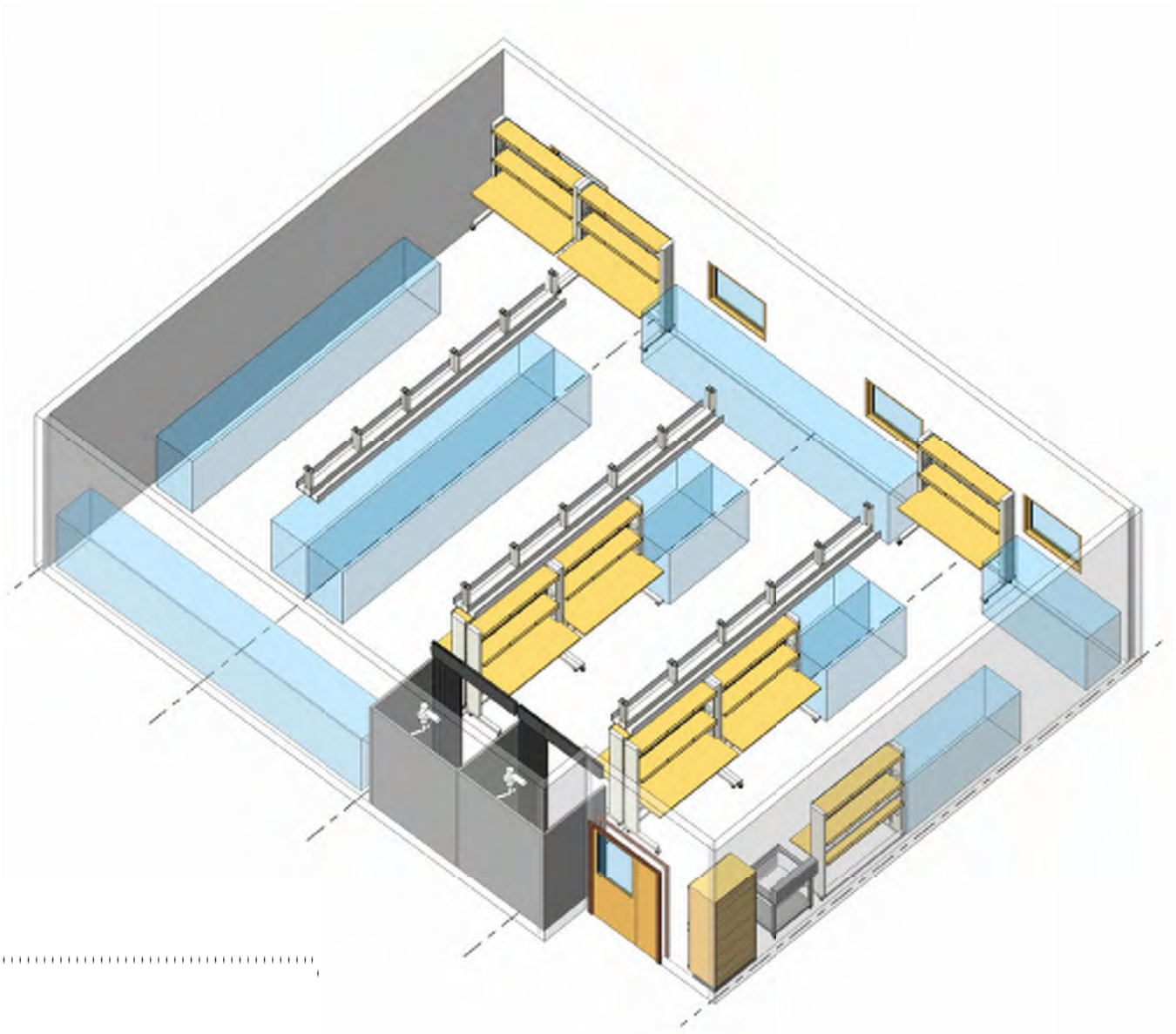
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

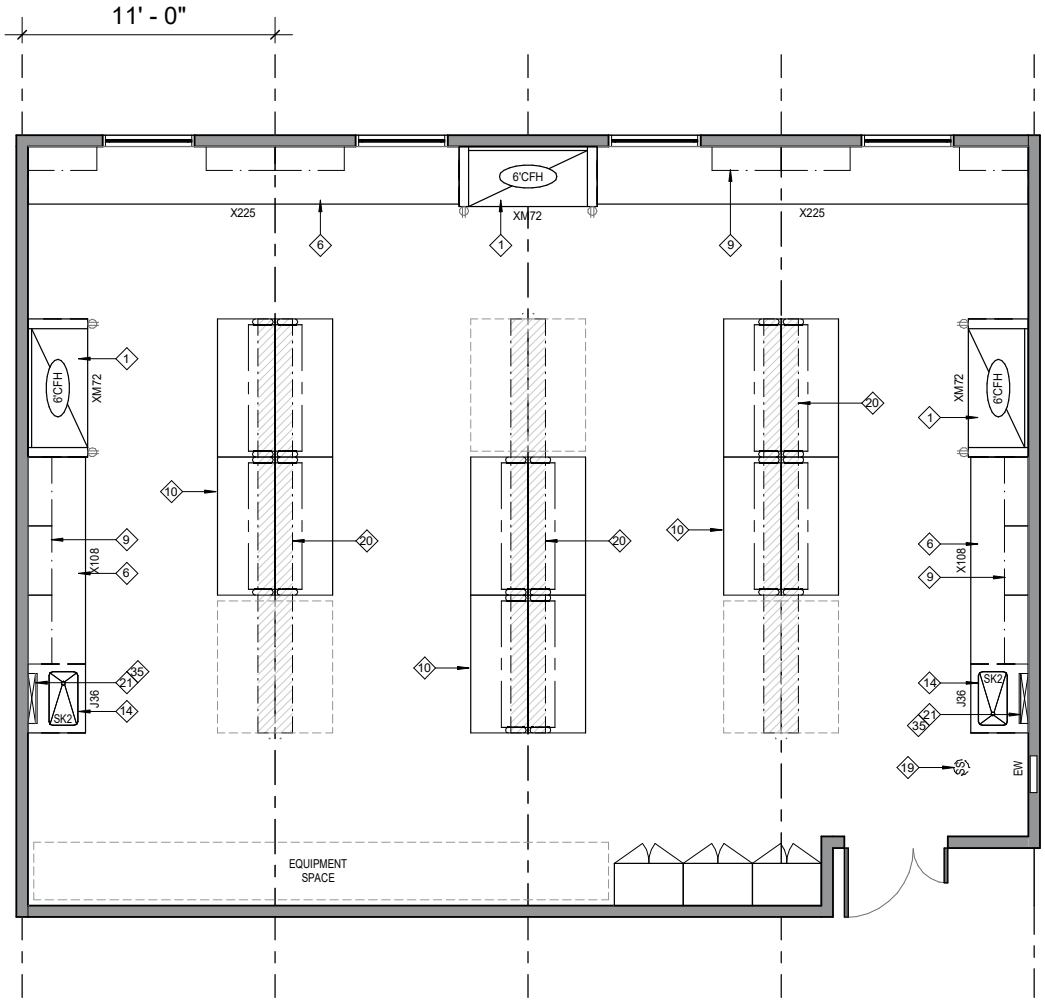
DEPARTMENT: CE **SPACE ID NO: 1.06 CEB**
SPACE NAME: CONSTRUCTION MATERIALS LAB / CTL BRIDGE CAPSTONE AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.07 EB**
SPACE NAME: TRANSPORTATION & PAVEMENT ENG LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



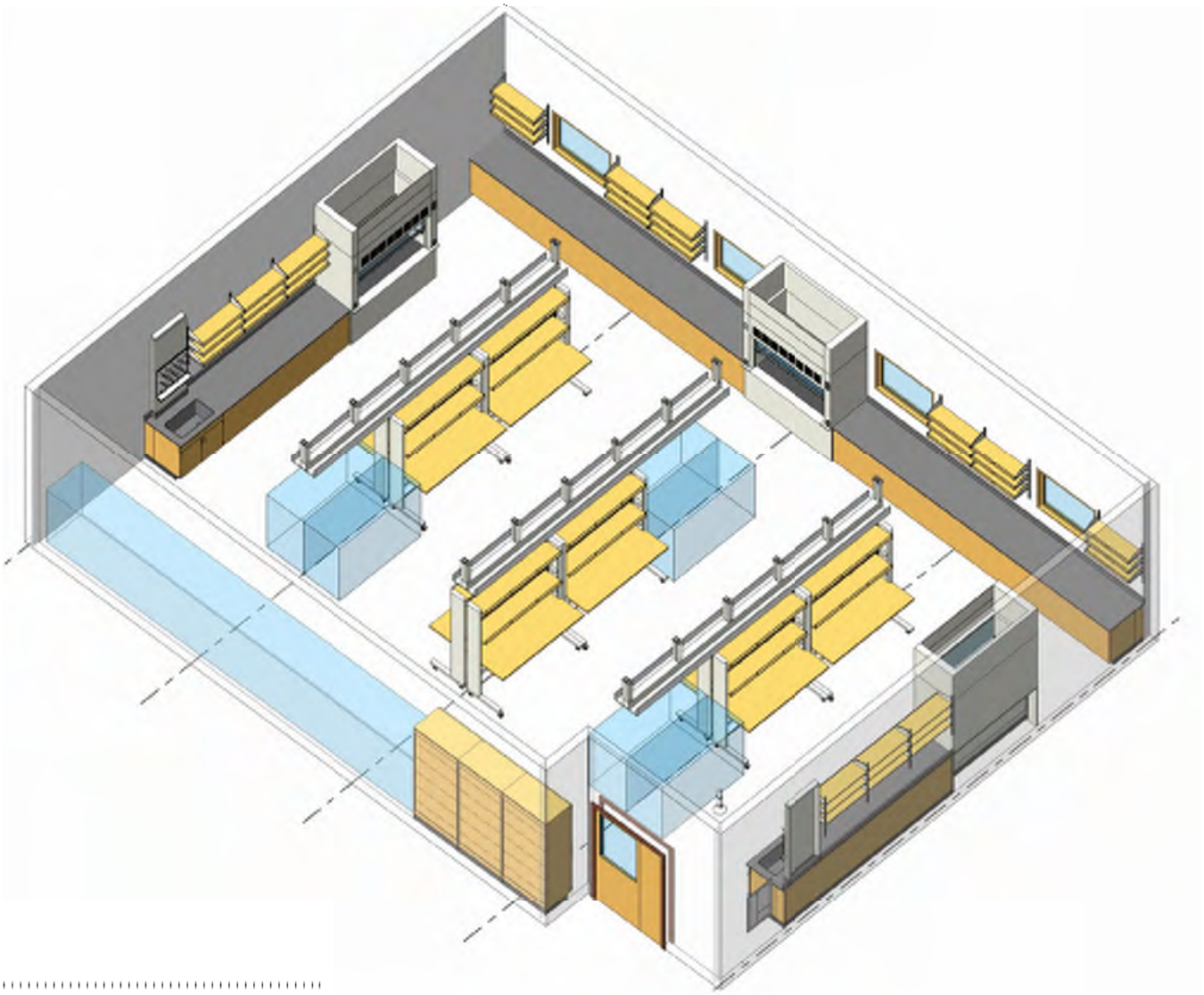
0' 2' 4' 8'
1/8" = 1'-0"

FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

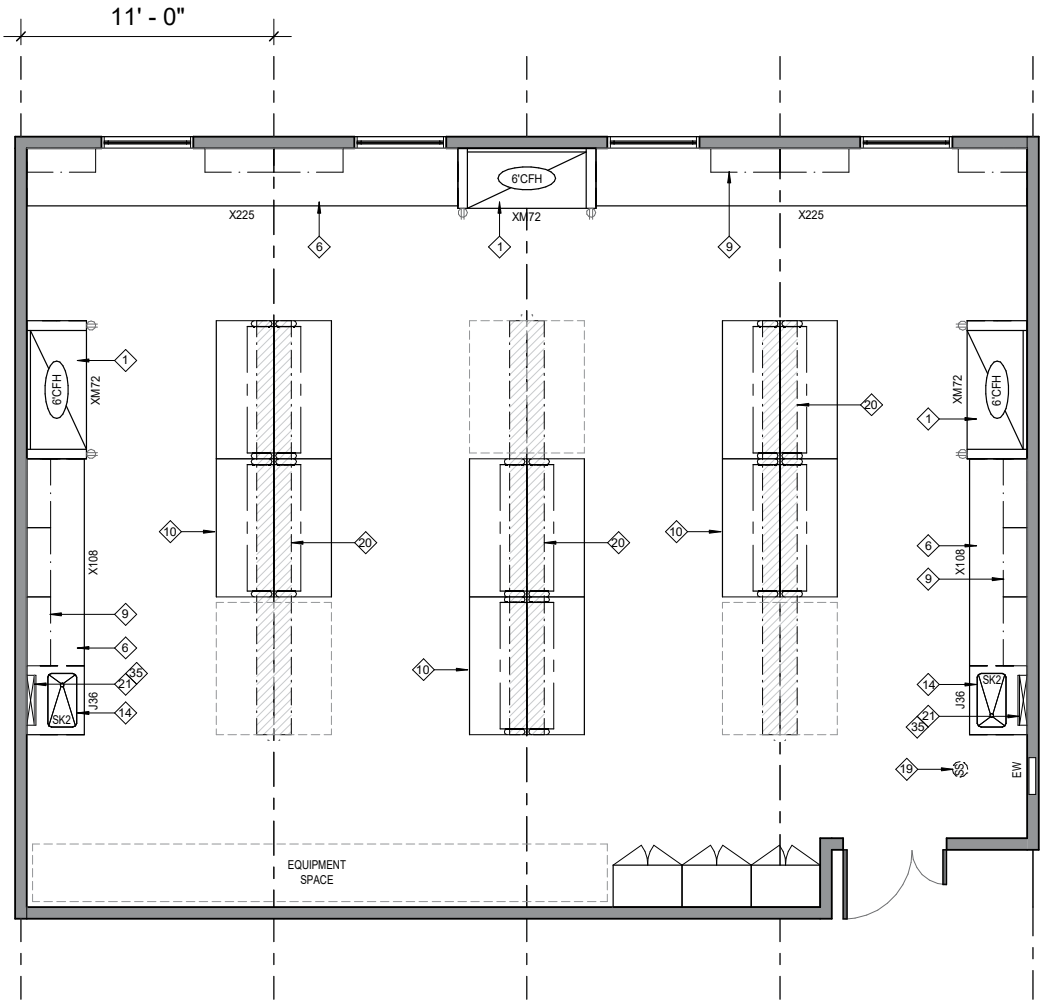
DEPARTMENT: CE **SPACE ID NO: 1.07 EB**
SPACE NAME: TRANSPORTATION & PAVEMENT ENG LAB **AREA NSF: 1,452**

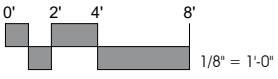
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.08 EB**
SPACE NAME: ENVIRONMENTAL ENG **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



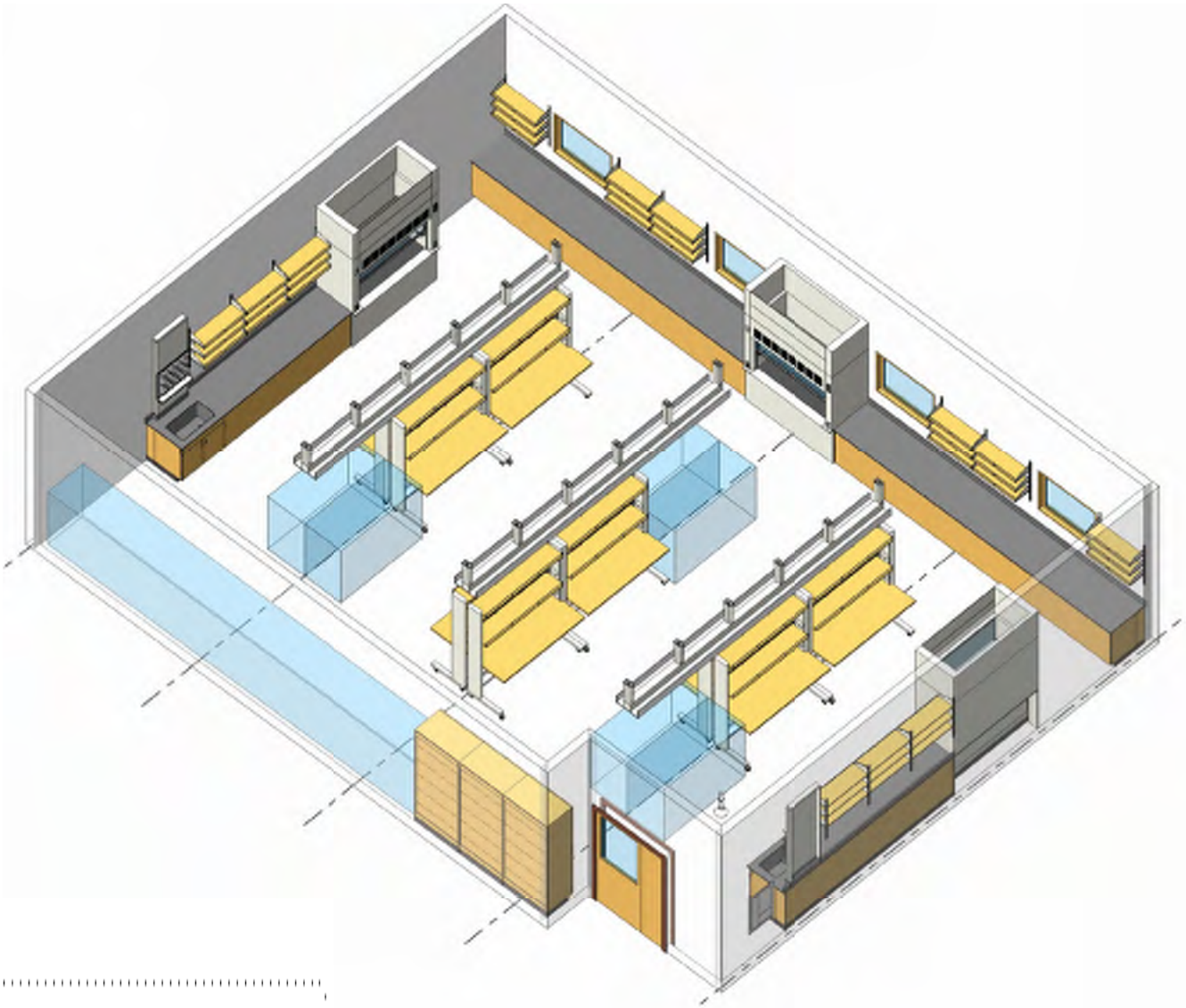


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

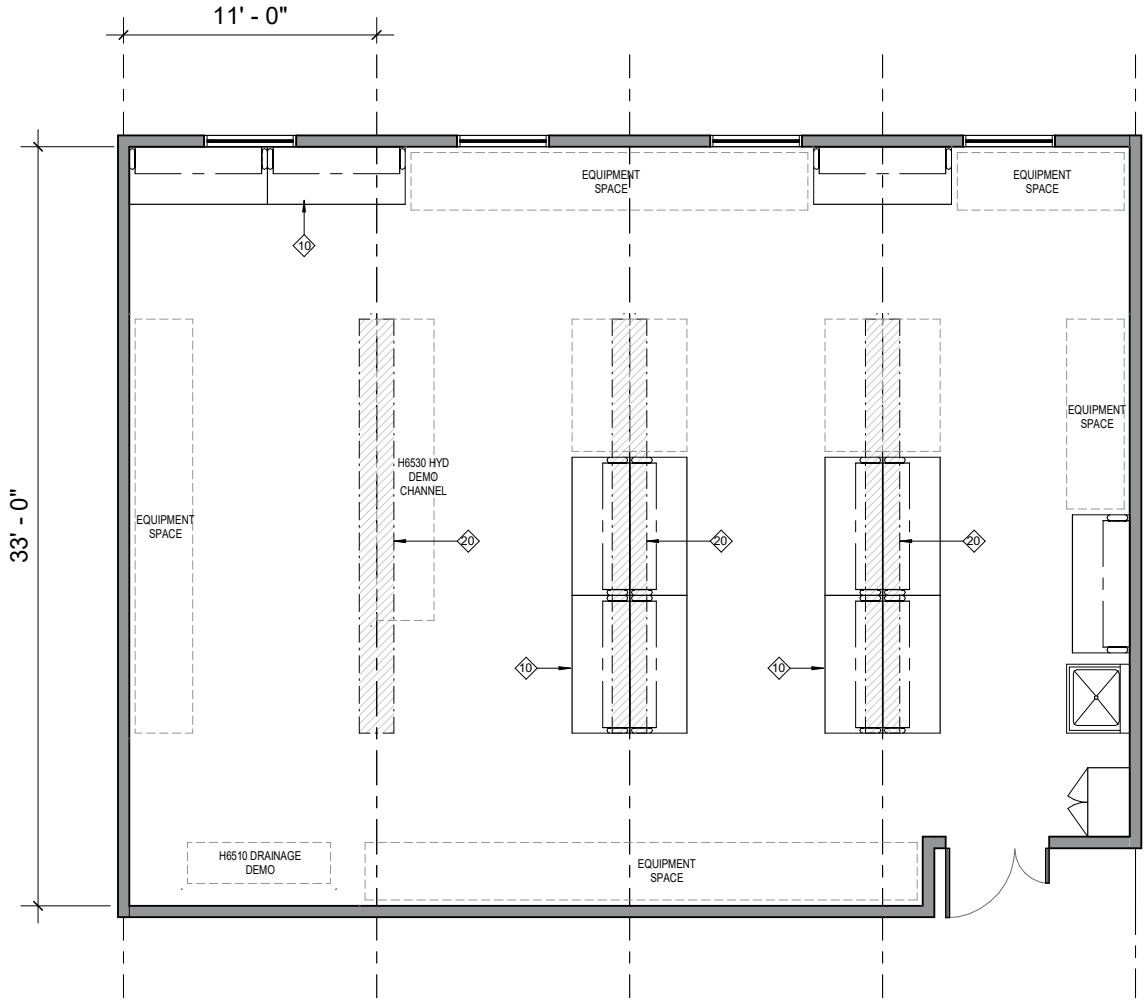
DEPARTMENT: CE **SPACE ID NO: 1.08 EB**
SPACE NAME: ENVIRONMENTAL ENG **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.09 EB**
SPACE NAME: FLUIDS / WATER RESOURCES ENGINEERING **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
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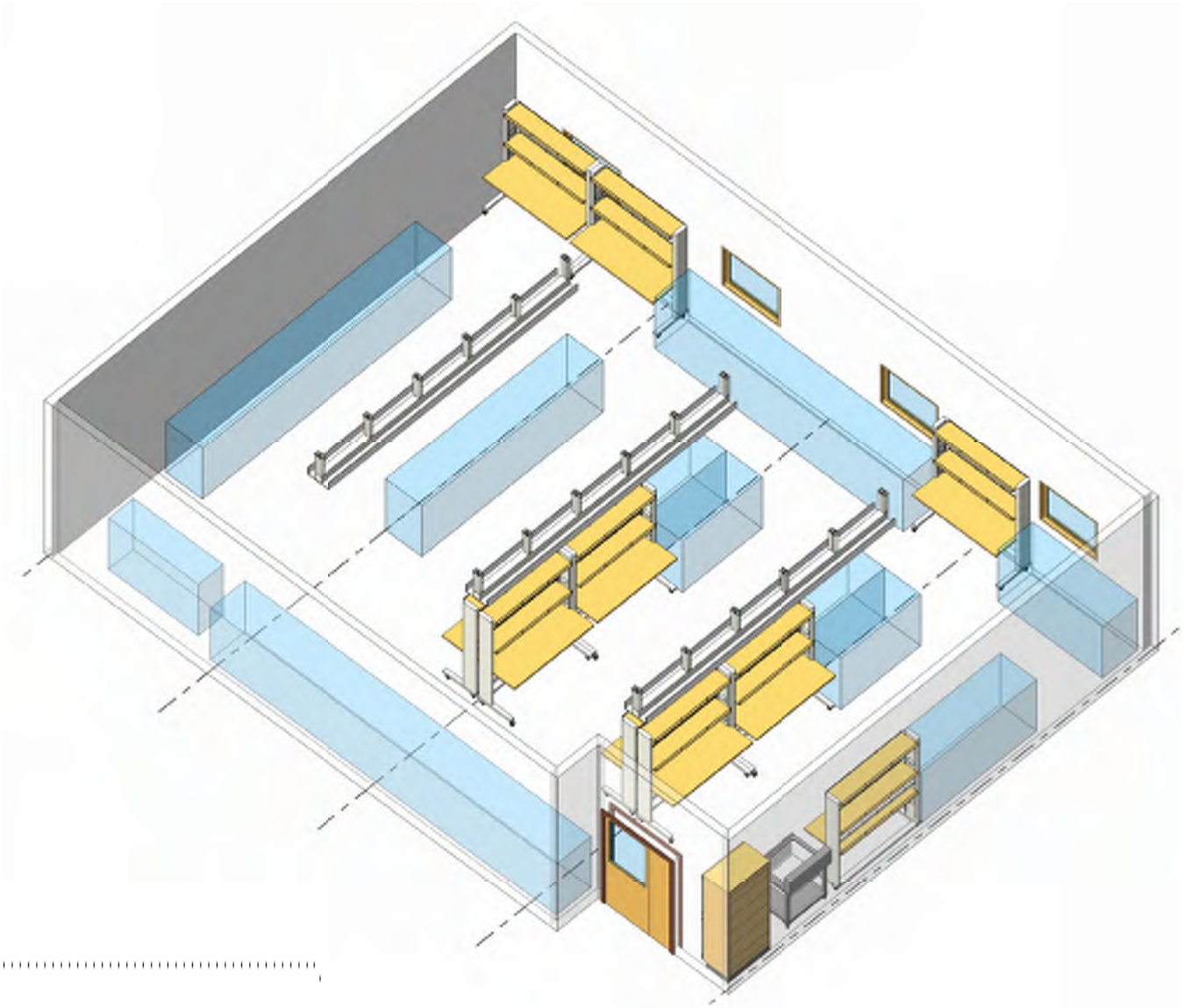
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

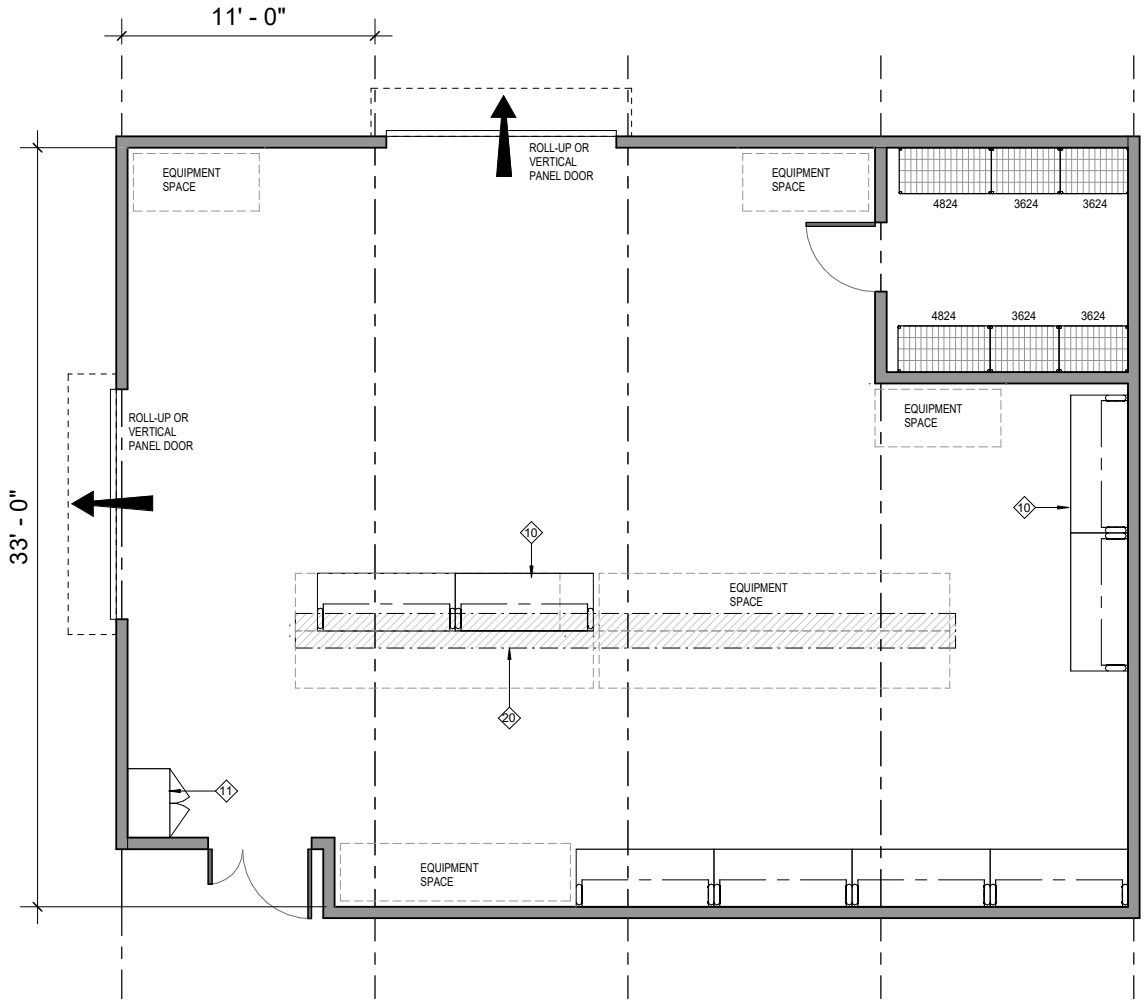
DEPARTMENT: CE **SPACE ID NO: 1.09 EB**
SPACE NAME: FLUIDS / WATER RESOURCES ENGINEERING **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.10 EB**
SPACE NAME: CONCRETE LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



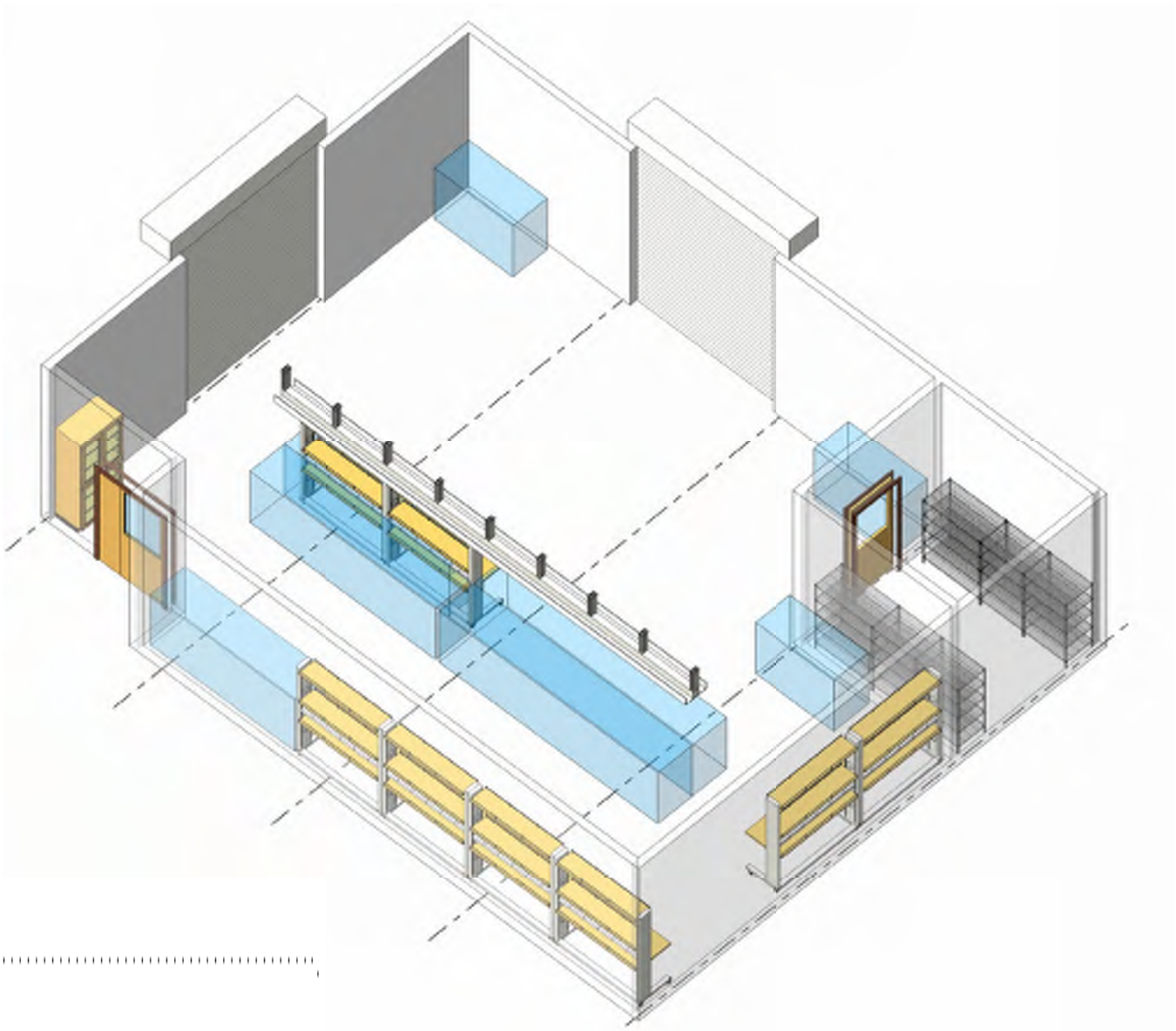
0' 2' 4' 8'
1/8" = 1'-0"

FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

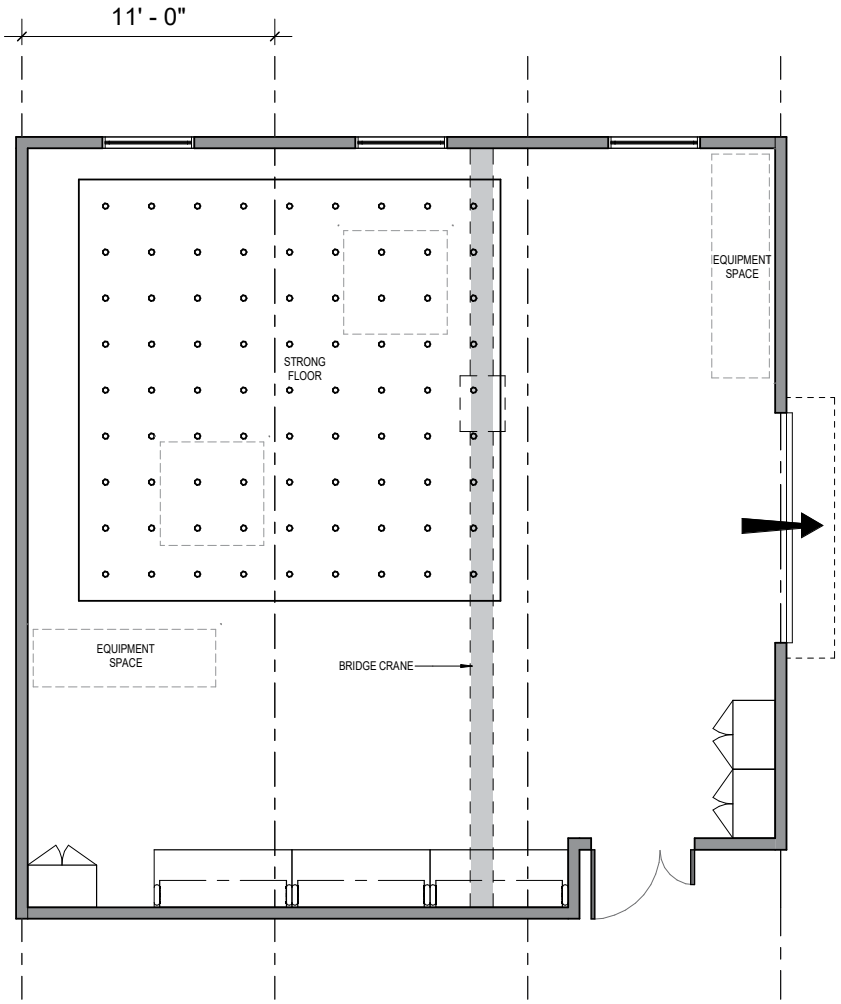
DEPARTMENT: CE **SPACE ID NO: 1.10 EB**
SPACE NAME: CONCRETE LAB **AREA NSF: 1,452**

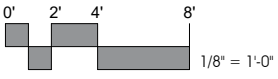
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.11 EB**
SPACE NAME: CONCRETE TESTING LAB (INCL CANOE CAPSTONE) **AREA NSF: 1,089**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.





FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
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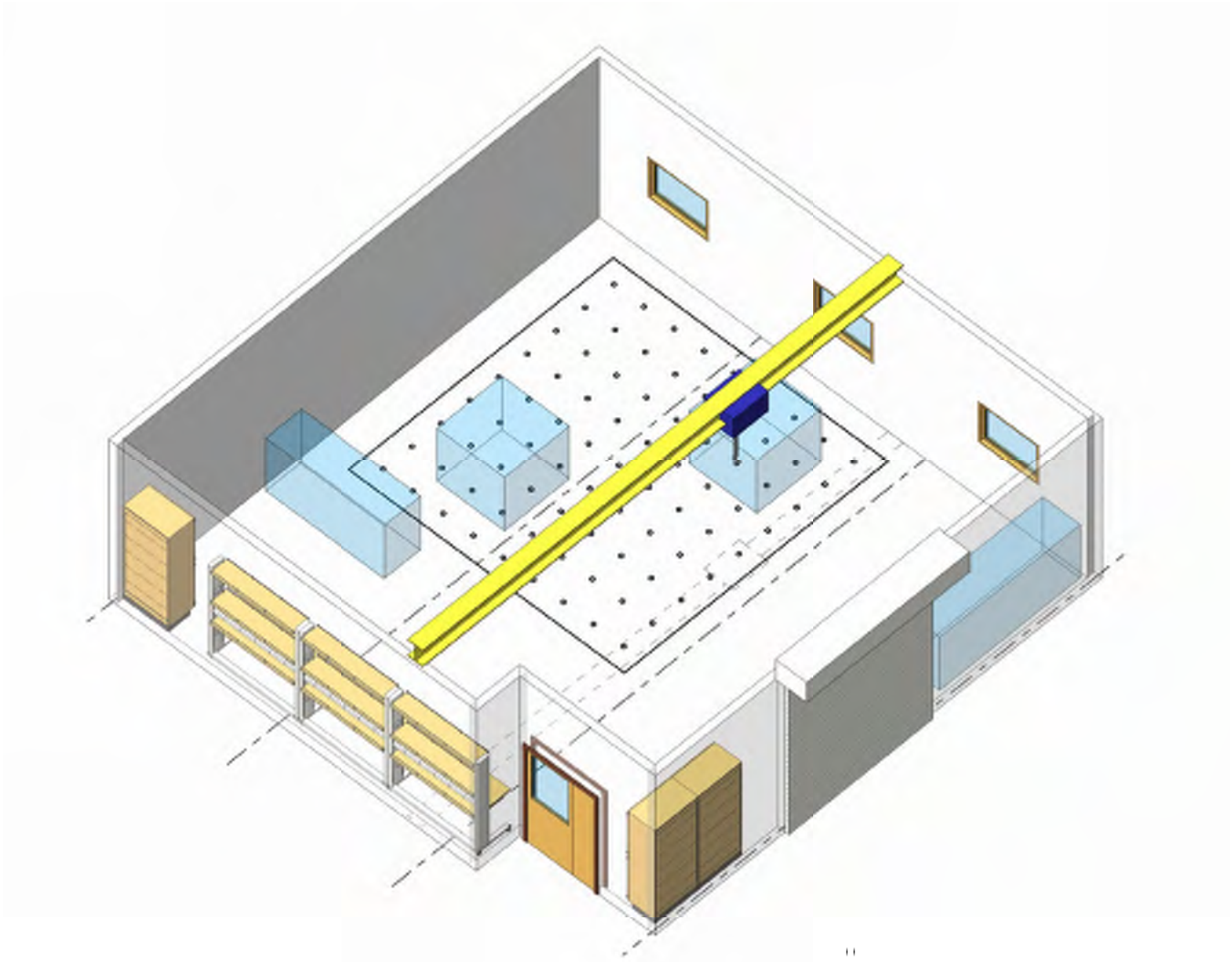
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

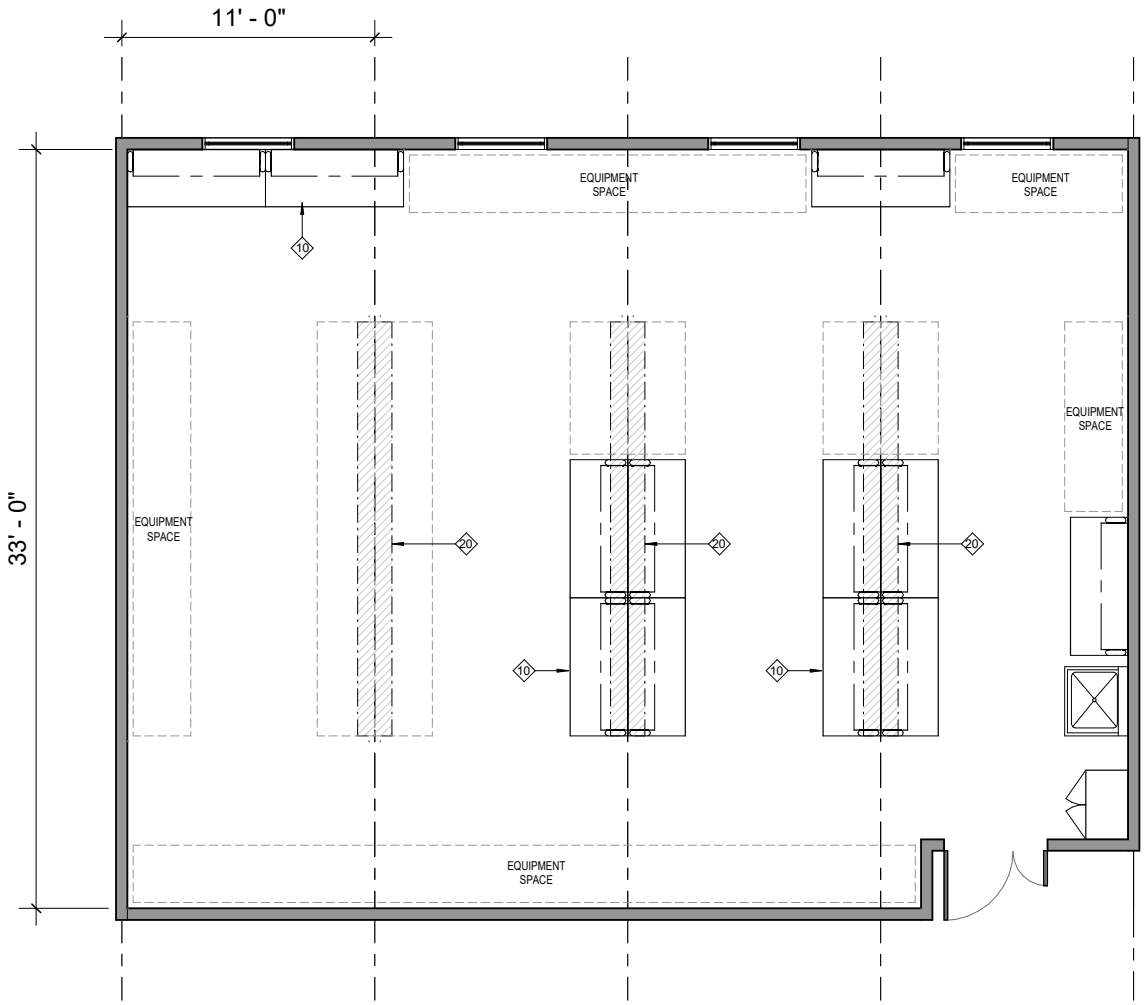
DEPARTMENT: CE **SPACE ID NO: 1.11 EB**
SPACE NAME: CONCRETE TESTING LAB (INCL CANOE CAPSTONE) **AREA NSF: 1,089**

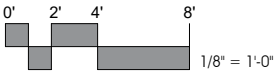
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 2.03 EB**
SPACE NAME: MASTERS RESEARCH **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



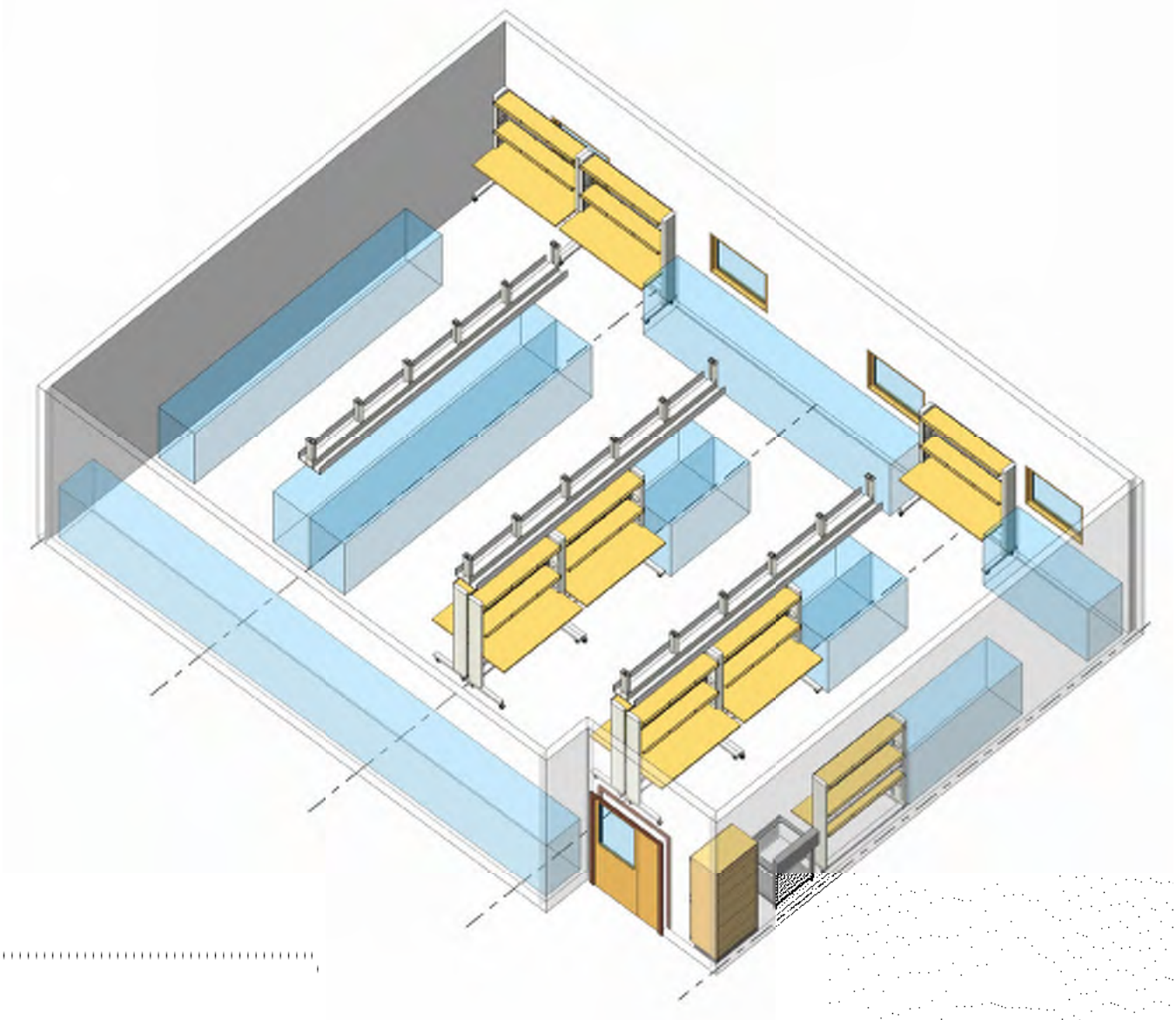


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

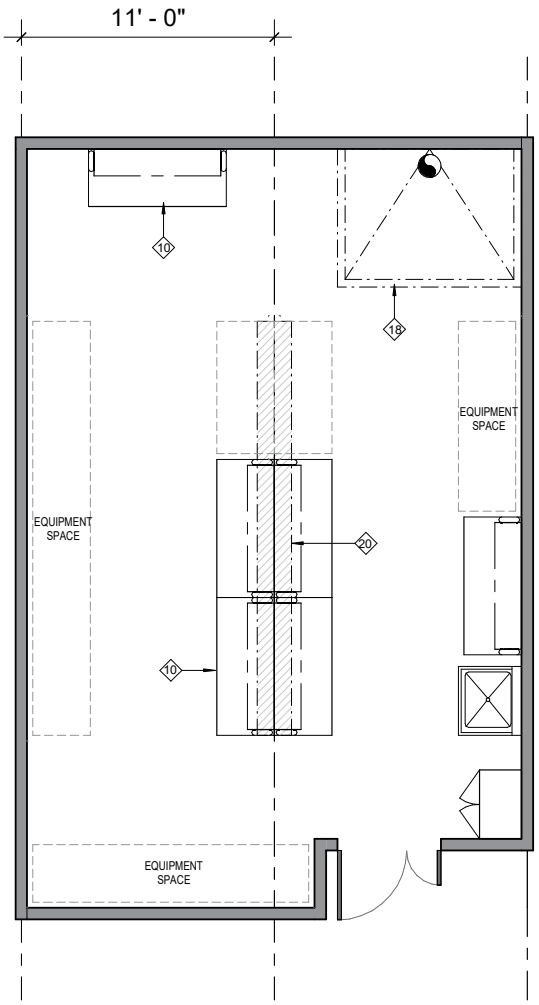
DEPARTMENT: CE **SPACE ID NO: 2.03 EB**
SPACE NAME: MASTERS RESEARCH **AREA NSF: 1,452**

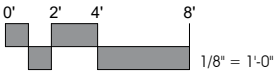
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.12 EB**
SPACE NAME: WILD FIRE **AREA NSF: 726**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.





FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
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31. Full-View Hood
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33. Metro Shelving High Density
34. Scullery Sink
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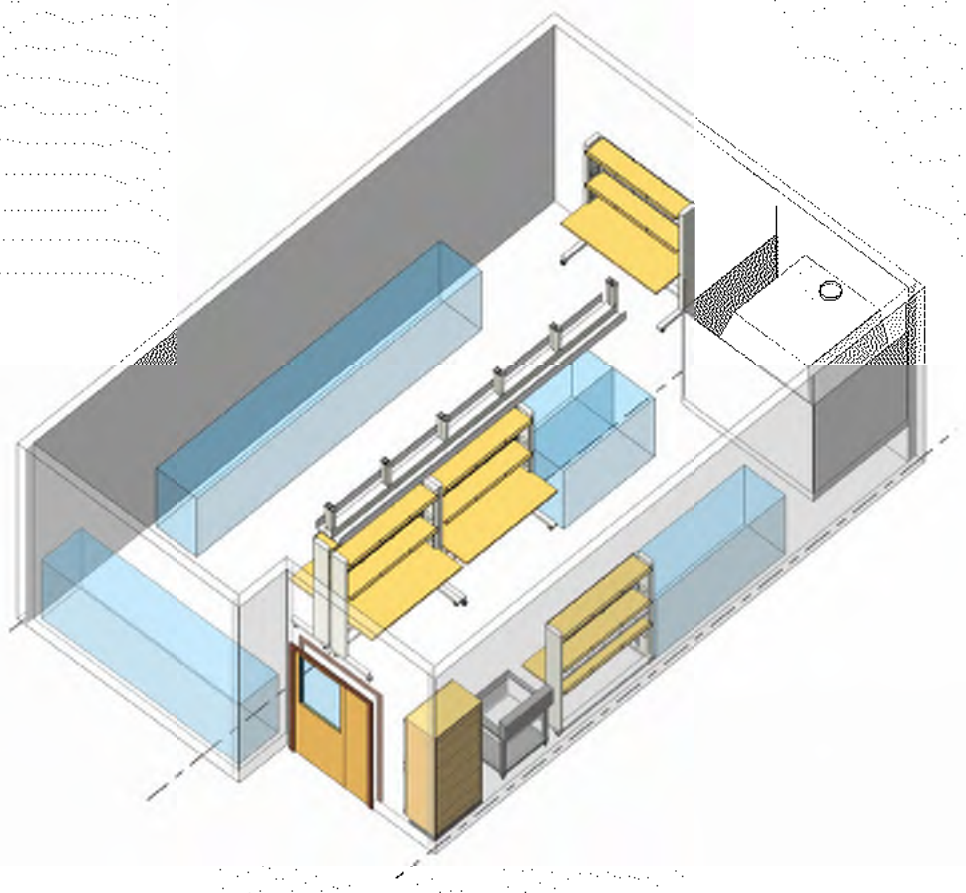
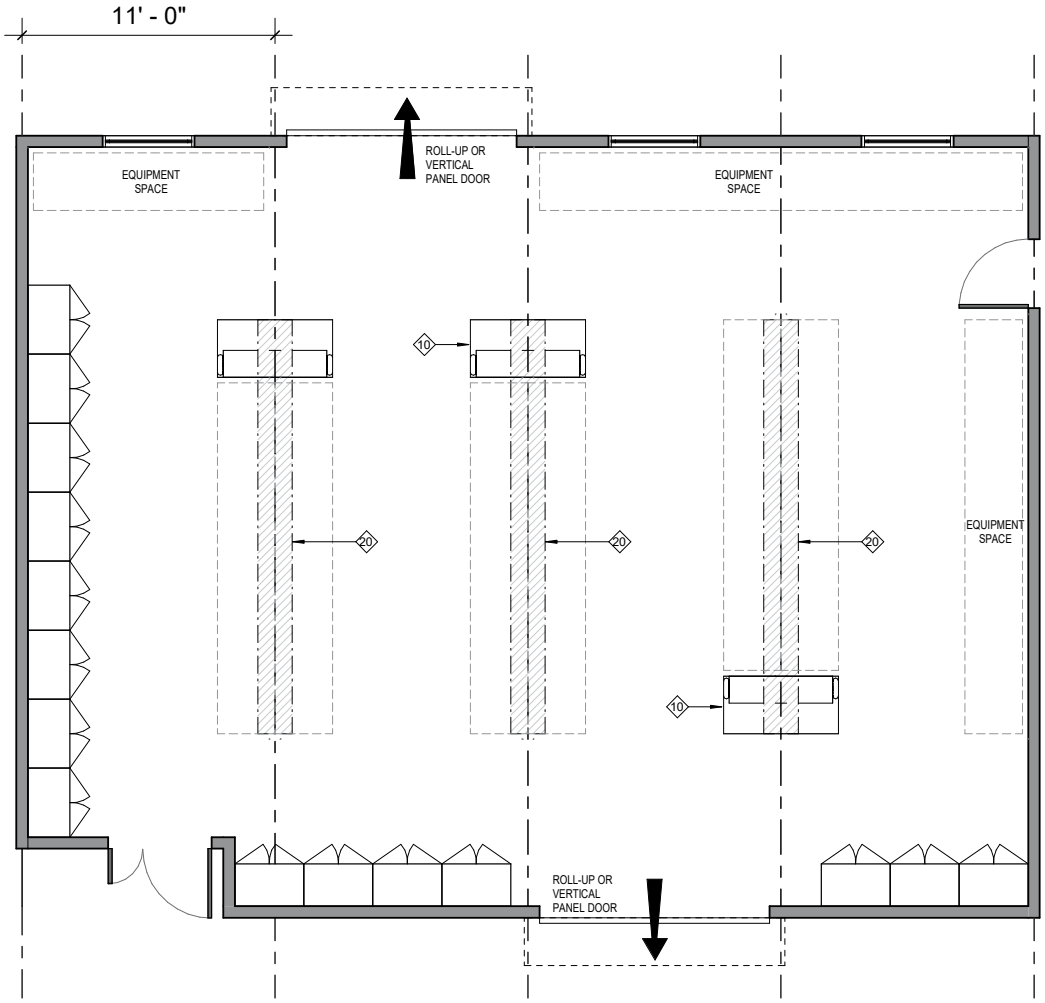
DEPARTMENT: CE **SPACE ID NO: 1.12 EB**
SPACE NAME: WILD FIRE **AREA NSF: 726**

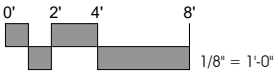
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.19 EB**
SPACE NAME: PROJECTS STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.





FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
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07. Laboratory Bench, Sitting Height
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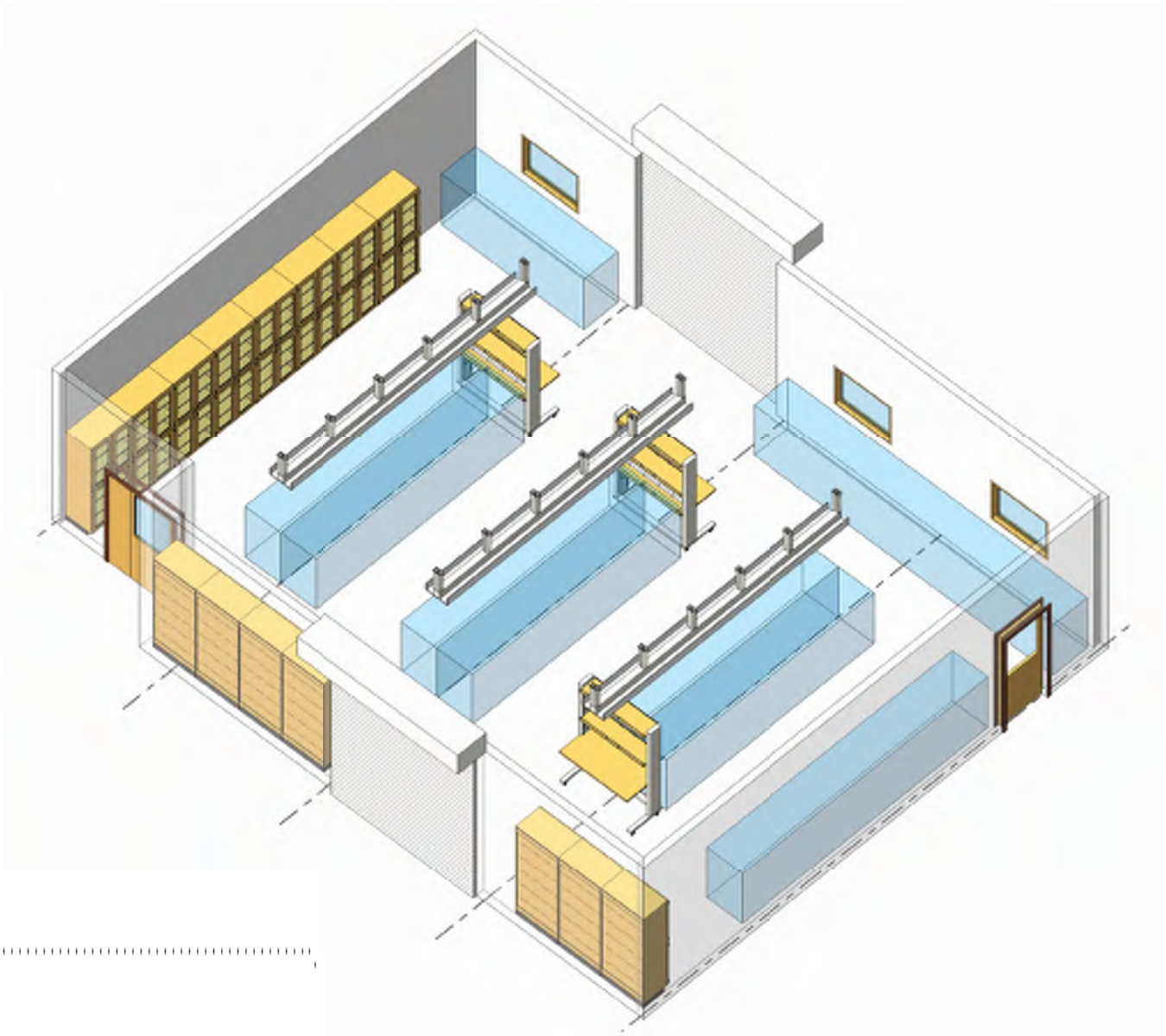
DEPARTMENT: CE **SPACE ID NO: 1.19 EB**
SPACE NAME: PROJECTS STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



Room Data Summary

Eastern Washington University - Engineering Building

Date: 6-13-24

LMN + Research Facilites Design

	Room Name	Equipment List Available	Vibration Criteria	Room Air					Services										
				Recirc Air	100% Exhasted - min. make-up	100% Exhasted with AC Rates	AC Rate Occupied (Minimum)	AC Rate Unoccupied (Minimum)	Safety Shower (Tempered) Potable	Eye Wash (Tempered) Potable	Hot & Cold (H/C) or Cold (C)	Purified Water (Type II) RO/DI	Process Cooling Water (CHWS&R)	Natural Gas (LG)	House or Local Vacuum (LV)	Local High Vacuum (Cabinet for OFOI Pump)	Shop Compressed Air (125psi with Regulator) (SA)	Clean Dry Compressed Air (125psi with Regulator) (CA)	Compressed Air (15 - 30 PSI) (LA)
	ME/MET Laboratory Space																		
	Plastics Lab					●	6	4	●	●	●						●		
	HVAC Teaching Lab				●					●	●						●		
	ME/MET Projects Lab				●					●	●						●		
	ME/MET Projects Storage				●												●		
	Tech Projects Lab				●					●	●						●		
	Tech Projects Storage				●												●		
	PLC- Controls - Sensor Lab				●					●	●							●	●
	Maker Space				●					●	●						●		
	Club Room				●					●	●						●	●	
	Material Science	●			●					●	●						●		
	Metallics Lab	●			●					●	●						●		
	Wood Shop	●			●					●	●						●		
	Additive Manufacturing				●					●	●						●		
	Composite Lab					●	6	4	●	●	●						●		
	Robotics Research Lab	●				●	6	4	●	●	●						●		
	Fluid Power Lab			●															
	Construction Lab				●					●	●						●		
	CE Laboratory Space																		
	ME/CE Thermodynamics Lab					●	6	4	●	●	●						●		
	Construction Engineering Lab					●	6	4	●	●	●						●		
	Construction Materials Lab					●	6	4	●	●	●						●		
	Transportation & Pavement Eng Lab					●	6	4	●	●	●							●	
	Environmental Eng Lab					●	6	4	●	●	●							●	
	Fluids/Water Resources Eng Lab				●					●	●						●		
	Concrete Lab				●					●	●						●		
	Concrete Testing Lab				●					●	●						●		
	Masters Research Lab				●					●	●						●		
	Wild Fire Lab					●	6	4		●	●						●		
	Project Storage				●												●		

Room Data Summary

Eastern Washington University - Engineering Building

Date: 6-13-24

LMN + Research Facilites Design

		Specialty Gasses					Power						Communications			
	Room Name	Nitrogen (N2)	Carbon Dioxide (CO2)	Specialty Gases - Inert	Specialty Gases - Flammable	Specialty Gases - Hazardous	120v	120v, Standby	208v, 1ph	208v, 1ph, Standby	208v, 3ph	480v	Video/Cable	Data Connection	Audio System	Projection or Monitors
	ME/MET Laboratory Space															
	Plastics Lab						●		●		●	●		●		
	HVAC Teaching Lab						●		●					●		
	ME/MET Projects Lab						●		●					●		
	ME/MET Projects Storage						●							●		
	Tech Projects Lab						●		●					●		
	Tech Projects Storage						●							●		
	PLC- Controls - Sensor Lab						●	●	●	●				●		
	Maker Space						●							●		
	Club Room						●							●		
	Material Science						●		●					●		
	Metallics Lab						●		●		●	●		●		
	Wood Shop						●		●		●			●		
	Additive Manufacturing						●		●		●			●		
	Composite Lab						●		●		●	●		●		
	Robotics Research Lab						●		●		●	●		●		
	Fluid Power Lab						●		●		●	●		●		
	Construction Lab						●		●		●			●		
	CE Laboratory Space															
	ME/CE Thermodynamics Lab						●		●		●			●		
	Construction Engineering Lab						●		●		●			●		
	Construction Materials Lab						●		●		●			●		
	Transportation & Pavement Eng Lab						●		●		●			●		
	Environmental Eng Lab						●		●		●			●		
	Fluids/Water Resources Eng Lab						●		●					●		
	Concrete Lab						●		●					●		
	Concrete Testing Lab						●		●					●		
	Masters Research Lab						●		●					●		
	Wild Fire Lab						●		●		●			●		
	Project Storage						●							●		

Room Data Summary

Eastern Washington University - Engineering Building

Date: 6-13-24

LMN + Research Facilites Design

	Room Name	Required 365/24/7 HVAC	Fume Hood	Exhaust Point of use	Temp. - Winter	Temp. - Summer	R.H. - Winter	R.H. - Summer
	ME/MET Laboratory Space							
	Plastics Lab			●	68°F Min	75°F Max	30% Min	70% Max
	HVAC Teaching Lab			●	68°F Min	75°F Max	30% Min	70% Max
	ME/MET Projects Lab				68°F Min	75°F Max	30% Min	70% Max
	ME/MET Projects Storage				68°F Min	75°F Max	30% Min	70% Max
	Tech Projects Lab				68°F Min	75°F Max	30% Min	70% Max
	Tech Projects Storage				68°F Min	75°F Max	30% Min	70% Max
	PLC- Controls - Sensor Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Maker Space			●	68°F Min	75°F Max	30% Min	70% Max
	Club Room				68°F Min	75°F Max	30% Min	70% Max
	Material Science			●	68°F Min	75°F Max	30% Min	70% Max
	Metallics Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Wood Shop			●	68°F Min	75°F Max	30% Min	70% Max
	Additive Manufacturing			●	68°F Min	75°F Max	30% Min	70% Max
	Composite Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Robotics Research Lab		●	●	68°F Min	75°F Max	30% Min	70% Max
	Fluid Power Lab				68°F Min	75°F Max	30% Min	70% Max
	Construction Lab			●	68°F Min	75°F Max	30% Min	70% Max
	CE Laboratory Space				68°F Min	75°F Max	30% Min	70% Max
	ME/CE Thermodynamics Lab		●	●	68°F Min	75°F Max	30% Min	70% Max
	Construction Engineering Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Construction Materials Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Transportation & Pavement Eng Lab		●	●	68°F Min	75°F Max	30% Min	70% Max
	Environmental Eng Lab		●	●	68°F Min	75°F Max	30% Min	70% Max
	Fluids/Water Resources Eng Lab				68°F Min	75°F Max	30% Min	70% Max
	Concrete Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Concrete Testing Lab				68°F Min	75°F Max	30% Min	70% Max
	Masters Research Lab				68°F Min	75°F Max	30% Min	70% Max
	Wild Fire Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Project Storage				68oF Min	75oF Max	30% Min	70% Max

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9.6 PRELIMINARY CONSTRUCTION COST ESTIMATE

Construction Cost Summary

Owner: Eastern Washington University
Project: EWU Engineering Building

ESTIMATED COSTS SUMMARY

June 25, 2024

Alternative 1 - New Building with CEB Renovation

Item	Description	QTY	UOM	$ / UOM	Cost
1	New Engineering Building	82,522	BGSF	$ 696.60	$ 57,484,211
2	Existing Building Work - CEB	39,281	BGSF	$ 315.52	$ 12,393,885
3	Existing Building Work - Cheney	3,130	BGSF	$ 231.25	$ 723,811
4	Sitework	65,000	SGA	$ 69.21	$ 4,498,805
5	General Conditions & Support Services	32	MO	$ 115,000.00	$ 3,680,000
Total Estimated Construction Cost (Today's Dollars)					**$ 78,780,712**
6	Escalation to Midpoint (Q4, 2028)	18.00%	on	$ 78,780,712	$ 14,180,528
Total Construction Cost (Escalated)					**$ 92,961,240**

COMMENTS:

Design, Bid, Build delivery method is assumed
Assumes a Q3, 2027 start and a 32 month schedule
No Site Frontage Improvements are included or anticipated.

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - New Building

RØEN ASSOCIATES

Project Owner:	**Eastern Washington University**	**Architect:**	LMN Architects
Project Name:	**EWU Engineering Building**	**Project Duration:**	32 MO
Project Location:	Cheney, WA	**Building GSF:**	82,522
Project Start Date:	Q3, 2027	**Site GSF:**	65,000
Estimate Date:	June 25, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	82,522	BGSF	$ 15.36	$ 1,267,643
A20	Basement Construction	82,522	BGSF	$ 6.98	$ 575,940
B10	Superstructure	82,522	BGSF	$ 70.44	$ 5,812,905
B20	Exterior Enclosure	82,522	BGSF	$ 44.61	$ 3,681,412
B30	Roofing	82,522	BGSF	$ 14.16	$ 1,168,398
C10	Interior Construction	82,522	BGSF	$ 37.80	$ 3,119,207
C20	Stairs	82,522	BGSF	$ 2.12	$ 175,000
C30	Interior Finishes	82,522	BGSF	$ 41.11	$ 3,392,694
D10	Conveying Systems	82,522	BGSF	$ 6.36	$ 525,000
D20	Plumbing	82,522	BGSF	$ 42.00	$ 3,465,924
D30	HVAC	82,522	BGSF	$ 108.00	$ 8,912,376
D40	Fire Protection	82,522	BGSF	$ 5.50	$ 453,871
D50	Electrical	82,522	BGSF	$ 98.00	$ 8,087,156
E10	Equipment	82,522	BGSF	$ 45.00	$ 3,213,230
E20	Casework & Furnishings	82,522	BGSF	$ 11.13	$ 918,880
F10	Special Construction	82,522	BGSF	$ -	$ -
F20	Selective Demolition	82,522	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 44,769,635**
	Design Contingency			18%	$ 8,953,927
	Subtotal				$ 53,723,562
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 3,760,649
	Subtotal				$ 57,484,211
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**82,522**	**BGSF**	**$ 696.60**	**$ 57,484,211**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**						
	Foundation Earthwork						
	Footing Excavation and Backfill (Native Soil)	4,231	cy	$	45.00	$	190,400
	Footing Drains with Gravel	720	lf	$	30.00	$	21,600
	Foundations						
	Spread Footings (includes reinforcing)	160	cy	$	940.00	$	150,400
	Continuous Footings (includes reinforcing)	213	cy	$	700.00	$	149,333
	Perimeter Stem Wall (includes reinforcing)	67	cy	$	2,080.00	$	138,667
	Concrete Columns and Plinths						
	Square	89	cy	$	2,110.00	$	187,556
	Existing Building Foundation Tie-in (Drill & Epoxy)	1	ls	$	20,000.00	$	20,000
	Slab-on-Grade						
	Slab on Grade (includes reinforcing, base course and vapor barrier)	23,645	sf	$	9.50	$	224,628
	Misc. Concrete						
	Housekeeping Pads - Allowance	1,500	sf	$	20.00	$	30,000
	Elevator Pits (includes ladder, hoist beam, sump & waterproofing)	2	ea	$	30,000.00	$	60,000
	Set Column Anchor Bolts	60	set	$	350.00	$	21,000
	Grout Baseplates	60	ea	$	75.00	$	4,500
	Architectural Precast - Allowance	1	ls	$	35,000.00	$	35,000
	Perimeter Insulation / Waterproofing						
	2" Rigid Polystyrene	2,880	sf	$	4.00	$	11,520
	Stem Wall Dampproofing	2,880	sf	$	8.00	$	23,040
	SUBTOTAL FOUNDATIONS	**82,522**	**BGSF**	**$**	**15.36**	**$**	**1,267,643**
A20	**BASEMENT CONSTRUCTION**						
	Basement Excavation						
	Basement Excavation and Export (Check against Site Section G10)						
	Basement Walls						
	Perimeter 12" Basement Wall (Includes Reinforcing)	6,620	sf	$	69.00	$	456,780
	Waterproofing						
	Below Grade Assembly (2" Rigid Insul, Membrane, Drain Mat, Protection Board	6,620	sf	$	18.00	$	119,160
	SUBTOTAL BASEMENT CONSTRUCTION	**82,522**	**BGSF**	**$**	**6.98**	**$**	**575,940**
B10	**SUPERSTRUCTURE**						
	CIP Structural Concrete						
	Vertical Structure						
	Walls, Cast-In-Place with Reinforcing	288	cy	$	1,870.00	$	538,837
	Horizontal Structure						
	Topping Slabs						
	6" Slab over Metal Floor Deck with Reinforcing	58,877	sf	$	10.00	$	588,770

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
	Structural CMU and Masonry				
	8" CMU (Elevator)	3,976	sf	$ 34.00	$ 135,184
	Structural Steel				
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)				
	Structural Framing (12 psf Allowance for Floor)	706,524	lbs	$ 3.50	$ 2,472,834
	Structural Framing (10 psf Allowance for Roof)	252,800	lbs	$ 3.50	$ 884,800
	Moment and Brace Frames				
	Brace Framing - Allowance	20,000	lbs	$ 4.00	$ 80,000
	Metal Decking				
	Floor Decking - 3"	58,877	sf	$ 9.00	$ 529,893
	Roofing Decking - 1.5"	25,280	sf	$ 6.00	$ 151,680
	Miscellaneous Metals				
	Structural Support for Vent Stacks - Allowance	1	ls	$ 50,000.00	$ 50,000
	Miscellaneous Metals - Allowance	82,522	gsf	$ 1.00	$ 82,522
	Elevator Pit Ladder and Hoist Beam	2	ea	$ 2,000.00	$ 4,000
	Fireproofing				
	Structural Steel Fireproofing				
	Sprayed Cementitious Fireproofing (Metal Deck Area)	58,877	sf	$ 5.00	$ 294,385
	Firestopping - See Interior Partitions				
	SUBTOTAL SUPERSTRUCTURE	**82,522**	**BGSF**	**$ 70.44**	**$ 5,812,905**
B20	**EXTERIOR ENCLOSURE**				
	Exterior Wall Construction				
	Exterior Wall Assembly (GWB - Finish 1 Side, vapor barrier, metal studs, R-13 batt insulation, sheathing, 2 1/2" rigid insulation, WRB)	19,912	sf	$ 33.50	$ 667,035
	Exterior Wall Finish				
	Masonry Veneer				
	Brick Veneer @ 50% of the Exterior	14,223	sf	$ 45.00	$ 640,013
	Galvanized Steel Lintels - Allowance	500	lf	$ 40.00	$ 20,000
	Sill Flashing - Allowance	500	lf	$ 25.00	$ 12,500
	Metal Panels				
	Composite Metal Panel @ 20% of the Exterior	5,689	sf	$ 70.00	$ 398,230
	Exterior Feature Elements - Allowance	1	ls	$ 100,000	$ 100,000
	Exterior Soffits				
	Finish to Soffits (Entry and/or Overhangs)		None Shown		
	Exterior Windows				
	Storefront/Curtain Walls (at 30% of the Exterior)	10,809	sf	$ 110.00	$ 1,189,007
	Premium - Glazing (Allowance)	1,200	sf	$ 40.00	$ 48,000
	Expansion/Seismic Joints				
	Roof Joints	103	lf	$ 500.00	$ 51,500
	Exterior Wall Joints	136	lf	$ 500.00	$ 68,000

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
	Exterior Doors				
	Storefront Entry Doors, Hardware, per leaf	8	ea	$ 7,500.00	$ 60,000
	Push Button ADA Auto Operators (per entrance)	2	ea	$ 4,000.00	$ 8,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	2	ea	$ 3,600.00	$ 7,200
	Exit Devices	8	ea	$ 800.00	$ 6,400
	Overhead Roll-up Doors (Large)	16	ea	$ 18,000.00	$ 288,000
	Exterior Paint & Sealants				
	Masonry Water Repellants	14,223	sf	$ 2.50	$ 35,556
	Anti-Graffiti Coating (up to 8')	5,120	sf	$ 3.00	$ 15,360
	Paint to HM Doors and Frames	2	ea	$ 175.00	$ 350
	Exterior - Control Joints, Caulking and Joint Sealants	82,522	gsf	$ 0.50	$ 41,261
	Building Graphics				
	Allowance for Building Signage	1	ls	$ 25,000.00	$ 25,000
	SUBTOTAL EXTERIOR ENCLOSURE	**82,522**	**BGSF**	**$ 44.61**	**$ 3,681,412**
B30	**ROOFING**				
	Roof Coverings				
	Membrane Roofing System with Rigid Insulation	25,280	sf	$ 24.00	$ 606,720
	Membrane Roofing Lapping up Backside of Parapets	6,320	sf	$ 18.00	$ 113,760
	Flashing and Sheet Metal				
	Parapet Caps and Copings	1,580	lf	$ 30.00	$ 47,400
	Miscellaneous Roof Flashing and Blocking	10%	on	$ 720,480	$ 72,048
	Skylights				
	Aluminum Skylights	3,562	sf	$ 85.00	$ 302,770
	Roof Accessories				
	Walk Pads - Allowance	500	sf	$ 10.00	$ 5,000
	Fall Protection Anchors	20	ea	$ 750.00	$ 15,000
	Access Ladders	1	ea	$ 3,500.00	$ 3,500
	Roof Hatches with Safety Railing	1	ea	$ 2,200.00	$ 2,200
	SUBTOTAL ROOFING	**82,522**	**BGSF**	**$ 14.16**	**$ 1,168,398**
C10	**INTERIOR CONSTRUCTION**				
	Partitions				
	GWB Partition (GWB - Finish 2 Sides, metal studs, sound batts)	67,498	sf	$ 18.00	$ 1,214,955
	Premium for Impact Resistant Wallboard - Allowance	67,498	sf	$ 2.50	$ 168,744
	Premium for Fire & Smoke Rated Walls - Allowance	67,498	sf	$ 2.00	$ 134,995
	Fire Caulking at Penetrations	82,522	gsf	$ 0.35	$ 28,883
	Interior - Caulking and Joint Sealants	82,522	gsf	$ 0.30	$ 24,757
	Miscellaneous Carpentry - Allowance	82,522	gsf	$ 1.50	$ 123,783
	Patchwork at Existing Building - Allowance	1	ls	$ 15,000.00	$ 15,000
	CMU Walls - See B10 Superstructure Above				

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Interior Glazing						
	Interior Storefront with 1/4" tempered glazing - Allowance	3,553	sf	$	65.00	$	230,913
	HM Sidelights/Relites with 1/4" tempered glazing - Allowance	180	sf	$	35.00	$	6,300
	Interior Doors, Frames, Hardware						
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	48	ea	$	3,600.00	$	172,800
	HM / SCW Dr, HM Frame, Hardware, Complete with Vision Panel - per leaf	66	ea	$	4,000.00	$	264,000
	HM / SCW Dr, HM Frame, Hardware, Complete, Uneven Double Door with Vision Panel	4	ea	$	5,500.00	$	22,000
	Overhead Roll-up Doors (Large)	1	ea	$	18,000.00	$	18,000
	Aluminum Storefront Doors, HW, Complete - per leaf	8	ea	$	7,500.00	$	60,000
	Interior Railings						
	Balcony Rails	245	lf	$	350.00	$	85,750
	Sloping Stair Rails and Grabs - Included with Stairs Below						
	Fittings / Specialties						
	Visual Displays						
	Marker Boards / Visual Displays - Allowance	1	ls	$	75,000.00	$	75,000
101400	Signage (Code and Wayfinding)	82,522	gsf	$	0.75	$	61,892
102113	Toilet Compartments (Phenolic)						
	ADA Stalls	6	stalls	$	1,300.00	$	7,800
	Standard Stalls	12	stalls	$	1,100.00	$	13,200
	Urinal Screens	6	ea	$	350.00	$	2,100
101400	Toilet Accessories						
102800	Baby Changing Station	2	ea	$	750.00	$	1,500
	Coat Hook	20	ea	$	45.00	$	900
	Electric Hand Dryer	8	ea	$	200.00	$	1,600
	Framed Mirror	20	ea	$	150.00	$	3,000
	Grab Bars - Large ADA Stall (3 Total: 1 - Vertical, 2-Horizontal)	8	set	$	400.00	$	3,200
	Paper Towel Dispenser	8	ea	$	175.00	$	1,400
	Sanitary Napkin Dispenser	3	ea	$	75.00	$	225
	Sanitary Napkin Disposal	12	ea	$	85.00	$	1,020
	Soap Dispenser	20	ea	$	85.00	$	1,700
	Toilet Paper Dispenser	20	ea	$	60.00	$	1,200
	Toilet Seat Cover Dispenser	20	ea	$	120.00	$	2,400
	Trash Receptacle (Recessed)	8	ea	$	350.00	$	2,800
	Operable Partitions						
102233	Folding Panel Partitions - Allowance	3,300	sf	$	85.00	$	280,500
	Header Support	200	lf	$	125.00	$	25,000
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	82,522	gsf	$	0.75	$	61,892
	SUBTOTAL INTERIOR CONSTRUCTION	**82,522**	**BGSF**	**$**	**37.80**	**$**	**3,119,207**

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
C20	**STAIRS**						
	Stair Construction (includes concrete, finishes and guard/hand rails)						
Stair 1	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	2	flights	$	35,000.00	$	70,000
Stair 2	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	3	flights	$	35,000.00	$	105,000
	SUBTOTAL STAIRS	**82,522**	**BGSF**	**$**	**2.12**	**$**	**175,000**
C30	**INTERIOR FINISHES**						
	Wall Finishes						
	Paint to Walls, Doors, Frames and Miscellaneous	82,522	gsf	$	5.00	$	412,610
	Premium for Acoustic Wall Panels - Allowance	82,522	gsf	$	4.00	$	330,088
	Restroom Wall Tile	4,120	sf	$	30.00	$	123,600
	Hardwood Architectural Detailing @ Student Study Lounge / Work Area - Allowance	82,522	sf	$	3.00	$	247,566
	Miscellaneous Finish Carpentry Allowance	82,522	gsf	$	0.50	$	41,261
	Bases						
	Rubber Base	6,668	lf	$	3.00	$	20,004
	Tile Base @ Restrooms	515	lf	$	30.00	$	15,450
	Wood Base @ Corridors	2,600	lf	$	20.00	$	52,000
	Floor Finishes						
	Carpet	5,295	sf	$	6.00	$	31,770
	Ceramic Tile @ Restrooms	1,895	sf	$	20.00	$	37,900
	Polished or Honed Concrete	23,486	sf	$	7.50	$	176,145
	Sealed Concrete	39,716	sf	$	3.00	$	119,148
	Durable Traffic Coating @ Mechanical Penthouse	2,840	sf	$	15.00	$	42,600
	Walk-Off Mat	800	sf	$	12.00	$	9,600
	Floor Prep / Moisture Vapor Reducer	74,032	sf	$	1.00	$	74,032
	Ceiling Finishes						
	ACT Ceiling (2x2) - Standard @ Tech Office Suite / Offices	1,950	sf	$	9.00	$	17,550
	Vestibule Ceiling - Allowance	782	sf	$	45.00	$	35,190
	Wood Slat Ceiling Clouds @ Public Circulation & Collaboration Areas - Allowance	27,020	sf	$	50.00	$	1,351,000
	GWB Ceiling, Painted @ Restrooms & Storage	4,350	sf	$	12.00	$	52,200
	GWB Vertical Soffits - Allowance	1	ls	$	30,000	$	30,000
	Grid System - Allowance	1	ls	$	25,000	$	25,000
	Exposed Ceiling, Painted @ Remaining Spaces & Penthouse) - Allowance	42,280	sf	$	3.50	$	147,980
	SUBTOTAL INTERIOR FINISHES	**82,522**	**BGSF**	**$**	**41.11**	**$**	**3,392,694**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	Hydraulic Elevator (3) Stops	3	ea	$	75,000	$	225,000
	Hydraulic Elevator (4) Stops	4	ea	$	75,000	$	300,000
	SUBTOTAL CONVEYING SYSTEMS	**82,522**	**BGSF**	**$**	**6.36**	**$**	**525,000**
D20	**PLUMBING**						
	Plumbing						
	Per MW budget estimate dated 6-11-24	82,522	gsf	$	42.00	$	3,465,924
	SUBTOTAL PLUMBING	**82,522**	**BGSF**	**$**	**42.00**	**$**	**3,465,924**
D30	**HVAC**						
	HVAC						
	Per MW budget estimate dated 6-11-24	82,522	gsf	$	108.00	$	8,912,376
	SUBTOTAL HVAC	**82,522**	**BGSF**	**$**	**108.00**	**$**	**8,912,376**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Per MW budget estimate dated 6-11-24	82,522	gsf	$	5.50	$	453,871
	SUBTOTAL FIRE PROTECTION	**82,522**	**BGSF**	**$**	**5.50**	**$**	**453,871**
D50	**ELECTRICAL**						
	Electrical						
	Per MW budget estimate dated 6-11-24	82,522	gsf	$	98.00	$	8,087,156
	SUBTOTAL ELECTRICAL	**82,522**	**BGSF**	**$**	**98.00**	**$**	**8,087,156**
E10	**EQUIPMENT**						
115300	**Laboratory Equipment**						
	Laboratory Equipment (Incl. Fumehoods & Stainless Steel Lab Equipments) - Allowance	82,522	gsf	$	38.93	$	3,213,230
	SUBTOTAL EQUIPMENT	**82,522**	**BGSF**	**$**	**38.93**	**$**	**3,213,230**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	82,522	gsf	$	8.50	$	701,437
	Window Treatment						
	Mini Blinds - Sidelites/Relites	180	sf	$	7.00	$	1,260
	Roller Shades	10,809	sf	$	20.00	$	216,183

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
	Moveable Furnishings				
	EXCLUDED				
	SUBTOTAL FURNISHINGS	**82,522**	**BGSF**	**$ 11.13**	**$ 918,880**
F10	**SPECIAL CONSTRUCTION**				
	Special Construction				
	SUBTOTAL SPECIAL CONSTRUCTION	**82,522**	**BGSF**	**$ -**	**$ -**
F20	**SELECTIVE BUILDING DEMOLITION**				
	Selective Building Demolition				
	Hazardous Components Abatement				
	None				
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**82,522**	**BGSF**	**$ -**	**$ -**
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**82,522**	**BGSF**	**$ -**	**$ -**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - CEB Building

ROEN ASSOCIATES

Project Owner:	**Eastern Washington University**	**Architect:**	LMN Architects
Project Name:	**EWU Engineering Building**	**Project Duration:**	32 MO
Project Location:	Cheney, WA	**Building GSF:**	39,281
Project Start Date:	Q3, 2027	**Site GSF:**	-
Estimate Date:	June 25, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	39,281	BGSF	$ -	$ -
A20	Basement Construction	39,281	BGSF	$ -	$ -
B10	Superstructure	39,281	BGSF	$ -	$ -
B20	Exterior Enclosure	39,281	BGSF	$ -	$ -
B30	Roofing	39,281	BGSF	$ -	$ -
C10	Interior Construction	39,281	BGSF	$ 28.91	$ 1,135,668
C20	Stairs	39,281	BGSF	$ -	$ -
C30	Interior Finishes	39,281	BGSF	$ 32.88	$ 1,291,712
D10	Conveying Systems	39,281	BGSF	$ -	$ -
D20	Plumbing	39,281	BGSF	$ 13.30	$ 522,437
D30	HVAC	39,281	BGSF	$ 99.14	$ 3,894,156
D40	Fire Protection	39,281	BGSF	$ 3.70	$ 145,340
D50	Electrical	39,281	BGSF	$ 49.00	$ 1,924,769
E10	Equipment	39,281	BGSF	$ 6.66	$ 261,544
E20	Casework & Furnishings	39,281	BGSF	$ 7.74	$ 304,035
F10	Special Construction	39,281	BGSF	$ -	$ -
F20	Selective Demolition	39,281	BGSF	$ 8.57	$ 336,500
BUILDING CONSTRUCTION SUBTOTAL					**$ 9,816,161**
	Design Contingency			18%	$ 1,766,909
	Subtotal				$ 11,583,070
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 810,815
	Subtotal				$ 12,393,885
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**39,281**	**BGSF**	**$ 315.52**	**$ 12,393,885**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - CEB Building

ROEN ASSOCIATES

ESTIMATE SUMMARY						
No.	Description	Quantity	Unit of Measure		Unit Cost	Total Estimated Cost
A10	**FOUNDATIONS**					
	Foundations					
	SUBTOTAL FOUNDATIONS	**39,281**	**BGSF**	**$**	**-**	**$ -**
A20	**BASEMENT CONSTRUCTION**					
	Basement Construction					
	SUBTOTAL BASEMENT CONSTRUCTION	**39,281**	**BGSF**	**$**	**-**	**$ -**
B10	**SUPERSTRUCTURE**					
	Superstructure					
	SUBTOTAL SUPERSTRUCTURE	**39,281**	**BGSF**	**$**	**-**	**$ -**
B20	**EXTERIOR ENCLOSURE**					
	Exterior Enclosure					
	SUBTOTAL EXTERIOR ENCLOSURE	**39,281**	**BGSF**	**$**	**-**	**$ -**
B30	**ROOFING**					
	Roofing					
	SUBTOTAL ROOFING	**39,281**	**BGSF**	**$**	**-**	**$ -**
C10	**INTERIOR CONSTRUCTION**					
	Partitions					
	GWB Partition (GWB - Finish 2 Sides, metal studs, sound batts)	30,639	sf	$	18.00	$ 551,505
	STC Rated Walls - Allowance	15,320	sf	$	6.00	$ 91,918
	Fire Caulking at Penetrations	39,281	gsf	$	0.35	$ 13,748
	Interior - Caulking and Joint Sealants	39,281	gsf	$	0.30	$ 11,784
	Miscellaneous Carpentry - Allowance	39,281	gsf	$	1.00	$ 39,281
	Interior Glazing					
	Interior Storefront with 1/4" tempered glazing - Allowance	786	sf	$	65.00	$ 51,065
	HM Sidelights/Relites with 1/4" tempered glazing - Allowance	1,178	sf	$	35.00	$ 41,245
	Interior Doors, Frames, Hardware					
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	47	ea	$	3,600.00	$ 169,200
	HM / SCW Dr, HM Frame, Hardware, Complete with Vision Panel - per leaf	18	ea	$	4,000.00	$ 72,000
	Fittings / Specialties					
	Visual Displays					
	Marker Boards / Visual Displays - Allowance	1	ls	$	35,000.00	$ 35,000

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
101400	Signage (Code and Wayfinding)	39,281	gsf	$	0.75	$	29,461
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	39,281	gsf	$	0.75	$	29,461
	SUBTOTAL INTERIOR CONSTRUCTION	**39,281**	**BGSF**	**$**	**28.91**	**$**	**1,135,668**
C20	**STAIRS**						
	Stairs						
	SUBTOTAL STAIRS	**39,281**	**BGSF**	**$**	**-**	**$**	**-**
C30	**INTERIOR FINISHES**						
	Wall Finishes						
	Paint to Walls, Doors, Frames and Miscellaneous	39,281	gsf	$	5.00	$	196,405
	P-Lam Wainscot - Allowance	2,000	sf	$	25.00	$	50,000
	Acoustical Wall Treatment - Allowance	39,281	gsf	$	4.00	$	157,124
	Miscellaneous Finish Carpentry Allowance	39,281	gsf	$	1.00	$	39,281
	Bases						
	Rubber Base	8,728	lf	$	3.00	$	26,185
	Wood Base (Corridor - Ground Floor)	873	lf	$	20.00	$	17,456
	Floor Finishes						
	Carpet, Polished Concrete, Sealed Concrete, VCT, LVT - Allowance	39,281	sf	$	9.50	$	373,170
	Floor Prep / Moisture Vapor Reducer	39,281	sf	$	1.00	$	39,281
	Ceiling Finishes						
	ACT Ceiling (2x2), Painted GWB Ceiling, Painted Exposed Ceiling - Allowance	39,281	gsf	$	10.00	$	392,810
	SUBTOTAL INTERIOR FINISHES	**39,281**	**BGSF**	**$**	**32.88**	**$**	**1,291,712**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	SUBTOTAL CONVEYING SYSTEMS	**39,281**	**BGSF**	**$**	**-**	**$**	**-**
D20	**PLUMBING**						
	Plumbing						
	Per MW budget estimate dated 6-11-24	39,281	gsf	$	13.30	$	522,437
	SUBTOTAL PLUMBING	**39,281**	**BGSF**	**$**	**13.30**	**$**	**522,437**
D30	**HVAC**						
	HVAC						
	Per MW budget estimate dated 6-11-24	39,281	gsf	$	50.27	$	1,974,656

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Upgrade of Existing CEB Infrastructure to connect to New Geothermal System - Allowance (per MW budget estimate dated 6-11-24)	39,281	gsf	$	48.87	$	1,919,500
	SUBTOTAL HVAC	**39,281**	**BGSF**	**$**	**99.14**	**$**	**3,894,156**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Per MW budget estimate dated 6-11-24	39,281	gsf	$	3.70	$	145,340
	SUBTOTAL FIRE PROTECTION	**39,281**	**BGSF**	**$**	**3.70**	**$**	**145,340**
D50	**ELECTRICAL**						
	Electrical						
	Per MW budget estimate dated 6-11-24	39,281	gsf	$	49.00	$	1,924,769
	SUBTOTAL ELECTRICAL	**39,281**	**BGSF**	**$**	**49.00**	**$**	**1,924,769**
E10	**EQUIPMENT**						
115300	**Laboratory Equipment**						
	Laboratory Equipment - Per RFD	1	ls	$	261,544	$	261,544
	SUBTOTAL EQUIPMENT	**39,281**	**BGSF**	**$**	**6.66**	**$**	**261,544**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	39,281	sf	$	7.50	$	294,608
	Window Treatment						
	Mini Blinds - Sidelites/Relites	1,178	sf	$	8.00	$	9,427
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**39,281**	**BGSF**	**$**	**7.74**	**$**	**304,035**
F10	**SPECIAL CONSTRUCTION**						
	Special Construction						
	SUBTOTAL SPECIAL CONSTRUCTION	**39,281**	**BGSF**	**$**	**-**	**$**	**-**
F20	**SELECTIVE BUILDING DEMOLITION**						
	Building Structural Demolition						
	Slab on grade removal and replace - Allowance	1	ls	$	25,000.00	$	25,000
	Building Exterior Demolition						
	Brace, Protect and Preserve Existing Wall @ New Openings	3	ea	$	1,500.00	$	4,500
	Building Interior Demolition						
	Existing Elevator	1	ls	$	10,000.00	$	10,000

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Partitions	2,355	lf	$	15.00	$	35,325
	Door, Frame & HW	92	ea	$	120.00	$	11,040
	Flooring	39,281	sf	$	1.50	$	58,922
	Rubber Base	8,728	lf	$	1.00	$	8,728
	Ceilings	39,281	sf	$	1.50	$	58,922
	Casework	635	lf	$	15.00	$	9,525
	Miscellaneous Demolition	240	hrs	$	120.00	$	28,800
	Temporary Partitions / Dust Control - Allowance	1,500	sf	$	25.00	$	37,500
	Phasing - Allowance	2	ea	$	2,500.00	$	5,000
	Supervision, Hauling & Dump Fees	15%	on	$	288,261	$	43,239
	Mechanical, Electrical and Plumbing	In MEP Numbers Above					
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**39,281**	**BGSF**	**$**	**8.57**	**$**	**336,500**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**39,281**	**BGSF**	**$**	**-**	**$**	**-**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Cheney Hall

Project Owner:	**Eastern Washington University**	**Architect:**	LMN Architects
Project Name:	**EWU Engineering Building**	**Project Duration:**	32 MO
Project Location:	Cheney, WA	**Building GSF:**	3,130
Project Start Date:	Q3, 2027	**Site GSF:**	-
Estimate Date:	June 25, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	3,130	BGSF	$ -	$ -
A20	Basement Construction	3,130	BGSF	$ -	$ -
B10	Superstructure	3,130	BGSF	$ -	$ -
B20	Exterior Enclosure	3,130	BGSF	$ -	$ -
B30	Roofing	3,130	BGSF	$ -	$ -
C10	Interior Construction	3,130	BGSF	$ 7.20	$ 22,532
C20	Stairs	3,130	BGSF	$ -	$ -
C30	Interior Finishes	3,130	BGSF	$ 34.88	$ 109,160
D10	Conveying Systems	3,130	BGSF	$ -	$ -
D20	Plumbing	3,130	BGSF	$ 13.30	$ 41,629
D30	HVAC	3,130	BGSF	$ 50.27	$ 157,345
D40	Fire Protection	3,130	BGSF	$ 3.70	$ 11,581
D50	Electrical	3,130	BGSF	$ 49.00	$ 153,370
E10	Equipment	3,130	BGSF	$ 8.06	$ 25,226
E20	Casework & Furnishings	3,130	BGSF	$ 7.50	$ 23,475
F10	Special Construction	3,130	BGSF	$ -	$ -
F20	Selective Demolition	3,130	BGSF	$ 9.25	$ 28,951
BUILDING CONSTRUCTION SUBTOTAL					**$ 573,270**
	Design Contingency			18%	$ 103,189
	Subtotal				$ 676,459
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 47,352
	Subtotal				$ 723,811
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**3,130**	**BGSF**	**$ 231.25**	**$ 723,811**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Cheney Hall

ROEN ASSOCIATES

ESTIMATE SUMMARY						
No.	Description	Quantity	Unit of Measure	Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**					
	Foundations					
	SUBTOTAL FOUNDATIONS	**3,130**	**BGSF**	**$**	**-**	**$ -**
A20	**BASEMENT CONSTRUCTION**					
	Basement Construction					
	SUBTOTAL BASEMENT CONSTRUCTION	**3,130**	**BGSF**	**$**	**-**	**$ -**
B10	**SUPERSTRUCTURE**					
	Superstructure					
	SUBTOTAL SUPERSTRUCTURE	**3,130**	**BGSF**	**$**	**-**	**$ -**
B20	**EXTERIOR ENCLOSURE**					
	Exterior Enclosure					
	SUBTOTAL EXTERIOR ENCLOSURE	**3,130**	**BGSF**	**$**	**-**	**$ -**
B30	**ROOFING**					
	Roofing					
	SUBTOTAL ROOFING	**3,130**	**BGSF**	**$**	**-**	**$ -**
C10	**INTERIOR CONSTRUCTION**					
	Partitions					
	GWB Interior Wall Repair - Allowance	3,130	gsf	$	3.25	$ 10,173
	Fire Caulking at Penetrations	3,130	gsf	$	0.35	$ 1,096
	Interior - Caulking and Joint Sealants	3,130	gsf	$	0.30	$ 939
	Miscellaneous Carpentry - Allowance	3,130	gsf	$	1.00	$ 3,130
	Fittings / Specialties					
	Visual Displays					
	Marker Boards / Visual Displays - Allowance	1	ls	$	2,500.00	$ 2,500
101400	Signage (Code and Wayfinding)	3,130	gsf	$	0.75	$ 2,348
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	3,130	gsf	$	0.75	$ 2,348
	SUBTOTAL INTERIOR CONSTRUCTION	**3,130**	**BGSF**	**$**	**7.20**	**$ 22,532**
C20	**STAIRS**					
	Stairs					
	SUBTOTAL STAIRS	**3,130**	**BGSF**	**$**	**-**	**$ -**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Cheney Hall

ROEN ASSOCIATES

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
C30	**INTERIOR FINISHES**						
	Wall Finishes						
	Paint to Walls, Doors, Frames and Miscellaneous	3,130	gsf	$	5.00	$	15,650
	P-Lam Wainscot - Allowance	1	ls	$	15,000.00	$	15,000
	Acoustical Wall Treatment - Allowance	1	ls	$	10,000.00	$	10,000
	Miscellaneous Finish Carpentry Allowance	3,130	gsf	$	1.00	$	3,130
	Bases						
	Rubber Base	405	lf	$	3.00	$	1,215
	Floor Finishes						
	Carpet, Polished Concrete, Sealed Concrete, VCT, LVT - Allowance	3,130	sf	$	9.50	$	29,735
	Floor Prep / Moisture Vapor Reducer	3,130	sf	$	1.00	$	3,130
	Ceiling Finishes						
	ACT Ceiling (2x2), Painted GWB Ceiling, Painted Exposed Ceiling - Allowance	3,130	gsf	$	10.00	$	31,300
	SUBTOTAL INTERIOR FINISHES	**3,130**	**BGSF**	**$**	**34.88**	**$**	**109,160**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	SUBTOTAL CONVEYING SYSTEMS	**3,130**	**BGSF**	**$**	**-**	**$**	**-**
D20	**PLUMBING**						
	Plumbing						
	Per MW budget estimate dated 6-11-24	3,130	gsf	$	13.30	$	41,629
	SUBTOTAL PLUMBING	**3,130**	**BGSF**	**$**	**13.30**	**$**	**41,629**
D30	**HVAC**						
	HVAC						
	Per MW budget estimate dated 6-11-24	3,130	gsf	$	50.27	$	157,345
	SUBTOTAL HVAC	**3,130**	**BGSF**	**$**	**50.27**	**$**	**157,345**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Per MW budget estimate dated 6-11-24	3,130	gsf	$	3.70	$	11,581
	SUBTOTAL FIRE PROTECTION	**3,130**	**BGSF**	**$**	**3.70**	**$**	**11,581**
D50	**ELECTRICAL**						
	Electrical						
	Per MW budget estimate dated 6-11-24	3,130	gsf	$	49.00	$	153,370
	SUBTOTAL ELECTRICAL	**3,130**	**BGSF**	**$**	**49.00**	**$**	**153,370**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Cheney Hall

ROEN ASSOCIATES

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
E10	**EQUIPMENT**						
115300	**Laboratory Equipment**						
	Laboratory Equipment - Per RFD	1	ls	$	25,226	$	25,226
	SUBTOTAL EQUIPMENT	**3,130**	**BGSF**	**$**	**8.06**	**$**	**25,226**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	3,130	sf	$	7.50	$	23,475
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**3,130**	**BGSF**	**$**	**7.50**	**$**	**23,475**
F10	**SPECIAL CONSTRUCTION**						
	Special Construction						
	SUBTOTAL SPECIAL CONSTRUCTION	**3,130**	**BGSF**	**$**	**-**	**$**	**-**
F20	**SELECTIVE BUILDING DEMOLITION**						
	Building Interior Demolition						
	Flooring	3,130	sf	$	1.50	$	4,695
	Rubber Base	405	lf	$	1.00	$	405
	Ceilings	3,130	sf	$	1.50	$	4,695
	Miscellaneous Demolition	24	hrs	$	120.00	$	2,880
	Temporary Partitions / Dust Control - Allowance	500	sf	$	25.00	$	12,500
	Supervision, Hauling & Dump Fees	15%	on	$	25,175	$	3,776
	Mechanical, Electrical and Plumbing	In MEP Numbers Above					
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**3,130**	**BGSF**	**$**	**9.25**	**$**	**28,951**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**3,130**	**BGSF**	**$**	**-**	**$**	**-**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Sitework

Project Owner:	**Eastern Washington University**	**Architect:**	LMN Architects
Project Name:	**EWU Engineering Building**	**Project Duration:**	32 MO
Project Location:	Cheney, WA	**Building GSF:**	82,522
Project Start Date:	Q3, 2027	**Site GSF:**	65,000
Estimate Date:	June 25, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	65,000	SGA	$ 26.82	$ 1,743,564
G20	Site Improvements	65,000	SGA	$ 11.17	$ 726,364
G30	Site Civil / Mech Utilities	65,000	SGA	$ 4.40	$ 285,700
G40	Site Electrical Utilities	65,000	SGA	$ 10.31	$ 670,000
G50	Other Site Construction	65,000	SGA	$ 2.12	$ 137,500
SITEWORK SUBTOTAL					**$ 3,563,128**
	Design Contingency			18%	$ 641,363
	Subtotal				$ 4,204,491
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 294,314
	Subtotal				$ 4,498,805
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**65,000**	**SGA**	**$ 69.21**	**$ 4,498,805**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	**SITE PREPARATION**				
	Mobilization	1	ls	$ 30,000.00	$ 30,000
	Site Demolition & Relocation				
	Building Demolition (Cadet Hall)	13,200	gsf	$ 12.00	$ 158,400
	Building Demolition includes temporary enclosure (at Existing Building)	1,940	sf	$ 25.00	$ 48,500
	Sawcut Existing Asphalt Paving Lines	600	lf	$ 2.50	$ 1,500
	Remove Wheel Stops	10	ea	$ 75.00	$ 750
	Remove Trees	5	ea	$ 200.00	$ 1,000
	Remove Asphalt Paving	37,300	sf	$ 1.50	$ 55,950
	Remove Concrete Walks	9,800	sf	$ 2.50	$ 24,500
	Remove Dumpster/Mechanical Enclosure	800	sf	$ 10.00	$ 8,000
	Demo Utilities	160	lf	$ 30.00	$ 4,800
	Misc. Site Clearing	1	ls	$ 7,500.00	$ 7,500
	Site Earthwork				
	TESC Erosion Control				
	Filter Fabric Fence	650	lf	$ 8.00	$ 5,200

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Catch Basin Inlet Protection	10	ea	$	300.00	$	3,000
	Stabilized Construction Entry	2,800	sf	$	3.50	$	9,800
	Tree Protection Fencing	300	lf	$	25.00	$	7,500
	Clear and Grub	42,000	sf	$	0.30	$	12,600
	Excavation						
	Strip Topsoil (to stockpile)	1,556	cy	$	6.50	$	10,114
	Export Unsuitable - Allowance	138	cy	$	45.00	$	6,210
	Imported Fill - Allowance	1,158	cy	$	55.00	$	63,690
	Rock Excavation - Allowance	2,056	cy	$	70.00	$	143,920
	Shoring - Allowance	1	ls	$	25,000.00	$	25,000
	Basement Excavation and Export	13,704	cy	$	45.00	$	616,680
	Pilings (includes mobilization)	52	ea	$	6,500.00	$	338,000
	Finish Grading	96,500	sf	$	0.30	$	28,950
	Hazardous Waste Remediation						
	Allowance	13,200	gsf	$	10.00	$	132,000
	SUBTOTAL SITE PREPARATON	**65,000**	**SGA**	**$**	**26.82**	**$**	**1,743,564**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving (Base Courses Included)						
	Medium Duty (3" HMA over 4" Crushed Rock)	24,000	sf	$	3.75	$	90,000
	Concrete Site Work (Base Courses Included)						
	Curbs - Standard	880	lf	$	25.00	$	22,000
	Hardscape - Concrete	18,200	sf	$	9.00	$	163,800
	8" Concrete Paving	3,400	sf	$	10.00	$	34,000
	Brick Pavers - Allowance	1	ls	$	30,000	$	30,000
	Retaining Wall - Allowance	1	ls	$	75,000	$	75,000
	Pavement Markings/Site Signage						
	Striping - ADA Stalls with Signage	2	ea	$	1,200.00	$	2,400
	Striping - Standard Stalls	50	ea	$	75.00	$	3,750
	Stop Signs	2	ea	$	800.00	$	1,600
	Tactile Warning Strips	40	sf	$	30.00	$	1,200
	Site Development						
	Site Furnishings (Allowance)	1	ls	$	35,000	$	35,000
	Site Improvements not shown (Allowance)	1	ls	$	100,000	$	100,000
	New Electrical/Trash Enclosure - Allowance	1	ls	$	35,000	$	35,000
	Landscaping/Irrigation						
	Landscaping/Irrigation (Allowance)	35,000	sf	$	3.50	$	122,500
	Place Topsoil (from stockpile)	1,556	cy	$	6.50	$	10,114
	SUBTOTAL SITE IMPROVEMENTS	**65,000**	**SGA**	**$**	**11.17**	**$**	**726,364**

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
G30	**SITE CIVIL / MECHANICAL UTILITIES**				
	Water Service				
	Tie-in at Existing (includes gate valve)	1	ea	$ 3,000.00	$ 3,000
	Water/Fire Line, 8" Ductile Iron (includes trench, bedding and backfill)	150	lf	$ 85.00	$ 12,750
	Water/Fire Line, 6" Ductile Iron (includes trench, bedding and backfill)	100	lf	$ 65.00	$ 6,500
	Water Meter	1	ea	$ 5,000.00	$ 5,000
	Irrigation Meter	1	ea	$ 1,500.00	$ 1,500
	Irrigation Line, 1" PVC (includes trench, bedding and backfill)	30	lf	$ 30.00	$ 900
	Double Check Valve (in vault)	1	ea	$ 12,500.00	$ 12,500
	Pressure Reducing Valve (Domestic)	1	ea	$ 3,700.00	$ 3,700
	Domestic Water, 2" Ductile Iron (includes trench, bedding and backfill)	100	lf	$ 45.00	$ 4,500
	Fire Line - Dry (4" Ductile Iron)	100	lf	$ 55.00	$ 5,500
	FDC - Fire Department Connection	1	ea	$ 2,750.00	$ 2,750
	PIV - Post Indicator Valve	1	ea	$ 2,500.00	$ 2,500
	Hydrant Assembly	1	ea	$ 4,500.00	$ 4,500
	Sanitary Sewer Systems				
	Tie-in at Existing	1	ea	$ 750.00	$ 750
	Side Sewer, 6" PVC (includes trench, bedding and backfill)	130	lf	$ 55.00	$ 7,150
	Cleanouts	1	ea	$ 750.00	$ 750
	Storm Drainage				
	Drain Line, 8" PVC (includes trench, bedding and backfill)	100	lf	$ 65.00	$ 6,500
	Roof Drain Line, 4"/6" PVC (includes trench, bedding and backfill)	500	lf	$ 35.00	$ 17,500
	Underslab Pipe (Allowance)	1,000	lf	$ 40.00	$ 40,000
	Footing Drainpipe (Allowance)	500	lf	$ 35.00	$ 17,500
	Storm Drainage in Parking Lot (Allowance)	1	ls	$ 25,000.00	$ 25,000
	Cleanouts	3	ea	$ 650.00	$ 1,950
	Detention Tanks	2	ea	$ 35,000.00	$ 70,000
	Control and Access Structures	2	ea	$ 14,000.00	$ 28,000
	Gas:				
	Natural Gas Trench and Backfill (Gas Line by Utility Purveyor)	200	lf		NIC
	Existing Street Surface Repair/Traffic Control	200	sf	$ 25.00	$ 5,000
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**65,000**	**SGA**	**$ 4.40**	**$ 285,700**
G40	**SITE ELECTRICAL UTILITIES**				
	Electrical and Telecom Utilities				
	Relocation of Existing Electrical Services for new Main Entry	1	ls	$ 550,000.00	$ 550,000
	Exterior Lighting - Allowance	1	ls	$ 120,000.00	$ 120,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**65,000**	**SGA**	**$ 10.31**	**$ 670,000**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Sitework

ROEN ASSOCIATES

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G50	**OTHER SITE CONSTRUCTION**						
	Service Tunnels - Allowance						
	Utilidor Tunnel extended to beyond site footprint for future buildir	20	lf	$	4,500	$	90,000
	Utilidor Tunnel - Excavation Allowance	1	ls	$	17,500	$	17,500
	Landscaping Repair - Allowance	1	ls	$	5,000	$	5,000
	Other Site Construction						
	50' HDPE SDR-11 Pipe for Low Temperature Heating Water Piping (To be Direct Buried, Insulated & Jacketed) - Allowance	1	ls	$	20,000.00	$	20,000
	Trenching and Backfill - Allowance	1	ls	$	5,000.00	$	5,000
	SUBTOTAL OTHER SITE CONSTRUCTION	**65,000**	**SGA**	**$**	**2.12**	**$**	**137,500**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**65,000**	**SGA**	**$**	**-**	**$**	**-**

9.7 CHENEY HALL, CEB & CADET HALL FCS REPORTS

Eastern Washington University	**Institution ID**	370	
Eastern Washington University	**Site ID**	OFMSID00002	
Cheney Hall	**Facility ID**	1163	
Facility Size - Gross	31,018	**Facility Size- Assignable**	21,295
Original Year Of Construction	1966	**Year Of Last Renovation**	2005
Facility Use Type	Teaching Labs		
Construction Type	Medium		
Survey Date	12/01/15	**Survey Done By**	SEK

Facility Condition Summary

Overall Facility Condition Score **2.6**

Facility Components

Uniformat II Components	Component Scores	Component Comments
A Substructure:	**2.0**	
Foundations		
Standard Foundations	2	
Slab on Grade	2	
B Shell:	**2.3**	
Superstructure		
Floor Construction	2	
Roof Construction	2	
Exterior Closure		paint shop score - 3 fab shop score - 5, internal stairwell rails not to code
Exterior Walls	2	
Exterior Windows	4	
Exterior Doors	3	
Roofing		
Roof Coverings	3	
Roof Opening	3	
Projections	2	
C Interiors:	**2.8**	
Interior Construction		
Fixed and Moveable Partitions	3	
Interior Doors	3	
Specialties	3	
Staircases		
Stair Construction	2	
Stair Finishes	2	

Print Date: 08/24/18

Interior Finishes		
Wall Finishes	3	
Floor Finishes	2	
Ceiling Finishes	4	
D Services:	**3.0**	
Vertical Transportation		life cycle met - good working condition though (C. Opsal)
Elevators and Lifts	3	
Plumbing		1st floor - 1, 2nd floor - 4 (J. Butler)
Plumbing Fixtures	4	
Domestic Water Distribution	3	
Sanitary Waste	3	
Rain Water Drainage	3	
Special Plumbing Systems	3	
HVAC		score - 2 (J. Butler)
Energy Supply	3	
Heat Generating Systems	3	
Cooling Generating Systems		
Distribution Systems	3	
Terminal and Package Units	4	
Controls and Instrumentation	4	
Special HVAC Systems and Eq	4	
Fire Protection		
Fire Protection Sprinkler Syste	5	
Stand-Pipe and Hose Systems		
Fire Protection Specialties	3	
Special Fire Protection System		
Electrical		
Electrical Service and Distributi	2	
Lighting and Branch Wiring	2	
Communication and Security S	4	
Special Electrical Systems		
E Equipment and Furnishings:	**1.3**	
Equipment and Furnishings		
Fixed Furnishings and Equipm	1	
Moveable Furnishings (Capital	2	
E Special Construction:		
Special Construction		
Integrated Constr. & Special Co		
Special Controls and Instrume		

Facility Survey Summary

Eastern Washington University	Institution ID	370
Eastern Washington University	Site ID	OFMSID00002
Computing and Engineering Sc	Facility ID	1160

Facility Size - Gross	98,383	Facility Size- Assignable	54,910
Original Year Of Construction	2005	Year Of Last Renovation	
Facility Use Type	Teaching Labs		
Construction Type	Medium		

Survey Date	12/01/15	Survey Done By	SEK

Facility Condition Summary

Overall Facility Condition Score 1.6

Facility Components

Uniformat II Components	Component Scores	Component Comments
A Substructure:	2.2	
Foundations		
Standard Foundations	1	
Slab on Grade	4	
B Shell:	1.0	
Superstructure		
Floor Construction	1	
Roof Construction	1	
Exterior Closure		fab shop score - 1
Exterior Walls	1	
Exterior Windows	1	
Exterior Doors	1	
Roofing		
Roof Coverings	1	
Roof Opening	1	
Projections	1	
C Interiors:	1.4	
Interior Construction		
Fixed and Moveable Partitions	1	
Interior Doors	1	
Specialties	1	
Staircases		
Stair Construction	1	
Stair Finishes	2	

Print Date: 07/25/16

Eastern Washington University	Institution ID	370
Eastern Washington University	Site ID	OFMSID00002
Computing and Engineering Sc	Facility ID	1160

Interior Finishes	
Wall Finishes	2
Floor Finishes	2
Ceiling Finishes	1
D Services:	**2.1**
Vertical Transportation	
Elevators and Lifts	2
Plumbing	
Plumbing Fixtures	2
Domestic Water Distribution	2
Sanitary Waste	2
Rain Water Drainage	2
Special Plumbing Systems	2
HVAC	
Energy Supply	2
Heat Generating Systems	2
Cooling Generating Systems	
Distribution Systems	3
Terminal and Package Units	2
Controls and Instrumentation	2
Special HVAC Systems and Eq	3
Fire Protection	
Fire Protection Sprinkler Syste	2
Stand-Pipe and Hose Systems	
Fire Protection Specialties	2
Special Fire Protection System	
Electrical	
Electrical Service and Distributi	2
Lighting and Branch Wiring	2
Communication and Security S	1
Special Electrical Systems	
E Equipment and Furnishings:	**2.4**
Equipment and Furnishings	
Fixed Furnishings and Equipm	3
Moveable Furnishings (Capital	1
E Special Construction:	
Special Construction	
Integrated Constr. & Special Co	
Special Controls and Instrumen	

Print Date: 07/25/16

Eastern Washington University	**Institution ID**	370	
Eastern Washington University	**Site ID**	OFMSID00002	
Cadet Hall	**Facility ID**	1157	

Facility Size - Gross	10,187	**Facility Size- Assignable**	7,760
Original Year Of Construction	1956	**Year Of Last Renovation**	1978
Facility Use Type	General Classroom		
Construction Type	Heavy		

Survey Date	12/01/15	**Survey Done By**	SEK

Facility Condition Summary

Overall Facility Condition Score 2.7

Facility Components

Uniformat II Components	Component Scores	Component Comments
A Substructure:	**3.0**	
Foundations		
Standard Foundations	3	
Slab on Grade	3	
B Shell:	**2.9**	
Superstructure		
Floor Construction	3	
Roof Construction	3	
Exterior Closure		fab shop score - 5, inside staircase rail & 2nd floor fire escape not to code
Exterior Walls	3	
Exterior Windows	3	
Exterior Doors	3	
Roofing		
Roof Coverings	2	
Roof Opening	2	
Projections	2	
C Interiors:	**3.0**	
Interior Construction		
Fixed and Moveable Partitions	3	
Interior Doors	3	
Specialties	3	
Staircases		
Stair Construction	3	
Stair Finishes	3	

Eastern Washington University	Institution ID	370
Eastern Washington University	Site ID	OFMSID00002
Cadet Hall	Facility ID	1157

Interior Finishes		
Wall Finishes	3	
Floor Finishes	3	
Ceiling Finishes	3	
D Services:	**3.8**	
Vertical Transportation		NA
Elevators and Lifts		
Plumbing		
Plumbing Fixtures	4	
Domestic Water Distribution	3	
Sanitary Waste	3	
Rain Water Drainage	3	
Special Plumbing Systems		
HVAC		score - 3 (J. Butler)
Energy Supply	4	
Heat Generating Systems		
Cooling Generating Systems	3	
Distribution Systems	4	
Terminal and Package Units	4	
Controls and Instrumentation	5	
Special HVAC Systems and Eq		
Fire Protection		Detection/Reporting in place of suppression
Fire Protection Sprinkler Syste	5	
Stand-Pipe and Hose Systems		
Fire Protection Specialties	4	
Special Fire Protection System		
Electrical		life cycle met (C. Opsal)
Electrical Service and Distributi	4	
Lighting and Branch Wiring	4	
Communication and Security S	3	
Special Electrical Systems		
E Equipment and Furnishings:	**3.0**	
Equipment and Furnishings		
Fixed Furnishings and Equipm	3	
Moveable Furnishings (Capital	3	
E Special Construction:		
Special Construction		
Integrated Constr. & Special Co		
Special Controls and Instrume		

9.8 OUTLINE SPECIFICATIONS

The following outline specifications form the basis for the Engineering Building construction costs:

A Substructure

A10 Foundations

A prior geotechnical report for this project was prepared by AMEC Earth and Environmental Inc. dated October 8, 2001. The geotechnical report recommends shallow foundation system for new Engineering Building. Existing soft clay soils will be over-excavated approximately 2 to 4 feet below bottom of footings and replaced with compacted structural fill to accommodate for the shallow foundation. Compacted fill will likely need to be imported as existing site soil is not considered appropriate due to its long term compressibility. Perched ground water was encountered at depth of 6 to 10 feet below ground surface during the soil exploration.
New column foundation at the vicinity of an existing utility tunnel traversing at the west of the building site will be designed to minimize the surcharge load to the tunnel.

A20 Basement

Basement wall will consist of 12" thick concrete wall with continuous wall footing and slab on grade can be 5" thick reinforced concrete slab underlain by properly prepared subgrade.
A soil report addendum will be required to provide updated design information per the current building code.

B Shell

B10 Substructure

Floor to Floor Height: A height of 18'-0" floor to floor at the ground level and level two is established to accommodate the robust mechanical and electrical equipment serving the 'shop' like laboratories. A height of 16'-0" floor to floor will be used at levels one to align with the floor to floor of CEB for ease of connecting into the existing building.

Codes:
The governing building code will be the International Building Code, latest edition with Washington State amendments, WAC 51-50. Other referenced design codes are anticipated to include the AISC Manual of Steel Construction (LRFD), Second Edition, ACI Building Code, Commentary, ACI 318 14, ASCE 7-16 and AWS Structural Welding Code (AWS D 1.1 10).

Design Load

- Live Loads:

Classrooms, Offices and Interior Spaces	81 psf, reducible
Lobby, Exterior and Exit Areas	100 psf, reducible
Light Storage	125 psf, non-reducible
Laboratory and Laboratory Support Area	100 psf, reducible
Roof	20 psf, reducible

- Dead Loads:
  General: Estimated weight of construction material.
  Partitions: 10 psf included in seismic mass per building code requirement; 15 psf minimum for gravity design.
  Typical ceiling and finishes: 5 psf.
  Mechanical Equipment: 100 psf or actual weight of mechanical equipment.

- Lateral Loads:

Seismic design criteria will be based on ASCE 7-16.

Seismic Design Parameters:

Risk Category	III
Seismic Design Category	D
Design Spectral Response Coefficient	SDS = 0.312
Design Spectral Response Coefficient	SD1 = 0.177
Importance Factor	I= 1.25
Structural Response Modification	R= 8 (Steel Buckling-Restrained Brace Frame)
Deflection Amplification Factor	Cd = 5
Drift Limit	2.0%
Seismic Design Category	E

Wind Design Parameters:

Wind Basic Wind Speed	115 miles per hour
Wind Exposure	B
Wind Importance Factor	I = 1.0

Materials

Concrete

f'c = 5,000 psi (NWC); All columns
f'c = 5,000 psi (NWC); All beams and slab
f'c = 5,000 psi (NWC); Basement Walls
f'c = 4,000 psi (NWC); Column Footings
f'c = 4,000 psi (NWC); Basement Wall Footings
f'c = 4,000 psi (NWC); Slab on grade
f'c = 3,000 psi (LWC); Concrete on Metal Deck

Reinforcing steel

ASTM A615 Grade Steel 60 ksi or 75 ksi except as noted on the drawings.

Structural Steel

ASTM 992 for all structural shapes except as noted otherwise
ASTM A500, Grade B for all structural tubes
A490 Anchor bolts
A325 High strength bolts, except as noted otherwise

Gravity-Load Resisting System

- Steel construction with concrete filled metal decks supported on steel beams is proposed. The elevated floors and roof diaphragms will consist of 3 ¼" light-weight concrete over 3" metal deck on steel beams and girders, supported by steel columns.

Lateral-Load Resisting System:

Braced Frame above Level 1 and concrete shear walls below are used to provide seismic bracing for the Engineering Building. Buckling Restraint Braced Frames (BRBF) will be used in both directions at the upper floors and evenly distributed throughout the building and strategically located within the stair and shaft walls. BRBF's will transition to concrete shear walls at the Ground Level.

BRBF/Concrete shear wall scheme was selected over others because it offered added values and opportunities that significantly enhanced the project. Benefits of the proposed structural scheme

include:

- Provides a much more sustainable, lighter and a very high-performing structure.
- BRBF/Concrete shear wall are ideal for drift control due to their inherent stiffness. Strategic placement of the braced frames and shear walls adjacent to stair and restroom walls or partition allows total flexibility for space planning.
- The building, as designed, is very stiff and will have significantly less inter-story drift than what the code permits.
- The smaller story drift will limit the building damage in an earthquake event and allow restoration of building functionality and occupancy much more expeditiously than would be possible with other more flexible lateral force resisting systems.
- This is no vertical discontinuity in the braced frames. This not only simplifies the construction but also yields a structure which is much more robust.
- The proposed structural system is very cost-effective and also minimizes the construction time.
- Long-span roof structure over the Metallic Lab can be achieved economically with steel beams.

Penthouse Construction: Construction will be structural steel columns and bracing, and steel roof framing.

B20 Exterior Enclosure

Exterior Walls:

- The brick wall system will include; an air cavity, rigid insulation, air barrier, sheathing, steel framing, batt insulation, a vapor barrier, and interior drywall.
- Steel framing will support curtain walls and window systems, and metal panel and louvered penthouse enclosure walls.

Exterior Windows, Doors and Louvers:

- Punched aluminum frame windows at laboratories within brick wall system, curtain walls at building entries and laboratory facades parallel to Washington Street and the Art Walk as well as glazed entrance doors will all be aluminum with anodized finish. All glazing will be insulated low-E performance glass.
- Operable vertical panel doors at laboratories to exterior.
- Hollow metal exterior doors and interior doors at mechanical spaces.
- Painted hollow metal doors and frames at mechanical spaces, service entrances, and emergency exits.
- Louvers will be painted aluminum, fixed and drainable.

B30 Roofing

Roofing materials will include the following: thermoplastic membrane roofing over tapered rigid insulation, roof walkway pads, painted sheet metal coping at parapets, and roof stanchion tie-offs.

C Interiors

C10 Interiors Construction

Partitions: Typical interior partitions will be metal studs with 5/8" type 'x' gypsum wallboard, impact resistant gypsum wallboard on all corridor walls, and acoustic insulation where required. All demising walls will be built to underside of structure. Fire and smoke stopping will be provided at all rated wall and floor penetrations.

Doors: Interior doors will be of formaldehyde free solid core particle board, or mineral cores at labeled doors, with stained hardwood veneer faces. Doors will have satin stainless steel finish hardware with required accessories. Interior door and relight frames will be of hardwood or

painted hollow metal, with fire rated glass where required.

C20 Stairs
The two egress stairs will also serve as the communicating stairs and are located adjacent to the building entries and will have steel structure with architectural detailing including precast concrete treads and perforated metal risers.Doors into egress stair will be design to remain open on hold opens and automatically close in event of fire.

C30 Interior Finishes
Floor Finishes: Interior floor finishes will include polished concrete in circulation areas and lobby/ work area/ event space paralleling Washington Street, resilient tile in controlled research and Sensor Tech Lab and sealed concrete in all other teaching, project and research laboratories. Additional floor finishes include low VOC carpet tile at collaboration spaces and classrooms, ceramic tile at restrooms, sealed concrete at Tech Offices, support and back of house spaces and a durable traffic coating at the penthouse.
Wall Finishes: Interior wall finishes will include painted gypsum wallboard, ceramic tile at restrooms, acoustic wall panels in classrooms and at circulation, hardwood architectural detailing in the open student study lounge/work area, and corner guards as required. Sections of storefront glazing provide visibility into the teaching, project and research laboratories.

Ceiling Finishes: Interior ceiling finishes include exposed structure, painted gypsum wallboard, suspended acoustical ceiling systems, and wood slat ceiling clouds in public circulation area and collaboration areas.

Interior specialties: See E2015 Non-Laboratory Casework and Other Specialties.

D Services
D10 Conveying Systems
One 3 stop MRL passenger and one 4 stop MRL freight elevator with roof access will be provided, with ladders to the elevator pits.

D20 Plumbing
D2010 Plumbing Fixtures:

Restroom wall hung water closets, urinals and lavatories will be constructed of commercial grade vitreous china. Lavatory traps and supplies will be insulated per accessibility requirements.

Hands free sensor operated electric faucets with integral thermostatic mixing controls will be provided on toilet room lavatories. Sensor operated electric flush valves will be used for water closets and urinals.

Lab sinks will either be epoxy as part of the casework or stainless steel for chemical resistance or durability. Custodial sinks will be provided with wall faucet and lever handles.

Emergency showers and eyewash stations within the labs/shops, as provided under E10, will be serviced from a new centralized tempered water system that delivers potable tepid water between 60 and 95 degrees to the safety stations.

Laboratory fume hoods, as provided under E10, will be pre-piped with utility connections at the top and rear of hood.

Water Conservation- The following items will be reviewed by the design team and Eastern

Washington University for Water Conservation and Long Term Campus Standardization / Maintenance considerations; dual flush (1.6/1.0 GPF) water closets, ultra-low flow water closets (1.28 GPF), pint flow urinals, and lavatory faucets to deliver 0.5 GPM.

D2020 Domestic Water Distribution:
Domestic cold water and 115-120°F hot water distribution systems will be provided throughout the building. The existing water heaters will be modified to service both the new addition and existing building.

A hot water recirculation system controlled through the campus energy management system (EMS) will be provided and distributed at low velocities, using “in-line” all-bronze circulating pumps.

Hot water will be generated from water-to-water heat exchangers connected to the new low temperature heating water system, serviced by the newly proposed geothermal heating water system. Domestic hot water will be generated between 115-120°F. The existing water heating system in the basement of the existing building will be modified for expanded program demands.

Valves will be provided at all branch take-offs to individual fixture groups, and zone valves will also be provided. Balancing valves will be placed in return loops at connections of the hot water piping.

Materials:
Water Piping: Copper type L

D2030 Sanitary Waste System
A gravity sanitary drainage system will be provided to serve all plumbing fixtures and equipment (see also Lab Waste and Vent System under Section D2090).

Floor drains will be provided at safety showers in keeping with campus standards with the exception of metal shops that have the possibility of introducing oil into the sanitary sewer. Oil water separators are not anticipated at this time.

Materials:
Drain, Waste, Vent Piping (above grade) : Cast Iron
Waste Piping (below grade): PVC, ABS, or cast Iron

D2040 Rainwater Drainage
Gravity primary and overflow storm drainage systems will be provided to serve the roof levels with each system piped separately outside of the building. Rain leaders will be located within the heated portion of the building to prevent freezing of the pipe and will be insulated to prevent condensation from developing on the pipe. Overflow drains will terminate at grade level on splash blocks.

Materials:
Storm Drain Piping (above grade): Cast Iron
Storm Drain Piping (below grade): PVC, ABS, Cast Iron

D2090 Other Plumbing Systems
Compressed Air System: The existing air compressors are having issues with breakdowns due to age and wear. A new central compressed air system with duplex compressors, air drier and receiver storing 125 psig air will be provided for shop uses. Compressed air will be delivered at

100 psig and be piped throughout the laboratory/shop spaces. Isolated areas that require clean/dry air will have point of use driers and filters and air pressure regulators. The compressors will be located in the new addition to allow space for expanded water heaters in the existing mechanical room.

Lab Vacuum System: The existing vacuum pumps are obsolete and do not have available parts. A new vacuum pump and receiver will be provided in the new mechanical room to make room for expanded water utilities in the existing mechanical room. High vacuum needs will be provided from owner furnished, owner installed local pumps.

Natural Gas System: Natural gas from the existing building will be extended to the foundry for use in the kilns. Extensive use of natural gas is not anticipated.

Lab Specialty Gas Systems: Central house system for nitrogen and specialty gases are not anticipated. If required, these will be Owner provided at the point of use.

Welding Gas Systems: Central welding gas systems are not anticipated. Welding gases will be Owner provided from movable welding carts on wheels.

Industrial Water Systems: Cold and 115-120°F hot non-potable water distribution systems will be provided throughout the new addition to selected equipment and lab faucets. The systems will be isolated from the domestic water system with a reduced pressure backflow preventer assembly. Hot water heat exchangers and storage tanks will be the same as described in Section D2020 and will be located within the existing mechanical room.

Industrial Hot Water Recirculation System: A recirculation system will be provided and distributed at low velocities to ensure fixtures and equipment requiring hot water will have hot water readily available through the use of “in-line” all-bronze circulating pumps.

Tempered Water System: Potable cold water will be tempered by mixing domestic cold water and domestic hot water at a new master mixing valve located in the existing mechanical room to deliver tempered water to the emergency showers and eyewash stations throughout the building.

Lab Waste and Lab Vent System: Laboratory sinks in casework, chemical fume hood cup sinks and floor drains in chemical use areas will be piped in a dedicated waste system that will allow for future monitoring by regulatory authorities for possible discharges. Outside the building, after the monitoring point, the lab waste system will combine with the building sanitary sewer. Waste and vent piping will be chemical resistant.

Snow Melt System: A hydronic snowmelt system will be provided for exterior walkways at main entrances and site stairs that are difficult to access with mechanical snow removal equipment. Hydronic heat for the snowmelt system will be generated from a water-to-water heat exchanger connected to the new additions hot water heating system.

Materials:
Compressed Air Piping: Copper
Lab Air Piping: Copper
Lab Vacuum Piping: Copper
Lab Natural Gas Piping: Black steel
Industrial Hot/Cold Water/Tempered Water Piping: Copper
Lab Waste Piping: Polypropylene
Snowmelt Piping (buried in slab): Polypropylene

D30 HVAC Systems- General

Campus Chilled Water Plant: The campus has a central chilled water plant that distributes chilled water to the buildings on campus through an underground tunnel system. The new open-source geothermal plant will be connected to the existing campus chilled water piping network, providing an ultra-high efficiency first stage of cooling and an opportunity to trade energy between this project and all other buildings on campus currently connected to the campus chilled water system, improving the overall campus energy efficiency. The new addition basement mechanical room is in close proximity to the campus tunnel and the tunnel will be extended to connect to the basement mechanical room with a 6" service for the new addition.

Campus Steam Plant: The campus has a central steam plant that distributes steam and condensate to the buildings on campus through an underground tunnel system. The new addition basement mechanical room is in close proximity to the campus tunnel and the tunnel will be extended to connect to the basement mechanical room with a 4" high pressure steam service for the new addition.

Heating System: Primary heating will be provided from campus low temperature heating water (120°F) supplied by the new open-source geothermal heating plant. Low temperature heating Water (LTHW) will be routed to this building via 6"Ø supply and return pipes. The LTHW will then be distributed through the building via fully redundant building heating water pumps. Glycol hot water solution will be piped to the air handlers, hydronic heating systems, and snow melt heat exchangers. Since the nature of the new addition is primarily heating and cooled with 100% outside air ventilation systems, radiant heating should be provided for off-hour heating requirements.

Ventilation Requirements: It is anticipated that the lab/shop spaces in the new addition will be 100% outside air systems with heat recovery where air quality is suitable for passing through filters and equipment. Six (6) labs with fume hoods should be located in close proximity to be zoned from the same air handling unit if practical, so that they can be efficiently ventilated 24 hours a day (minimum 6 air changes per hour in the occupied mode and 4 air changes per hour in the unoccupied mode).

Acoustic Considerations: Vibration isolation of pumps and compressors will be provided. Additional acoustic considerations will include limiting duct velocities through ductwork, terminal units and air inlets/outlets to achieve space NC, use of sound attenuators in the duct systems, and vibration isolation of mechanical equipment with spring isolators and flexible connections will also be employed.

Outdoor Design Conditions: Heating Systems will be sized for the ASHRAE median of extremes for Cheney, Washington which is-9°F. Cooling systems will be sized for the ASHRAE 0.1% design condition temperature for Cheney, Washington which is 99°F dry bulb and 69°F wet bulb.

Indoor Design Conditions:
When occupied, office and lab spaces will be maintained between 68 and 75°F.
Telecommunication rooms will control to 68-75°F 24 hours per day, 7 days per week. Mechanical and electrical spaces will control to 55-85°F.

D3010 Energy Supply

Electrical service to the EWU Campus primary distribution system is provided by the City of Cheney.

Campus low temperature heating water and chilled water will be delivered from the GeoEco Plant. The GeoEco Plant will provide all-electric heating and cooling to the building utilizing a ground source heat pump. This new GeoEco Plant will provide higher efficiency chilled water to the building that the existing chilled water plant, and will allow energy trading between all buildings on campus that are currently connected to the existing chilled water distribution system.

Steam will be provided for laboratory steam sterilizers.

D3040 HVAC Distribution

New Addition Supply: The new addition lab/shop areas will be serviced from 100% outside air systems with heat recovery and perimeter heat (estimated at 80-85,000 cfm). Units will have supply fans, hot water heating coils, chilled water coils and filters with VAV controls and multiple fans installed in an array for redundancy. Each zone will have its own air terminal unit for regulation of airflow based upon occupied/unoccupied airflows and temperature requirements. The non-lab core spaces will be serviced from high efficiency VAV systems (estimated at 32,000 cfm) although alternative systems such as DOAS system with chilled beam terminal units should be evaluated in the design phase.

New Addition Exhaust: Exhaust will be ducted to exhaust fans with heat recovery at the roof level. Fans will be manifolded for partial redundancy and spaces will have pressure independent exhaust terminal units. Specialty exhaust for products of combustion such as foundry furnaces/ kilns will be ducted separately out the building without heat recovery. Air will be filtered at grilles prior to entering the exhaust air terminal units of each space. Exhaust systems are anticipated to be 70-75,000 cfm.

Renovation:

Ground Floor:

Due to reconfiguration of this zone, all mechanical upgrades in this area should be considered Heavy Renovation

Additive manufacturing: This zone is serviced by a 22,000 cfm AHU which has 100% outside air and 100% exhaust capabilities, has too much air volume and is too energy intensive for the new proposed use. This scope should replace or rebuild existing AHU-5 and associated relief/exhaust fan to provide capacity in the 5-7,500 cfm range. Due to the industrial use of former metallics lab all ductwork in this zone should be removed and replaced with new.

Teams room, storage, and student lounge: Remove existing ductwork and exhaust fans including wood working exhaust systems. Provide new hot and cold duct VAV mains from existing AHU-1 in the north ground floor mechanical room and new dual duct VAV terminal units for these spaces.

Material Science Lab, CE Construction Materials, and shared Research: AHU-4 (10,000 cfm with 100% osa capability) and a VFD controlled relief fan currently feeds the wood shop. Extend AHU-4 ductwork to service this zone. Provide supply and exhaust terminal units for each zone with hot water reheat from the new addition. Provide VAV controls on the supply fan. Retrofit or provide new exhaust fan for increased exhaust duct static pressure.

The existing dust collectors will not be required for the new scope and should be removed as they have had several breakdowns and should not be considered reliable for continued long term use for the expanded woodworking/construction shop areas.

Second Floor

This floor should be considered light tenant improvement work for HVAC systems and moderate

plumbing renovations in the expanded thermodynamics lab and shared research which is nearly doubling in size.

This floor is serviced by dual duct VAV air handling systems. Provide new VAV terminal units and new branch ductwork to accommodate new zoning. Modify plumbing as required for new use.

Third Floor
This floor should be considered light tenant improvement work for HVAC and plumbing systems.

This floor is serviced by dual duct VAV air handling systems. Provide new VAV terminal units and new branch ductwork to accommodate new zoning. Modify plumbing as required for new use. Potential scope in this zone could include relocation or removal of a sink in the existing kitchen area and potential relocation of vent pipes in walls.

Dust Collector: A dust collection system will be provided for the wood shop. The dust collector will be located on the south side of the new addition outside the shop area with access for dustbin service. Air will be filtered with final filters and recirculated back to the space for energy conservation.

Process Exhaust: Provide exhaust for point source particulates. Consider filtration units for welding that clean the air prior to recirculating back to the space.

Supply/return and non fume hood exhaust ductwork: Galvanized steel
Chemical fume hood exhaust ductwork: Stainless steel although galvanized will be considered for manifolded systems diluted with general exhaust.

D3050 Terminal and Packaged Units
Areas that have 24-hour process cooling loads such as the main telecommunication rooms will be serviced from dedicated standalone cooling units.

D3060 HVAC Instrumentation and Controls

Direct Digital Control (DDC): The project will utilize a Direct Digital Control (DDC) for the control of the HVAC systems, providing for heating and cooling control, peak load demand limiting and start/stop optimization. Damper and valve actuators will be electronic. Room thermostats will be an electronic adjustable type with override switch for occupant activation to occupied mode during unoccupied periods.

Energy Management System (EMS): The EMS controls will be compatible with EWU's campus BACnet system and existing computing and engineering facility controls manufactured by Alerton. Controls will interface and communicate with this network and front-end operator's terminal for the purpose of remote operation and maintenance. The EMS will include display and report real-time building systems performance data. The EMC controls will provide energy metering interface for the new and existing water, chilled water, low temperature heating water, steam and electric utilities servicing the existing building and new addition to a Skyspark control system.

Within the existing facility, the scope will include an upgrade of the Global Building Controller for compatibility with the new facility software. Existing supply and exhaust VAV will also be considered for controls upgrade due to cleaning issues associated with airflow measurement and improved airflow accuracy with new controllers for building pressurization.

Chemical Fume Hood Controls: Variable air volume controls shall be considered for the hoods for

acoustics and energy conservation.

D3070 Testing, Adjusting and Balancing

Air systems (supply, return, and exhaust), hydronic, and domestic hot water recirculation systems will be completely balanced in accordance with Associated Air Balance Council or National Environmental Balancing Bureau.

D40 Fire Protection

General System: The existing system will be extended from the existing building to the new addition and the addition will be sprinklered in accordance with the City of Cheney requirements.

Sprinklers: The building light hazard areas (office, lecture rooms, circulation spaces) will be sprinkled to light hazard requirements. Electrical, mechanical and non-chemical use labs will be sprinklered to ordinary hazard group 1 requirements. Labs, shops, and other higher hazard areas will be sprinklered to ordinary hazard group 2 requirements. The fire system will be divided into multiple zones by floor for identification and annunciation at the central fire alarm panel.

Standpipe: A fire protection standpipe will be required and provided at each exit stairwell if the highest occupied level of the building exceeds 30 feet above grade.

D50 Electrical Systems General

The building electrical systems will be designed in accordance with the latest revised edition of the following codes:

National Electrical Code
- International Building Code (IBC)
- International Fire Code (IFC)
- Regulations of the State Fire Marshal
- Electrical Safety Order of the Washington State Department of Labor and Industries
- Washington Administrative Code
- Americans with Disabilities Act (ADA)
- Washington State Non Residential Energy Code
- Requirements of Washington State Industrial Safety & Health Administration (WISHA)

The building electrical systems will be designed in accordance with the following standards:
- Illuminating Engineers Society of North America (IESNA)
- Eastern Washington University Construction Standards

D5010 Service and Distribution

Site Electrical: The existing building receives power from the existing campus 13.2KV primary electrical distribution system via existing 13.2KV Switch #1. As part of the proposed building addition, a new building service will be established at the new back of house service area. The existing service will be removed and refed from the new service to allow for a new building main entry from the West. The existing 13.2KV Switch #1 is loop fed from the campus primary electrical distribution system and is suitable for new service work.

Temporary Site Electrical: The existing building service transformers, generator and propane tank will require temporary relocation prior to the start of building excavation. It is proposed that this equipment be relocated North and adjacent to the existing parking lot to be outside of the excavation for the new building ground floor. This relocation will allow the existing building to remain in service during the construction of the new building. Once the new building permanent services are established, the existing building temporary services will be replaced with new

services from the new construction. The existing building telecom services from the existing tunnel are not expected to be impacted by the construction of the new building.

Building Normal Electrical Service: (3) new three-phase four-wire electrical services will be provided for the new building. These new electrical services will be derived from (1) new 480/277V outdoor pad mount transformer and (2) new 208/120V outdoor pad mount transformers, which will be connected to the EWU campus 13.2KV primary electrical distribution system. (2) new main switchboards will be located in a dedicated main electrical room located on the ground level. The dedicated main electrical room will be located as closely as possible to the new outdoor pad mount transformers to limit the secondary service cable length. The existing building 480V & 208V main switchboards will be refed from the new services. The new 480V main switchboard will refeed the existing building 480V switchboard. The existing and new 208V main switchboards will each be served by a dedicated 208V service transformer.

NEC Article 700 Emergency Electrical Distribution System: The emergency electrical distribution system will consist of (1) 150KW, 480/277V engine driven natural gas fueled generator. The emergency electrical distribution system will be provided with an automatic transfer switch in order to automatically switch loads between the normal EWU campus power and generator backed power. The emergency electrical distribution system will supply power to all life safety systems within the building such as egress lighting, exit lighting and the fire alarm system.

NEC Article 702 Optional Standby Electrical Distribution System: The standby electrical distribution system will consist of (1) existing 125KW, 480/277V engine driven propane fueled generator, which will be relocated from the existing building service yard. The standby electrical distribution system will be provided with an automatic transfer switch in order to automatically switch loads between the normal EWU campus power and generator backed power. The primary intent of the standby power system is to provide generator backed power to non-life safety loads within the new building, such as fume hoods, department computer servers, telecommunications rooms (and associated cooling) and important lab equipment which is deemed critical by EWU staff.

Building Distribution: The building electrical distribution will originate from a main electrical room on the ground floor and feed smaller stacked electrical rooms located on each floor above. The building electrical distribution will be designed to provide separation of lighting, mechanical and computer equipment loads. Lab and special equipment power distribution will be separate from general building power panels. Because the building is being provided with separate 480/277 and 208/120V electrical services, it will not be necessary to distribute dry type step down transformers throughout the building. Multi- stage surge suppression shall be provided by installing transient voltage surge suppressors at the main switchboard, distribution switchboards and appropriate panelboard locations.

Electric Metering: Owner metering shall be provided for the building main electrical service equipment. Additional sub meters shall be provided for lighting, mechanical, PV system, EV charging and plug loads to allow separate metering for each end use type.

Switchboards: Switchboards shall be free-standing dead-front style. Main devices shall be equipped with ground fault protection. Distribution devices shall be factory-installed, group-mounted circuit breakers. Each main switchboard will have owner metering per EWU campus standards and integral TVSS protection. Switchboard shall be mounted on a 2” concrete housekeeping curb. All bus bars shall be copper.

Panelboards: Circuit breaker panelboards shall be provided throughout the building as required to adequately serve the associated building loads. Lab spaces will typically receive dedicated

power panels located within each lab room. Panelboards shall be dead-front circuit breaker type with proper interrupting capacity. All panelboards shall be provided with 42 available circuits and door in door construction. All bus bars shall be copper. Where appropriate, panelboards will be provided with integrally mounted TVSS units.

Mechanical Equipment: Refer to mechanical narrative for proposed mechanical systems and possible equipment. Motor loads ½ HP and larger will be 480V three phase. Motor starters and disconnects will typically be located in close proximity to each associated piece of mechanical equipment. Variable frequency drives will be provided by the mechanical contractor and installed by electrical contractor for various pieces of mechanical equipment.

Shop/Lab Equipment: Refer to the lab narrative for proposed electrical systems to be provided for each unique space. The electrical systems will be designed to provide ultimate flexibility to accommodate the ever-changing program needs for engineering studies.

Disconnect Switches: Safety switches shall be heavy duty type with interlocking door and spring-loaded contacts. Safety switches used as motor disconnects shall be fused. Outdoor safety switches shall be NEMA 3R.

Engine/Generator: Emergency and standby power generation shall be provided by means of an engine driven or natural gas fueled generator set. Each generator set shall be sized to supply the emergency and standby loads served. Emergency power will not be provided for elevator operation. Generator sets shall include a weatherproof sound attenuating enclosure for outdoor installation. Operation of the generators will be monitored on a multi function system designed to report most normal failures such as low cooling fluid temperature, low starting batteries, overcrank, overload, high water temperature, etc. The generators shall be mounted on a 6” curb to allow for maintenance access to oil drain low point.

Automatic Transfer Switch: The automatic transfer switches shall be 4-pole, switched neutral, open transition type.

Medium Voltage Pad Mount Transformers: Transformers shall contain a dead front loop feed primary compartment. Provide transformers with integral secondary disconnect switch located within the transformer secondary compartment. Provide external oil sampling valve system extended to lockable box on exterior of each transformer.

Medium Voltage Cabling: 15KV medium voltage cables shall be shielded, copper MV-90 single conductors. 15KV cables shall be sized in accordance with EWU campus standards and the National Electric Code and shall be installed with a 600V insulated equipment grounding conductor. 15KV cables shall be installed in continuous runs without splices.

Medium Voltage Elbows: 15KV medium voltage cables shall be terminated at transformers by 200 amp rated load-break elbows manufactured by Cooper.

Grounding: Grounding materials shall be copper, except ground rods shall be copper-clad steel. Grounding electrode shall be provided per code requirements. Equipment grounding conductors shall be run with all feeders and branch circuits. Separate grounding conductors shall be provided for isolated ground branch circuits. Equipment ground bars shall be provided within all electrical rooms and telecommunications rooms.

On-site Renewable Energy: A complete system of photovoltaic arrays shall be provided for on-site renewable energy generation in compliance with the Washington State Energy Code (WSEC). The

minimum system output shall be .5 watts per square foot of new building area. Potential location for solar arrays include the building roof.

D5020 Lighting and Branch Wiring

General Interior Lighting: Lighting throughout the interior building spaces will respond to the primary use of each space while maintaining a level of flexibility to react to future use of each space. Uniform ambient lighting will establish a basic minimum lighting level throughout each individual space with task, display and accent lighting used to establish contrast and interest. Specific attention will be given to the lighting for areas with computer workstations in order to minimize glare. Lighting within the building will be LED. Lighting system design foot candle levels will be in accordance with IES standards and EWU standards. In general, areas within the building will be illuminated to the following light levels:

Building Area	Foot-Candles
General Classrooms	30-50
Labs	60-75
Offices	30-50
Conference Rooms	30-50
Restrooms	10-15
Corridors	10-15
MEP Utility	10-20
Storage Rooms	10-20

Egress & Exit Lighting: Exit lighting will be LED type. Emergency egress lighting will be provided throughout the path of egress and will be supplied with power from the emergency generator system in the event of a failure on the normal power system.

General Lighting Controls: Within normally occupied spaces, multi-level switching or dimming will be provided in conjunction with occupancy sensors and will utilize two or more manual wall switches. Manually dimmable lighting controls shall be utilized within appropriate areas, such as conference rooms and labs. Automatic dimming controls shall be considered for the purpose of daylight harvesting within areas where adequate natural daylight is present within the building. A programmable low voltage lighting control system shall be provided for automatic control of lighting in corridors / common areas and exterior site lighting. The low voltage lighting control system shall also be interfaced to the campus energy management system (EMS) to all EMS control of the exterior lighting.

Programmable Low Voltage Lighting Control System: Provide a distributed low voltage lighting control system with building management system interface. The low voltage lighting control system shall be manufactured by nLight (acuity brands) in accordance with EWU campus standards.

Occupancy Sensors: Occupancy sensors will be utilized to automatically shut off the lighting within offices, conference rooms, restrooms, labs and classrooms when these spaces are unoccupied. Occupancy sensors shall be dual technology type and capable of vacancy mode. Either ceiling mounted or wall mounted occupancy sensors will be utilized depending on the physical size and specific geometry of the room being controlled.

Sustainable Design Considerations: All sustainable design measures considered will be evaluated completely with regards to their associated sustainable and economic aspects. Many opportunities are currently available to construct a building that is a model of sustainable design.

The following is a brief list of items related to the building lighting and lighting control systems which are being considered for this project:

Energy efficient LED lighting will be utilized as the primary light source within the building in order to reduce the energy consumption associated with the lighting system.

Occupancy sensors will be utilized to automatically shut off the lighting withing interior spaces when they are unoccupied. This will allow the interior lighting within these areas to be automatically turned off during unoccupied times, thereby increasing the available energy savings associated with the interior lighting system.

Within normally occupied spaces, multi-level switching or manual dimming will be provided in conjunction with occupancy sensors and will utilize two or more manual wall switches. The utilization of manual controls within these spaces will allow the user to reduce the light levels within their spaces if desired, further increasing the available energy savings associated with the interior lighting system.

Automatic dimming lighting controls will be considered for the purpose of daylight harvesting within areas where adequate natural daylight is present within the building. The utilization of automatic dimming and daylight harvesting will allow EWU to take advantage of the natural available daylight to the fullest extent possible. This will result in additional available energy savings associated with the interior lighting system.

A programmable low voltage lighting control system shall be used to control both the exterior and interior lighting systems. This will allow both the interior and exterior lighting systems to be automatically turned on/off at pre-programmed times, thereby increasing the available energy savings associated with the interior and exterior lighting systems.

General Exterior Lighting: Exterior lighting will be LED type selected to match the architectural building exterior and EWU campus standards. Exterior entry lighting which illuminates the path of egress will be supplied with power from the emergency generator system in the event of a failure on the normal power system. Exterior lighting will utilize full cut off light fixtures in order to avoid light trespass and meet associated dark sky lighting requirements. In general, exterior areas will be illuminated to the following light levels:

Exterior Area	Foot-Candles
Exterior Entry	5
Exterior Walkways	2
Parking Areas	1

Exterior Lighting Controls: A programmable low voltage lighting control system shall be used to control the exterior lighting. This will allow the exterior lighting to be automatically turned on and off at pre-programmed times, automatically controlled via outdoor photocell and automatically controlled by the campus EMS system.

General Branch Wiring: Provide complete raceway and wiring systems in conformance with code requirements and campus standards.

Conduit: Galvanized steel metal conduit shall be used inside building. Non-metallic conduit shall be used underground, except at transitions. Metal conduit shall be rigid metal conduit, intermediate metal conduit, electrical metallic tubing, or flexible metal conduit. Non-metallic conduit shall be schedule 40 PVC. Conduit shall be concealed wherever possible. Minimum

conduit size is 3/4" unless otherwise noted. Conduits installed within utility tunnels shall be rigid metal conduit.

Building Wire: All wiring shall be copper, minimum size #12 AWG. All feeder conductors shall be installed in conduit. Aluminum conductors are not allowed on the EWU campus, unless approved by the project manager. All 480/277V and 208/120V building wire shall be color coded in accordance with EWU campus standards.

Wiring Devices: Switches and receptacles outlets shall be specification grade. GFI type outlets shall be provided where outlets are mounted within 6 feet of a sink. Trim plates shall be color coordinated with architect.

Electric Vehicle Charging: Where new parking is provided at the building, electric vehicle charging stations and infrastructure shall be provided in compliance with WAC 51-50-0429. The electric vehicle charging stations and infrastructure shall meet Level 2 charging capacity requirements with each charger rated for 40 amps at 208V, 1PH. Charger locations will be coordinated to not conflict with campus snow removal operations.

Renovation: (refer to architectural narrative for areas of work)

- Ground Floor – Heavy electrical work is anticipated at the ground floor of the existing building to accommodate the new programs. This would include modified electrical distribution, branch circuits, lighting, telecom, fire alarm and security.
- First Floor – Moderate to light electrical work is anticipated on the first floor of the existing building to accommodate the new program. This would include modified branch circuits, lighting, telecom, fire alarm and security.
- Second Floor – Moderate to light electrical work is anticipated on the first floor of the existing building to accommodate the new program. This would include modified branch circuits, lighting, telecom, fire alarm and security.
- Third Floor – Moderate to light electrical work is anticipated on the first floor of the existing building to accommodate the new program. This would include modified branch circuits, lighting, telecom, fire alarm and security.

<u>D5030 Communication and Security</u>

Telecommunications Building Distribution: A complete telecommunications distribution pathway and cabling system will be provided by the contractor in accordance with the EWU construction standards. Pathways, cabling, outlets and passive equipment will be provided by the contractor. Active equipment will be provided by EWU. Telecommunications rooms will be located throughout the facility in accordance with EIA/TIA 568 and 569. The main telecom room will be located on the ground floor of the building, in a centralized location. Secondary communication rooms are to be located on each floor and stacked above the main telecommunication room. Horizontal station cable pathways will be provided and routed to the telecommunications rooms located on each floor. Each telecommunications room shall be provided with a dedicated 120/208V standby power panelboard and an equipment ground bar. Selected areas will be equipped with cabling provisions for owner furnished wireless local area networking. Telecommunications riser cabling and pathways will be provided from the entrance location to the telecommunications room on each floor. Cable trays will be installed down corridors with conduits provided at hard (inaccessible) ceilings and were wall and floor penetrations are required.

Telecommunication Outlet Distribution: Telecommunications devices will typically be located at instructor's podiums, ceiling mounted projector locations, computer workstations and required

student locations. Offices shall typically be provided with two telecommunication outlet locations per room. Typically, each outlet will be served with two Category 6 cables.

WiFi Systems: WiFi system pathways, cabling and outlets will be provided by the contractor. Required locations for WiFi network routers will be closely coordinated with EWU. All WiFi network routers will be provided and installed by EWU.

Closed Circuit Television (CCTV) System: New CCTV System pathways and network drops will be provided by the contractor. Required locations for CCTV devices will be closely coordinated with EWU. All CCTV cameras, power supplies, cabling and active electronic equipment will be provided by EWU and installed by the contractor.

Access Control System: A complete electronic access control system will be provided for the new building. Required locations for miscellaneous access control devices will be closely coordinated with EWU. Typical spaces which will include access controls are classrooms, labs, office suites and utility rooms.

D5090 Other Electrical Systems

Audio / Video Systems: Audio visual systems will be provided and installed by the contractor. Spaces requiring audio visual system shall include, but not be limited to assembly spaces, classrooms and meeting rooms. The basis of design for assembly spaces and classrooms shall be a hybrid learning classroom which will include projectors, projector screens, overhead ceiling speakers, wireless microphone systems, assistive listening devices, room control, lecture capture camera and device inputs. Large meeting rooms will require a projector and screen or wall mounted display, reinforced sound and control systems. Small and medium size meeting rooms will require wall mounted display and media control systems. Computer labs will be treated as basic classrooms with either projectors and screen or wall mounted displays, overhead ceiling speakers, wireless microphone systems, assistive listening devices, room control, and wireless device connectivity.

Fire Alarm: A complete battery backed addressable fire alarm system with manual pull stations, automatic detection and ADA compliant horn/strobes will be provided throughout the facility. Smoke detector and heat detectors will be installed as required by the governing codes, and in accordance with EWU campus standards. The building fire sprinkler system will be monitored by the fire alarm system for system flow and shutoff valve tampering. Central reporting capabilities will be provided with the fire alarm system and shall be compatible with the existing campus fire alarm monitoring system. The new fire alarm system shall be manufactured by Edwards System Technology (EST) in accordance with EWU campus standards.

Clock System: Clock System pathways, cabling and outlets will be provided by the contractor. Required locations for clocks will be closely coordinated with EWU. All clocks and clock equipment will be provided and installed by EWU.

Room Scheduling: Room Scheduling System pathways, cabling, outlets and passive equipment will be provided by the contractor. Required locations for room scheduling will be closely coordinated with EWU. All room scheduling displays, and active equipment will be provided/installed by EWU.

Distributed Antenna System (DAS): A a complete distributed antenna system for emergency responder radio use is not planned for the new building. The contractor shall provide building infrastructure for a future DAS system. Upon completion of the building structure, walls and ceilings the contractor shall provide testing for responder radio coverage.

E Equipment and Furnishings

E10 Equipment

E1010 Laboratory Fume Hoods and Other Air Containment Units

Bench-Mounted Chemical Fume Hoods: Restricted bypass type / variable air volume (VAV) extraction hoods at 100 fpm (0.51 m/s) face velocity with a vertical rising sash will be provided. Exhaust air volume will be based on 18" open sash position. Fume hood work surface will be dished epoxy resin.

Fume Extractor Arms (Snorkels): Snorkels will be 3 inch (75 mm) diameter, hinged, self-supporting air extractor arm assembly with 14" diameter clear acrylic hood.

Low Slot Exhaust: These will be custom fabricated stainless steel.

Biological Safety Cabinets: Cabinets will be Class II, Type A2, and designed to operate with an intake air velocity of 100 fpm (0.5 m/s), re-circulating the air through the supply HEPA filter into the work area.

Laminar Flow Hoods: Laminar Flow Hoods shall be equipped with supply HEPA filter and reusable prefilter to maintain Class 100 standard at work area.

Canopy Hood: Canopy Hood shall be an exhausted stainless steel canopy enclosure with all hangers and miscellaneous hardware, including damp location light fixture.

E1020 Laboratory Service Fittings and Fixtures

Service Fittings: Service fittings shall be chromium plated with an acid- and solvent-resistant, clear epoxy coat finish specifically designed for laboratory use. All service fittings shall be of the tapered body design with four arm handles, except for ADA accessible fittings which shall have lever handles as described below.

Fittings and fixtures: These are designated to be accessible to persons with disabilities (ADA) with operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N), maximum.

Safety Stations: Safety station shall be barrier-free with emergency shower actuation valve in stainless steel cabinet for recess mounting and wall-mounted eyewash with stainless steel skirt.

Hand held eye wash: These shall be dual-purpose eye wash/drench hose, deck mounted.

Cup Sinks: Cup sinks will be epoxy and set flush with work surface, except for any cup sinks at fume hoods which will have ¼" raised rim.
Laboratory Sinks: Laboratory sinks will be epoxy for drop-in installation in work surfaces.
Stainless steel sinks: Stainless steel sinks will be Integral one piece construction with stainless steel work surface. 18 gauge (1.3 mm thick) steel unless otherwise noted.

Scrub-up sink: These shall be wall mounted 14 gauge (2.0 mm thick) Type 304 stainless steel sink with knee action control and HWCW mixing valve.

E1030 Laboratory Sterilizers And Washers

Laboratory Glassware Washers (as required): These shall be tall, floor mounted, front loading single door units programmable for multiple wash cycle and drying cycle duration, with purified

water rinse capability. Unit shall have mounting hardware and finish pieces for mounting through architectural wall.

Laboratory Medium Steam Sterilizers: These shall be prevacuum/gravity models with interior chamber dimensions of 20: x 36" x 48". Steam source should be provided to operate all sterilizers and Cage/Bottle Washer. Freestanding single door unit shall be cabinet enclosed. Recessed single door unit shall have mounting hardware and finish pieces for mounting though architectural wall. Pass-through double door unit shall have mounting hardware and finish pieces for mounting one end through an architectural wall.

Instruments, Controls Major Electrical Components: These shall be located in surface mount control console. Provide LCD color touchscreen microprocessor based temperature and humidity (where applicable) controller with real-time and archive trending. Each room shall be provided with reset type personnel emergency alarm with electrically powered audible and visual alarm system.

Environmental conditioning system consisting of blower(s), evaporator coil(s), heaters, humidifier (as required), refrigeration piping system and drain pans, shall be housed in modular enclosure(s) suspended from the room ceiling and shall be factory prewired to the control cabinet.

Refrigerant: Utilize non-ozone depleting refrigerants R-134a, R-404A, or approved equal; CFC type refrigerant shall not be acceptable.

Operation: Each system shall be designed and furnished in such a manner as to allow the motor compressor to operate continuously with a modulating bypass system to maintain specified temperature ranges.

Defrost: System shall incorporate an automatic defrost system.

Refrigerant Piping: All refrigeration piping required shall be furnished and installed by the controlled temperature room contractor. Provide ACR type, hard drawn, cleaned and capped Type L copper tubing with silver brazed joints.

Ventilation: provide make-up air from the laboratory space at the rate of 0.25 CFM per square foot (4.57 m^3/h per square meter) unless otherwise indicated on the drawings. No ventilation air provisions shall be made for freezer rooms operating at or below 0°C.

E20 Furnishings

E2010 Laboratory Casework and Other Furnishings

Wood Casework: Wood casework shall comply with all requirements of AWI Section 400 Custom Grade architectural cabinets. Lumber shall be plain sawn oak; veneer shall be plain sliced oak. Wood casework shall be flush overlay design.

Metal Casework: Metal casework shall be of modern design and shall be constructed in accordance with the recommended practices of the Scientific Equipment and Furniture Association. All units shall be of flush overlay construction. Door and drawer heads shall be of welded, double walled steel construction, 3/4" (18 mm) thick, filled with sound deadening material.

Corrosive Storage Cabinets:Cabinets shall be vented with corrosion resistant liner designed and labeled specifically for the storage of acids and other corrosive substances, to meet code requirements

Flammable Liquid/Solvent Storage Cabinets:Cabinets shall be metal designed and labeled specifically for the storage of flammable liquids and other volatile substances, to meet code requirements.

Ventilated Storage Cabinets shall have perforated metal adjustable shelving, vent louvers inset on the lower portion of the door, and a 2" diameter PVC connection to the building exhaust system.

Laboratory work surfaces: These shall be 1" thick chemically resistant modified epoxy resin.

Stainless steel work surfaces: These shall be 16 gauge (1.6 mm thick), type 304, #4 finish with heavy mastic coating underside and perimeter timber fixing frame.

Adjustable reagent shelves: These shall be ¾ inch thick, 7-ply shop sanded exterior grade veneer plywood shelving with K+ face veneers with chemical resistant plastic laminate on all surfaces on book-end brackets mounted on double-slotted 2 inch x 2 inch fully welded square steel tube support frame. All shelves shall have 1-1/2" high safety edging.

Adjustable wall shelves: These shall be ¾ inch thick, 7-ply shop sanded exterior grade veneer plywood shelving with K+ face veneers with chemical resistant plastic laminate on all surfaces on book-end brackets mounted on double-slotted standards. All shelves shall have 1-1/2" high safety edging.

Heavy-duty shelving: These shall be 1 inch thick, 7-ply hardwood plywood with chemical resistant plastic laminate on all surfaces and edges on heavy-duty shelf standards and brackets. All shelves shall have 1-1/2" high safety edging.

Stainless steel shelving: These shall be Super Erecta stainless steel shelf system, post supported, floor mounted or wall mounted, and floor mounted high density configuration, and shall include all accessories required for function.

Open industrial metal shelf units: These shall be premium grade 20 gauge steel shelf units comprised of 5 shelves adjustable on 1" increments, 85" high 14 gauge angle post supports, and side and rear cross-bracing.

Cylinder Restraints: These shall be fabricated with Unistrut, Powerstrut or equal.

Overhead service carriers: These shall be fabricated with unistrut channels supported from structure above at 48" on center maximum and include a 14 gauge metal channel at bottom for mounting of piped services and electrical raceways.

Suspended metal channel grid: Purpose designed to support 200 lb. (0.89 kN) point load at any position and 50 lb./ft. (0.73 kN/m) uniformly distributed load. All brackets, channels, etc. (galvanized metal).

Pipe drop enclosures: These shall be an 18 gauge galvanized steel sheet enclosure with removable cover panels and epoxy paint finish.

Drying racks: These shall have a stainless steel body with white polypropylene pegs and integral drain trough with welded stainless steel trough ends.

E2015 Non-Laboratory Casework and Other Specialties

Casework: Typical casework provided in the student lounge and tech offices will consist of plastic laminate millwork cabinets, countertops and shelving. Fixed plastic laminate tables will be provided at the Large and Medium Classrooms.

Visual Display Boards: Tack boards and glass marker boards will be provided in classrooms and collaboration spaces.

Toilet Compartments: Provide solid phenolic core partitions that are floor-to-ceiling mount.

Window Blinds: Roller blind window coverings will be provided throughout the building, with blackout shades at labs and classrooms having video projection.

Projections Screens: Provide roll down projection screens.

Signage: Interior way-finding and room identification signage, and exterior building signage will be provided.

Bicycle Racks: Stainless steel bicycle racks will be provided.

Fire Extinguisher Cabinets: Provide recessed stainless steel fire extinguisher cabinets.

Toilet Accessories: Provide stainless steel toilet accessories.

F Other building construction
No requirements.

G Site work

G10 Site Preparation
Site Preparation and Excavation
Existing Cadet Hall will be demolished for the construction of the new Engineering Building addition. Cadet Hall has an approximately 5,000-sf footprint and is two floors. Demolition will include removal of all building and foundations, capping of utility services and disposal of all materials to appropriate and legal locations.

Site preparation for the Engineering Building Addition will include removal of the existing paving and miscellaneous site features in the work area.

The topsoil and vegetative material will be removed, screened and saved for re-use in revised landscaped areas. The subgrade will be prepared prior to placing structural fill or building foundations, per future geotechnical recommendations. Structural fill will be approved imported material. Native silty or clayey material is not be acceptable for use as structural fill and will be hauled of site.

Temporary Sediment and Erosion Control
During construction, all temporary erosion and sedimentation control systems will be designed and constructed in accordance with the Eastern Washington Regional Stormwater Manual Best Management Practices (BMP's), to protect of site properties as well as minimize the quantity of sediment-laden water from entering the City of Cheney's public storm system. The site will be graded to drain to sediment control ponds or temporary tanks on the lower site, near the Art Walk, off 7th Street.

Temporary catch basin protection should be installed and maintained on existing and new catch basins to filter sediment-laden water entering the existing storm conveyance system during construction.

Temporary Construction Features

The project will require temporary construction access from the upper west parking lot, and likely also from the lower lot area to the southeast. This access and other contractor laydown and trailer space will need to be coordinated with ongoing campus activities and circulation needs. Quarry spall work pads on disturbed soils, and silt fencing placed around the downhill portion of the site will further control soils and limit erosion. Soil stockpiles will need to be erosion protected, with plastic sheeting or other approved measures to prevent sediment migration from the site.

Construction Debris: The contractor will implement BMP's to prevent demolition and construction debris, waste, material, fuel, oil, lubricants, and other fluids from entering the public right of way and the existing storm conveyance system. All waste materials shall be disposed of in appropriate, legal locations. Recycling or reuse of demolished or excess material when appropriate is encouraged.

Foundation Subdrainage: A footing and slab drainage system will be incorporated, and discharge into a stormwater detention system described under G30 or directly into the campus stormwater system in under then Engineering lawn. This system discharges to the City system in 7th Street. . Slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drain pipes in the free-draining layer will gravity drain to the existing campus storm system.

G20 Site Improvements

Site Development: The building will be accessed from the parking lot on the west side off Washington Street, and from the lower site off the southeast at the Engineering Lawn. Delivery access can be made from either side.

Landscaping: A combination of xeriscape planting, grass lawns, biofiltration swales (described under G30), and trees will be provided.

Irrigation: An irrigation system will be provided, and will be supplemented by water collected in the stormwater detention system described under G30.

Site Paving

Site paving will consist of asphalt and concrete per University standards. Paving will be for new/ replaced walks and drives around the new building and to patch utility trenches., in-kind matching existing surfaces.

Asphalt for restored parking areas and new loading/utility yard off west parking , assume 6-in of ½-in HMA over 6-in crushed base.

Concrete walks and plazas around the buildings, 6-in w/ reinforcing. Where needed for fire lane, 8-in thick pavement.

At University direction, some areas of new/replaced paving will have snow melt tubing and connection to campus or building boilers for heat.

Fire Truck Access

Fire truck access can be provided off the parking lot on the west side, at Washington Street and from 7th Street, via the Art Walk. There are three existing fire hydrants within a 300-foot radius of the proposed building. One off the Northwest corner of Cadet Hall appears to be in the footprint of the new addition, and should be moved (replaced) west into the parking lot.

Water Supply

Water mains: Existing Campus water mains are to the west, under the parking lot, and south between this site and the Art Buildings. Part of the campus main under the parking lot will need to be relocated further west to avoid the new addition west wing.

A single combined fire and domestic water service will be provided to the building from the University system water line under the west parking lot, and between the addition site and the Art Building. Alternately, the addition may be served from the existing 6-in service that enters the existing CEB from the west parking lot. Analysis from the plumbing and fire design will be required to confirm adequate flow from this 6-in connection.

Water Meter: An in-building water meter will be provided to measure the domestic water use in the new building for the purpose of; reporting trends in building systems consumption required by WA State law, reporting of meeting LEED criteria, and real-time display of building systems performance data for use by engineering courses at EWU.

Sanitary Sewer

All floors of the addition should be able to discharge waste by gravity to the campus sanitary sewer system located off the southeast of the site, under the engineering lawn. A new 6-in connection to this system is anticipated, approximately 150-ft of 6-in sewer pipe needed to make a new connection.

Stormwater Treatment and Disposal

The University's stormwater system drains to the City of Cheney's street storm system. Development of this addition will conform to the City's current surface water development manual which specifies stormwater design standards. The City has adopted the Spokane Regional Stormwater Manual, April 2008, which also governs stormwater design for Spokane County, the City of Spokane, and the City of Spokane Valley. Storm water collected off new roof areas will not need to be treated for water quality but can be directed to the new storm water flow control system (detention tank). If new and replaced vehicular use pavements exceed 5,000-sf within this project, then water quality treatment facilities will need to be provided for water collected off these surfaces. For small areas this is usually best done before detention. Cartridge filter systems or grass swales may be possible based on available space and locations.

Stormwater Detention System: The soils on the EWU campus are typically fine-grained and usually not suitable for infiltration as the sole source of stormwater disposal. Stormwater runoff, from the roof and from adjacent new and replaced pavements, will be routed to a detention system, approximately 2,500-CF in an underground tank or vault beneath the south, upper side of the site. This detention system will discharge to the storm system at the lower site level, below the Art building and near Media Lane. Approximately 60-ft of 8-in pipe will connect it to existing systems.

Foundation Subdrainage: A footing and slab drainage system will be incorporated, and discharge directly into the campus stormwater system. Below slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drain pipes in the free-draining layer will gravity drain to the existing campus storm system.

The existing campus storm system runs southeast in Media Lane and connects to City systems at

7th Street.

Connection to Campus Utility Tunnel

West of the site, under the asphalt parking lot, a branch of the campus utility tunnel provides access to many campus utilities, including power, communications, steam, and chilled water. A new low temperature heating water system will be installed near this building as part of the geothermal heating and cooling plant, which will be a separate project, near this building. Below grade, the new building will not directly affect the tunnel, the basement level will stop short of the tunnel walls. A short new spur off the tunnel will run into basement mechanical spaces allowing the new building to access campus utilities in the tunnel. Above grade the new addition will span over the tunnel, without bearing on it.

Gas Distribution

Natural gas service is provided to the existing CEB by Avista Utilities, from a service under the west parking lot. It may be possible for this service to provide for the new addition, or a new separate service to the addition provided. Gas loads from the mechanical design will determine the required path for this.

G4010 Electrical Distribution

The EWU Campus currently receives electrical utility power via two separate 13.2KV electrical service feeders from the City of Cheney. These two 13.2KV electrical service feeders are terminated within the EWU Rozell Substation at Campus Switchgear Bus #1 and Campus Switchgear Bus #2. Four separate 13.2KV campus feeders are routed from the Campus Switchgear to a system of 13.2KV switches located throughout the EWU campus in order to provide increased redundancy and flexibility to the campus electrical distribution system.

G4020 Site Lighting

Site lighting will be selected in conformance with EWU campus standards and will utilize full cut off LED light fixtures in order to avoid light trespass and meet associated dark sky lighting requirements. Site lighting which illuminates the path of egress will be supplied with power from the emergency generator system in the event of a failure on the normal power system. Site lighting will be controlled via a programmable low voltage lighting control system which will allow the site lighting to be automatically turned on and off at pre-programmed times.

G4090 Other Site Electrical Utilities

G4030 Site Communication/Data

Data/Communication service is provided to the existing building from the EWU owned data/com distribution system. Fiber optic cabling is typically routed throughout the EWU Campus via a system of cable tray that is located within the existing campus utility tunnel system. New telecommunications building service pathways will be provided and installed by the contractor. New building service pathways will be routed from the existing campus utility tunnel system into the main telecom room or be extended from the existing ground floor MDF in the existing building. Telecommunications building service cabling will be provided and installed by the contractor.

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SECTION 2

APPENDICES

2.7 LUCY COVINGTON LEADERSHIP HOUSE
PREDESIGN

EASTERN WASHINGTON UNIVERSITY

LUCY COVINGTON LEADERSHIP HOUSE PREDESIGN
EASTERN WASHINGTON UNIVERSITY
CHENEY, WASHINGTON

25 JUNE 2024

OFM PROJECT NUMBER: 40000071

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EASTERN WASHINGTON UNIVERSITY

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STUDENT ENGAGEMENT-NATIVE AMERICAN STUDENT ASSOCIATION (NASA)
On November 17, 2022, and February 15, 2024, many members of NASA, lead by former President Strong Heart, and current President War Bear, attended predesign engagement sessions. During these sessions students provided input related to visioning, site selection and programming as part of the predesign effort.

We wish to thank all NASA members for their time and feedback to the Predesign Team.

Section 01

EXECUTIVE SUMMARY

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SECTION 01

EXECUTIVE SUMMARY

Lucy Covington, a long-time tribal rights activist and Colville Tribal Council member, helped change the course of American Indian history through her courageous and selfless style of leadership. She worked with members of her own tribe and other tribes across the country to help preserve tribal sovereignty and self-determination. She also worked to protect tribal rights and resources, develop tribal services, govern the reservation for the benefit of tribe members, and promote inter-tribal cooperation.

Lucy exemplified American Indian self-determination in action and her efforts engendered a shift of U.S. policy from termination to independence and autonomy. She is considered "the most significant advocate for American Indians in the last half of the 20th century" (Mark Trahant, The Last Great Battle of the Indian Wars). Covington died in 1982, at age 71.

In 2015, Eastern Washington University posthumously presented an honorary doctorate to Lucy Covington and announced the creation of a student center in her name.

The proposed Lucy Covington Leadership House facility encompasses approximately 10,000 net assignable square feet (NASF) designated for community gathering, student support, and exhibition to support American Indian students. This facility will further the goals of Eastern Washington University's Lucy Covington Initiative and their commitment to regional tribes by honoring Lucy Covington's legacy and providing dedicated support for American Indian students.

PROBLEM STATEMENT

American Indian students are vastly underrepresented in higher education, making up less than one percent of college students. While many factors contribute to low college attendance rates for American Indian students, most of those barriers can be traced back to a singular source: invisibility. Eastern Washington University (EWU) hopes to create a space where American Indian and non-American Indians can work together to combat invisibility of the Indigenous peoples of this region.

Declining enrollment of American Indian students is also a critical problem. American Indian student enrollment, at EWU and across the state of Washington, has declined by approximately 40 to 50 percent over the last 15 years. In contrast, other race/ethnicity groups have increased by 60 percent or more in the same time frame. The Lucy Covington Leadership House is part of the broader Lucy Covington Initiative at EWU.

The Initiative seeks to support future leaders by honoring her legacy, educate the next generation of American Indian leaders, create a confluence of cultures and causes through community scholars and tribal leaders, and develop an archival project documenting the efforts of Lucy Covington and those who fought with her to protect sovereignty and self-determination.

The Lucy Covington Leadership House will also further the goals of Eastern Washington University's commitment to the Memoranda of Understanding (MOU) with three regional tribes, the purpose of which is to sustain and advance relationships with EWU and construct a longhouse-style facility on campus.

Lucy Covington Leadership House will address these problems identified in its project goals:

> Create visibility and a sense of belonging for American Indian students with a dedicated facility that supports self-exploration and self-understanding of their values, identities, cultural heritage, and career paths.

> Improve access and retention of American Indian students by serving as a center to support their growth and development at EWU.

> Bring together national speakers, scholars, academics, traditional practitioners, and Native leaders to share their experiences, wisdom, research, and indigenous knowledge.

> Develop programming that promotes understanding across cultures and political boundaries to address challenges and opportunities.

> Provide exhibit space for digital historic documents pertaining to the life and work of Lucy Covington as a part of the continued education related to the importance of protecting tribal sovereignty and self-determination.

> Open exhibit space to local tribes, American Indian students, and artists to display their work and culture.

ALTERNATIVES CONSIDERED

Through the predesign process, the design team considered a range of alternatives to meet the needs identified in Section 02. Alternatives that were evaluated include:

> Preferred Alternative: Lucy Covington Leadership House (~15,000 GSF)

> Alternative 1: Full Buildout, Preferred Alternative + Future Expansion (~33,000 GSF)

> Alternative 2: No Action

Alternatives were evaluated in terms of advantages, disadvantages, cost, and schedule. Each alternative is summarized next.

PREFERRED ALTERNATIVE: LUCY COVINGTON LEADERSHIP HOUSE (15,000 GSF)

The conceptual program for the Preferred Alternative allocates approximately 10,000 net assignable square feet (NASF) for a total of approximately 15,000 gross square feet (GSF), into a single-story facility that supports the project goals described in Section 02, Problem Statement. The proposed Lucy Covington Leadership House brings together cultural/community gathering and event space, student support and collaboration areas, and an exhibit gallery and performance space.

The proposed building concept provides a speaking hall that accommodates up to 300 people for community and cultural events, a learning commons for studying and student collaboration, and an exhibit space featuring the life and legacy of Lucy Covington and American Indian Art and Culture.

The Preferred Alternative achieves many of the project's goals and addresses the identified problem.

ALTERNATIVE 1: PREFERRED ALTERNATIVE + POSSIBLE FUTURE EXPANSION (28,000 GSF)

The full buildout alternative expands the program by approximately 8,000 NASF for a total of approximately 13,000 additional GSF. The full buildout proposes building the 15,000 GSF Preferred Alternative along with a 13,000 GSF expansion for a total buildout of 28,000 GSF.

In addition to providing cultural/community gathering and event spaces, student collaboration and support spaces, and exhibit gallery and performance spaces, the full buildout will have instructional program spaces that expand the American Indian Studies program and introduce new programs such as a Tribal Government program and dedicated Salish Language teaching space. There will be additional classrooms and faculty offices associated with this expansion.

Alternative 1 achieves and expands upon the project's goals and addresses the problems identified. Although Alternative 1 more fully achieves the project goals, it was not chosen due to the following challenges:

> Requires additional capital funding and therefore would result in a larger capital project funding request.

> Operational funding to expand academic programs as described above has not yet been procured.

ALTERNATIVE 2: NO ACTION

The No Action Alternative would perpetuate the substandard quality of experience and poor retention rates for American Indian students at EWU. American Indian students would continue to have limited representation on campus and limited space dedicated to their support. They would need to continue to use the one inadequate room available in the existing American Indian Education Center building, which houses the American Indian Studies program, for meetings, studying, and socializing.

Additionally, Alternative 2 - No Action, does not fulfill EWU's strategic mission in the following ways:

> It does not create a presence on campus for American Indian students and American Indian culture, even though there are at least four major Tribal nations in the vicinity of Eastern Washington University.

> It does not fulfill one of the primary purposes of the Memoranda of Understandings between EWU and three Tribal Nations: to construct a longhouse-style facility that enhances recruitment and success of American Indian students.

TABLE:
Numeric Program Summary

PREFERRED ALTERNATIVE

PROGRAM

The conceptual program for the Preferred Alternative allocates 15,000 GSF into a new one-story Lucy Covington Leadership House that supports the project goals. The building program focuses on three key areas that support the goals of the Lucy Covington Initiative: Community Gathering, Student Support, and Celebrating Lucy Covington's Life and Legacy.

The building has an efficiency of 65 percent and provides the following program areas:

- A 300-seat Speaking Hall and associated support areas.
- A dedicated American Indian Student Center that includes a Learning Commons (student lounge, small group rooms, and makerspace), community kitchen and dining, and flexible meeting areas.
- An exhibit hall that celebrates the life and legacy of Lucy Covington and tribal cultures.

PREFERRED ALTERNATIVE

PROGRAM AREA		NSF	% of NSF
COMMUNITY GATHERING AREAS			
Speaking Hall		5,100	*52.6%*
AMERICAN INDIAN STUDENT CENTER			
Learning Commons		1,800	*18.6%*
Dining Area		1,550	*16.0%*
Flexible Meeting Space		240	*2.5%*
EXHIBITION AREAS			
Lucy Covington Life & Legacy Gallery		1,000	*10.3%*
Total Assignable Square Feet (NASF)		***9,690***	
UNASSIGNABLE AREAS	*% of GSF*		
Building Support	*6.1%*	910	
Building Systems	*8.0%*	1,200	
Circulation / Walls	*21.3%*	3,200	
Subtotal - Unassignable Areas	*35.4%*	*5,310*	
Total Building Area		**15,000**	
Building Efficiency		**65%**	

DIAGRAM:
Preferred Alternative: Lucy Covington Leadership House

SITE

For the purposes of this Predesign study, the Reid site was selected by stakeholders for the Lucy Covington Leadership House. It is directly south of Martin and Williamson Hall at the southeastern edge of the EWU campus in Cheney, Washington and is approximately 1.4 acres in size.

It is important to note that its status as the final choice may be subject to change pending updates to EWU's Campus Master Plan. As EWU moves forward with updating its Master Plan, future projects will need to align with the revised vision and objectives outlined in that plan.

BUILDING CONFIGURATION

The Preferred Alternative concept for the Lucy Covington Leadership House is a 15,000-square-foot, one-story building. The main building entry is located off of the primary pedestrian thoroughfare on campus.

Through the vestibule, students will be welcomed into the Learning Commons, a circular lounge and student support area. This area is designed for group gatherings and collaborative activities, but also includes contemplative spots that provide areas for focused study and respite. It is surrounded by an exhibit area that will showcase Lucy Covington's life and tribal cultures.

The Learning Commons' double-height volume will integrate a skylight that will enhance natural light and provide a visual link between the sky, the occupants, and the earth, connecting building users to the natural environment.

From here, a longhouse-inspired volume can be accessed, which will be used for more formal gathering. This area contains the Speaker Hall at the south end, as well as centrally-located community kitchen and dining areas, a makerspace, and the main service core, including restrooms and building system areas.

The south and southwest edges of the site will use land-sculpting to create earthen berms. These will provide screening and casual places to sit during events, as the dining area and Speaking Hall will open onto these areas and create a more seamless indoor/outdoor experience.

TABLE:
Budget Request / Cost Summary (Top / Center)
Project Schedule (Bottom)

PROJECT BUDGET & SCHEDULE

PROJECT BUDGET

The state funding request for this project is approximately $21 million, with Design funding requested in the 2025-27 Biennium and construction funding requested in the 2027-29 Biennium.

PROJECT SCHEDULE

The anticipated project schedule for the Preferred Alternative is shown at right, and assumes design and construction funding are awarded in the 2027-29 Capital Budget.

Design is slated to start in November 2026, with construction beginning in November 2027 and reaching substantial completion by November 2028. Building occupancy is anticipated in February 2029.

Agency / Institution Project Request	
Design / Construction Request, 2025-2027 Biennium	$20,739,000
Total Project Request	**$20,739,000**
Pre-Design Report (Non-State Funds)	$300,000
Total Project Funds	**$21,039,000**

Probable Cost Estimate Summary: Preferred Alternative		
Construction Cost	$16,110,800	77.7%
Consultant Services	$2,765,000	13.3%
Equipment	$643,100	3.1%
Artwork	$103,200	0.5%
Project Administration	$1,117,200	5.4%
Other Costs	$0	0.0%
Total Project Cost	**$20,739,000**	100%

Project Schedule: Preferred Alternative			
PHASE	DURATION	START DATE	END DATE
Design / Construction Funding		July 2025	
Design	12 mos.	November 2026	November 2027
Construction	12 mos.	November 2027	November 2028
Move-In / FF&E	3 mos.	November 2028	February 2029
Occupancy		February 2029	

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Section 02

PROBLEM STATEMENT

A. Problem Identification

B. Statutory & Other Requirements

C. Connection to Agency Mission, Goals, & Objectives

D. What is Needed to Solve the Problem

E. Relevant Project History

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SECTION 02

PROBLEM STATEMENT

A. PROBLEM IDENTIFICATION

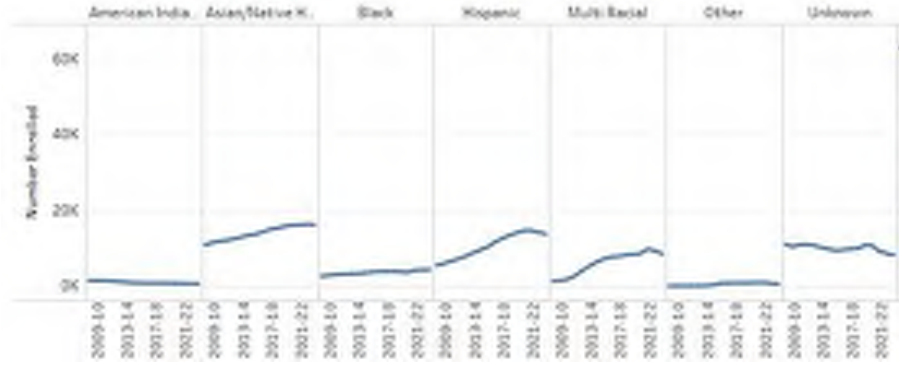
PROJECT OPPORTUNITY

American Indian students are vastly underrepresented in higher education, making up less than one percent of college students. While many factors contribute to low college attendance rates for American Indian students, most of those barriers can be traced back to a singular source: invisibility. Eastern Washington University (EWU) hopes to create a space where American Indian and non-American Indians can work together to combat the invisibility of the Indigenous peoples of this region.

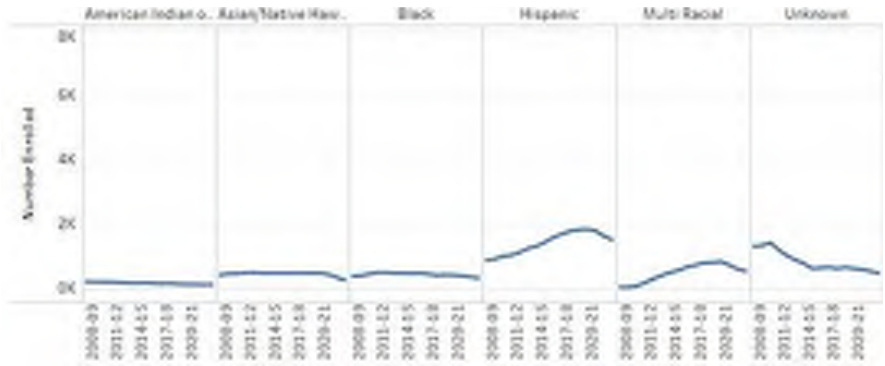
The issue of invisibility severely impacts how non-Native individuals and organizations interact, or more importantly, avoid interacting and partnering with American Indian and Alaskan Native populations. EWU hopes to create a space where they can work together to combat the invisibility of the Indigenous peoples of this region.

Declining enrollment of American Indian students is also a critical problem. American Indian student enrollment, at EWU and across the state of Washington, has declined by approximately 40 to 50 percent over the last 15 years. In contrast, other race/ethnicity groups have increased by 60 percent or more in the same time frame. The Lucy Covington Leadership House is part of the broader Lucy Covington Initiative at EWU.

Annual Enrollment Statewide by Race/Ethnicity



Annual Enrollment at Eastern Washington University by Race/Ethnicity



**Reference: https://erdc.wa.gov/data-dashboards/public-four-year-dashboard#annual-enrollment*

B. STATUTORY & OTHER REQUIREMENTS

STATUTORY & OTHER REQUIREMENTS

Memoranda of Understanding
The Lucy Covington Leadership House will further the goals of Eastern Washington University's commitment to the Memoranda of Understanding (MOUs) with three regional Tribes: Coeur d'Alene (July 26, 2019), Kalispel (February 12, 2018), and Spokane (April 15, 2019).

The primary purpose of the MOUs is to sustain and advance relationships between EWU and these Tribes and is summarized as follows:

> Establish an Annual Tribal Leadership Summit.

> Establish an American Indian Advisory Board where each Tribe has the authority to appoint one individual.

> Recruit, retain, and successfully graduate more American Indian students.

> Recruit, retain, and promote qualified American Indian faculty and staff to aid EWU in its mission and delivery of services to tribal communities and American Indian students.

> Strengthen partnerships between tribal communities and EWU academic and student support areas.

> Plan and construct a longhouse-style facility on campus that enhances the recruitment and success of American Indian students, acknowledges and honors the region's Tribes, and serves as a place for cultural learning and exchange for the entire community.

Through the MOUs, the preceding priorities will receive sustained attention from EWU and the Tribes to maintain communication and address shared objectives.

The MOUs are guided in spirit by the Centennial Accord between the Federally Recognized Indian Tribes in Washington State and the State of Washington of 1989. The accord affirms the sovereignty of Washington's federally recognized tribes and calls for clearer communication and better collaboration between tribal and state governments.

For more information on the Centennial Accord, follow the link: Centennial Accord | GOIA (wa.gov).

The MOUs are included in the Appendices for reference.

Lucy Covington Center Repository Research Agreement
Through an ongoing partnership with the Colville Confederated Tribes that Eastern Washington University formalized in the 'Lucy Covington Center Repository Research Agreement,' EWU intends to honor Lucy Covington's legacy. The Initiative identifies the following emphasis areas: supporting future leaders; creating a confluence of culture and causes; and developing a Lucy Covington Archive.

Development on EWU campus is regulated by the Cheney Municipal Code and the 2014 EWU Comprehensive Campus Master Plan (EWU CCMP). The Campus Master Plan is being updated in 2024-2025.

C. CONNECTION TO AGENCY MISSION, GOALS & OBJECTIVES

The EWU Strategic Plan is in draft form at the time of this Predesign publication. The following narrative demonstrates how this project is in alignment with the draft mission, goals, objectives, and desired outcomes identified.

The Lucy Covington Leadership House and Lucy Covington Initiative are part of EWU's strategic plan to increase graduation rates of underrepresented students (including American Indians). The Lucy Covington Leadership House will support this endeavor through programs and events within the facility intended to boost enrollment and retention of American Indian students.

The Lucy Covington Leadership House aligns with EWU's mission to foster an inclusive, equitable, and transformative learning environment. American Indian students at EWU have significant barriers to accessing higher education, have a higher risk of dropping out, and lower retention rates compared to other groups. American Indian students have barriers common to first-generation, low-income, and other structurally marginalized students. EWU strives to integrate the principles of justice, equity, diversity and inclusion into all University operations to foster an environment that nurtures a sense of belonging among all members of the community.

SENSE OF BELONGING

EWU strives to foster a profound sense of belonging, actively promote and sustain equity, dismantle systemic barriers, and embrace the unique perspectives of all individuals. As a desired outcome of this goal, the Lucy Covington Leadership House will create an important space to nurture this sense of belonging for American Indian students who often commute great distances from their reservations to be at Eastern Washington University.

STUDENT SUCCESS AND STUDENT EXPERIENCE

Another important goal is to promote student success and close structural equity gaps through a holistic, decolonial, people-centered, value-driven approach that prioritizes student well-being in multiple dimensions and supports students' self-exploration and self-understanding of their values, identities, cultural heritages and career paths.

As a facility dedicated to empowering and supporting American Indian students, the Lucy Covington House will be a home for American Indian students' academic advising and student services, and will help them break through the systemic barriers noted above.

D. WHAT IS NEEDED TO SOLVE THE PROBLEM

The Lucy Covington Leadership House is part of the broader Lucy Covington Initiative at EWU. The initiative seeks to support future leaders by honoring her legacy, educate the next generation of Native American leaders, create confluence of cultures and causes through community scholars and tribal leaders, and develop an archival project documenting the efforts of Lucy Covington and those who fought with her to protect sovereignty and self-determination.

The Lucy Covington Leadership House will address the identified problems in its project goals:

> Create visibility and a sense of belonging for American Indian students with a dedicated facility that supports self-exploration and self-understanding of their values, identities, cultural heritage, and career paths.

> Improve access and retention of American Indian students by serving as a center for American Indian students to support their growth and development at EWU. It will be a center where these students can have a sense of belonging.

> Bring together national speakers, scholars, academics, traditional practitioners, and Native leaders to share their experiences, wisdom, research, and indigenous knowledge.

> Develop programming that promotes understanding across cultures and political boundaries to address challenges and opportunities.

> Build a virtual archive of historic documents pertaining to the work of Lucy Covington as a part of the continued research and education regarding the importance of protecting sovereignty and self-determination.

E. RELEVANT PROJECT HISTORY

There have been no previous predesign studies or capital funding requests for the Lucky Covington Leadership House.

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Section 03

ANALYSIS OF ALTERNATIVES

A. Description of Alternatives

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SECTION 03

ANALYSIS OF ALTERNATIVES

A. DESCRIPTION OF ALTERNATIVES

The predesign team considered a range of alternatives to meet the needs identified in Section 02. Alternatives that were evaluated include:

> Preferred Alternative: Lucy Covington Leadership House (~15,000 GSF)

> Alternative 1: Full Buildout, Preferred Alternative + Future Expansion (~28,000 GSF)

> Alternative 2: No Action

Alternatives were evaluated in terms of advantages, disadvantages, cost, and schedule. Each alternative is summarized below and on the following pages.

PREFERRED ALTERNATIVE: LUCY COVINGTON LEADERSHIP HOUSE (15,000 GSF)

The conceptual program for the Preferred Alternative allocates approximately 10,000 net assignable square feet (NASF) for a total of approximately 15,000 gross square feet (GSF), into a single-story facility that supports the project goals described in Section 02, Problem Statement. The proposed Lucy Covington Leadership House brings together cultural/community gathering and event space, student support and collaboration areas, and an exhibit gallery and performance space.

The proposed building concept provides a speaking hall that accommodates up to 300 people for community and cultural events, a learning commons for studying and student collaboration, and an exhibit space featuring the life and legacy of Lucy Covington and American Indian Art and Culture.

The Preferred Alternative achieves many of the project's goals and addresses the identified problem.

ALTERNATIVE 1: FULL BUILDOUT, PREFERRED ALTERNATIVE + FUTURE EXPANSION (~28,000 GSF)

The full buildout alternative expands the program by approximately 8,000 NASF for a total of approximately 13,000 additional GSF. The full buildout proposes building the 15,000 GSF Preferred Alternative along with a 13,000 GSF expansion for a total buildout of 28,000 GSF.

In addition to providing cultural/community gathering and event spaces, student collaboration and support spaces, and exhibit gallery and performance spaces, the full buildout will have instructional program spaces that expand the American Indian Studies program and introduce new programs such as a Tribal Government program and dedicated Salish Language teaching space. There will be additional classrooms and faculty offices associated with this expansion.

IMAGE:
Isle Hall

Alternative 1 achieves and expands upon the project's goals and addresses the problems identified. Although Alternative 1 more fully achieves the project goals, it was not chosen due to the following challenges:

> Requires additional capital funding and therefore would result in a larger capital project funding request.

> Operational funding to expand academic programs as described above has not yet been procured.

ALTERNATIVE 2: NO ACTION

The No Action Alternative would perpetuate the substandard quality of experience and poor retention rates for American Indian students at EWU. American Indian students would continue to have limited representation on campus and limited space dedicated to their support. They would need to continue to use the one inadequate room available in the existing American Indian Education Center building, which houses the American Indian Studies program, for meetings, studying, and socializing.

Additionally, Alternative 2 - No Action, does not fulfill EWU's strategic mission in the following ways:

> It does not create a presence on campus for American Indian students and American Indian culture, even though there are at least four major Tribal nations in the vicinity of Eastern Washington University.

> It does not fulfill one of the primary purposes of the Memoranda of Understandings between EWU and three Tribal Nations: to construct a longhouse-style facility that enhances recruitment and success of American Indian students.

ADDITIONAL STUDY: ISLE HALL SITE LOCATION

Site locations for the project were reviewed as part of the Predesign process, and included engagement with the Project Steering Committee, American Indian EWU students, and EWU American Indian Studies faculty.

Although not selected, the Isle Hall site was considered as a potential location due to it's visibility and gateway location on campus. However, constituents voiced concerns about the level of vehicular traffic and related noise, as well as the cost impact of demolishing the existing building if it could not be retrofitted into an appropriate American Indian cultural space. The site is also limited in size and therefore would likely not accommodate both the proposed building and the significant outdoor space needed for this program, without constructing a new multi-story facility.

The Isle Hall building site still presents a promising opportunity for the project. Utilizing the Isle site could lead to significant improvements in Campus Energy Use Intensity (EUI) and provide a pathway towards compliance with the Clean Building Performance Standard and HB1390. This aligns with EWU's commitment to sustainability, carbon reduction, and energy efficiency. The forthcoming campus decarbonization and master plan will provide guidance regarding siting optimization.

Once the project is funded, further evaluation of this site should be incorporated into the design phase.

A.2 ADVANTAGES & DISADVANTAGES OF EACH ALTERNATIVE

A summary of the advantages and disadvantages of each alternative is included in the table on the following page.

TABLE:
Comparative Summary of Alternatives

	Preferred Alternative: Lucy Covington Leadership House (~15,000 GSF)	Alternative 1: Full Buildout, Preferred Alternative + Future Expansion (~28,000 GSF)	Alternative 2: No Action
Est. Cost	**$20,739,000**	**$39,177,000**	No capital funding request.
Advantages	Provides 15,000 GSF of assembly, student support and exhibit space. Addresses the problems defined in Section 02 and achieves the project goals.	Provides 28,000 GSF of assembly, student support and exhibit space along with instructional and faculty office space. Addresses the problems defined in Section 02 and achieves the project goals. It expands upon these goals by expanding the instructional programs currently under American Indian Studies and adds space for a Tribal Government program, an essential program affiliated with the Lucy Covington Initiative.	Lower first cost.
Disadvantages	Requires nearly $21 million of capital funding from the Washington State legislature. Does not include instructional space for expanding American Indian Studies or create dedicated space for a Tribal Government Program.	Requires approximately $39 million of capital funding from the Washington State legislature. Additional academic costs are also required to expand the American Indian Studies program along with academic cost to support a new Tribal Government Program. These costs have not yet been factored in by EWU. Further development is needed before programs may be expanded upon or introduced.	Currently, the American Indian Education Center contains space dedicated to American Indian Studies program. It also offers a study area with available computers, space for meetings, activities, and socializing. It does not meet all the needs of current students. >The limited space does not offer enough space to accommodate the number of current American Indian students who are seeking a space to connect with other American Indian students. >Building location is not centrally located on campus, further emphasizing lack of visibility for American Indian students. >The American Indian Studies building is not reflective of indigenous culture- neither in special organization, nor materiality, as it was originally designed as a church. >Due to its age, the building offers very limited accessibility. The main accessible entry is on the back side of the building offering unequitable experience to students, faculty or visitors with mobility impairments. >The quality of interior spaces is hindered by the lack of natural light, impacting student wellbeing.

TABLES:
Cost Estimate of Preferred Alternative and Alternative 1 (Top and Center)
Life Cycle Cost Summary Table (Bottom)

A.3 COST ESTIMATES

PROJECT COST

Cost estimate summary information for the Preferred Alternative and Alternative 1 – Full Buildout is shown at right.

There is no imminent project associated with Alternative 2 – No Action, and therefore no project cost estimate is provided.

A detailed cost model for the Preferred Alternative is included in Appendix B.

LIFE CYCLE COST MODEL

Each alternative was analyzed using the Life Cycle Cost Model (LCCM) tool provided by the Office of Financial Management. A summary is shown at lower right for the Preferred Alternative and a lease option.

Additional LCCM information for the Preferred Alternative is included in Appendix B.

Probable Cost Estimate Summary: Preferred Alternative		
Construction Cost	$16,110,800	77.7%
Consultant Services	$2,765,000	13.3%
Equipment	$643,100	3.1%
Artwork	$103,200	0.5%
Project Administration	$1,117,200	5.4%
Other Costs	$0	0.0%
Total Project Cost	$20,739,000	100%

Probable Cost Estimate Summary: Alternative 1 Full Buildout		
Construction Cost	$30,194,600	77.1%
Consultant Services	$5,349,700	13.7%
Equipment	$1,286,200	3.3%
Artwork	$194,900	0.5%
Project Administration	$2,151,800	5.5%
Other Costs	$0	0.0%
Total Project Cost	$39,177,000	100%

Life Cycle Cost Model Summary: Preferred Alternative Ownership Option	
Total Gross Square Feet	15,000
Total Rentable Square Feet	9,690
Occupancy Date	November 1,2028
Initial Project Costs	$15,756,338
Est. Construction TPC ($/GSF)	$1,170
RSF/Person Calculated	14
30 year Net Present Value	$15,781,209
50 year Net Present Value	$33,471,153

Life Cycle Cost Model Summary: Lease Option	
Total Rentable Square Feet	15,000
Annual Lease Cost (Initial Term of Lease)	$469,950
New Lease Operating Cost/SF (Initial Term of Lease)	$11.61
Occupancy Date	November 1,2028
Project Initial Costs	$1,257,423
RSF/Person Calculated	17
30 year Net Present Value	$27,695,053
50 year Net Present Value	$34,764,668

TABLES:
Estimated Project Schedule

A.4 ESTIMATED SCHEDULES

A summary of the anticipated schedule for the Preferred Alternative and Alternative 1 – Full Buildout is shown at right, including anticipated start, midpoint, and completion dates.

There is no imminent project associated with Alternative 2 – No Action, and therefore no estimated project schedule is provided.

PREFERRED ALTERNATIVE: LUCY COVINGTON LEADERSHIP HOUSE (15,000 GSF)

The anticipated project schedule for the Preferred Alternative assumes design funding is awarded in the 2025-27 Capital Budget and construction funding is awarded in the 2027-29 Capital Budget.

Design is slated to start in November 2026, with construction beginning in November 2027 and reaching substantial completion by November 2028. Building occupancy is anticipated in February 2029.

ALTERNATIVE 1: FULL BUILDOUT, PREFERRED ALTERNATIVE + FUTURE EXPANSION (~28,000 GSF)

The Alternative 1 – Full Buildout schedule also assumes design funding is awarded in the 2025-27 Capital Budget and construction funding is awarded in the 2027-29 Capital Budget. The anticipated schedule is the same as for the Preferred Alternative.

Project Schedule: Preferred Alternative + Alternative 1 Full Buildout

PHASE	DURATION	START DATE	END DATE
Design / Construction Funding		**July 2025**	
Design	**12 mos.**	**November 2026**	**November 2027**
Construction	**12 mos.**	**November 2027**	**November 2028**
Move-In / FF&E	**3 mos.**	**November 2028**	**February 2029**
Occupancy		**February 2029**	

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Section 04

DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

A. Scope and Project Description

B. Site Analysis

C. Consistency with Long-Term Plans

D. Consistency with Other Laws & Regulations

E. Problems that Require Further Study

F. Components that Exceed Existing Code

G. Planned Technology Infrastructure

H. Planned Security Measures

I. Commissioning

J. Future Phases or Facilities

K. Project Management and Delivery Method

L. Project Schedule

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SECTION 04

DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

A. SCOPE & PROJECT DESCRIPTION

The conceptual program for the Preferred Alternative allocates 15,000 GSF into a new one-story Lucy Covington Leadership House that supports the project goals described in Section 02, Problem Statement. The building program focuses on three key areas that support the goals of the Lucy Covington Initiative: Community Gathering, Student Support, and Celebrating Lucy Covington's Life and Legacy.

Community Gathering

Lucy Covington Leadership House is well-suited to provide a culturally responsive center for collaboration between students, faculty, and tribal nations. With a vision of the Tribal Government Leadership program, the core element of Lucy Covington's Legacy, being established in the future, a large Speaking Hall will provide a unique American Indian multipurpose space to host speakers, performances, and community gatherings.

Student Support

Research indicates that student services are critical to the development and success of students. The Lucy Covington Leadership House is primarily envisioned to support the success of American Indian students attending EWU.

The American Indian Student Center in the new facility will provide a "home away from home" and create a sense of community for these students, allowing for an easier transition from reservation to university. The building will have student support spaces such as a study lounge, makerspace, and collaboration areas, along with flexible meeting space that be used for drop-in counseling and advising.

Celebrating Lucy Covington's Life and Legacy

Lucy Covington's life and legacy can be represented through the following key themes: her warm and welcoming personality, storytelling, and sense of responsibility.

Predesign engagement sessions and research indicated that Lucy Covington's story would be best commemorated by conveying her warmth and welcoming presence immediately upon entry into the building. Display and exhibition pieces will showcase Lucy's achievements alongside the achievements of other American Indian artists and regional and national leaders, emphasizing storytelling, interactivity, and self-reflection. A space for storytelling will be created through the intersection of interactive exhibits of Indigenous art, music, and performance.

The facility will honor Lucy's life by passing on her teachings and leadership legacy and imparting a sense of responsibility to young American Indians to be connected to their roots while succeeding and becoming leaders in the contemporary world.

IMAGE:
Native American Student Association (NASA) Visioning Session with Design Team

PROJECT GOALS

In alignment with EWU's Lucy Covington Initiative, the Lucy Covington Leadership House will help equip and encourage generations of American Indian youth to protect and enhance the welfare of their tribes and tackle the most pressing issues facing humanity. American Indian students are facing many challenges as they are transitioning from their reservation to navigating through higher education. Among them, the lack of visibility and representation is a significant barrier and reason for low success rates in higher education.

A primary goal of this longhouse-inspired facility is to recruit and retain American Indian students, set them up for success, and prepare them for leadership roles within their tribal communities and the wider region. In addition, the building will host opportunities for American Indian students to model leadership driven by indigenous values and follow Lucy Covington's leadership legacy, providing a steppingstone for the future leaders of tribal governments standing for tribal sovereignty.

The Lucy Covington Leadership House will serve as a foundation for building interdisciplinary partnerships, but most importantly it will center indigenous knowledge and work against the erasure of the indigenous histories. In the long term, the building will also help attract and retain leading indigenous scholars, practitioners, and leaders to share experiences, wisdom, and research through teaching and mentoring at EWU.

The Lucy Covington Leadership House will facilitate learning from history, healing, and the restoration of culture and identity of American Indians. It will be a teaching tool to support the University's Climate Action Plan and Prairie Restoration project, serving as a bridge between tradition and the future. In the long term, the facility will support the need for sustainability and climate change education.

STUDENT INPUT TOWARDS PROJECT VISION

Student engagement with EWU's Native American Student Association during the predesign process garnered input about the American Indian Student Center. The discussion fell into three key themes for students: empowerment, stewardship and University support, and reclamation.

Empowerment: Providing a home for American Indian students at EWU will provide the opportunity for these students to feel safe, recognized, and acknowledged on campus. It will be a place for them to connect with their heritage.

Stewardship & University Support: Students believe that the Center will be a great resource for all people to understand and connect with American Indian culture. As a facility that provides support for American Indian students, the project may be a catalyst toward improving access, inclusion, and retention for all students, particularly students of color and disenfranchised populations.

Reclamation: Students want the opportunity for more visibility on campus. The building should serve as a beacon of American Indian culture, pride and indigenous reclamation.

SUSTAINABLE ECOLOGIES

Buildings are responsible for some 40 percent of total annual global greenhouse emissions. To impact climate change, they must be designed sustainably from the start. Although building design is often driven by first costs, sustainable design must move beyond this approach and address the triple bottom line: economy, ecology, and equity.

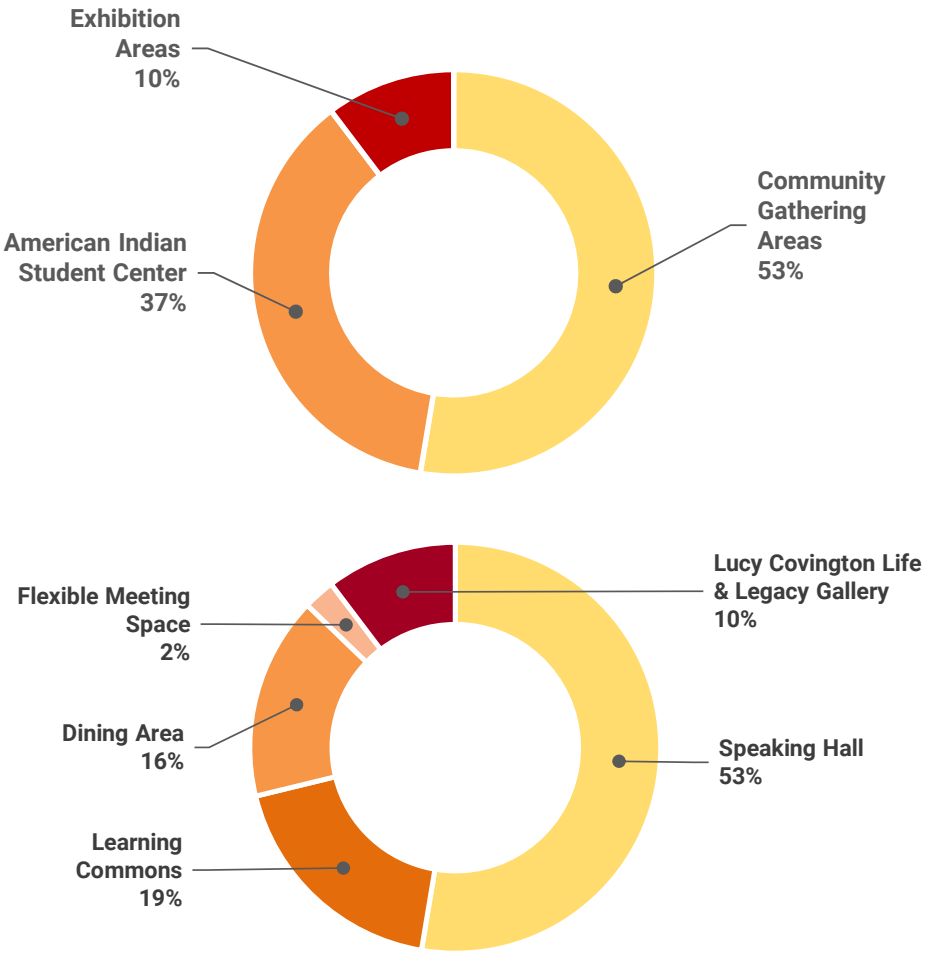
True sustainability is a balance between responsible use of public resources, preservation of ecological systems, and support of societal needs. Eastern Washington University understands these imperatives and has made sustainability a central tenet of their identity and mission, which will be reflected in the Lucy Covington Leadership House.

CHARTS:
Area Allocation by Space Type
Area Allocation by Program

A.1 NATURE OF SPACE

Lucy Covington Leadership House's net assignable program areas have three primary functions, or space types: community gathering, exhibition, and student support.

Of the assignable building area, 53 percent is allocated for Community Gathering Areas, comprised of a Speaking Hall and its support areas, 37 percent is allocated for the American Indian Student Center, including a Learning Commons, Dining Area, and Flexible Meeting Space, and 10 percent is allocated for Exhibition Areas, including the Lucy Covington Life and Legacy Gallery.



COMMUNITY GATHERING AREAS

Speaking Hall

The Speaking Hall will serve a variety of different gathering and performance functions, but its primary intent is to bring American Indians together from around the region. It will serve to hold events where indigenous knowledge is shared, and it will encourage collaboration between indigenous practitioners, scholars, and leaders from the region, nation, and international community.

The space will accommodate approximately 300 lecture-style tiered seats. The building's spatial organization and finishes will draw inspiration from indigenous architecture, resembling a longhouse-style space. Additional Speaking Hall support areas include an audio-visual room, a green room, and designated furniture storage.

AMERICAN INDIAN STUDENT CENTER

Learning Commons

The Learning Commons provides a variety of collaborative spaces to create a welcoming environment for students, mentors, staff, and visitors to engage in multiple ways. Areas include a study lounge, small group collaboration spaces, and a makerspace / open work area. The study lounge will provide a centralized, collaboration space for American Indian students to feel at home and interact on a daily basis. The lounge will provide flexible space for approximately 40 students in soft seating and table seating areas. Small group collaboration spaces will provide places for groups to meet, study, and build community.

The makerspace/ open work area is dedicated for American Indian students' use and provides a home for their ongoing projects. This space, sized for up to 16 students, opens out to an exterior patio to accommodate larger projects and promote visibility of American Indian culture and traditions on campus. The makerspace will support guest artists and craftsmen passing down indigenous craft and knowledge to younger generations of American Indians. A portion of the makerspace area will integrate a flexible computer lab to support and accommodate digital projects and general homework needs.

Community Kitchen and Dining

The Community Kitchen and Community Dining areas will serve as a focal point of the building. The kitchen will be available for use by students that are in the facility, as well as serving as a catering kitchen for functions in the building and a teaching kitchen for traditional cooking.

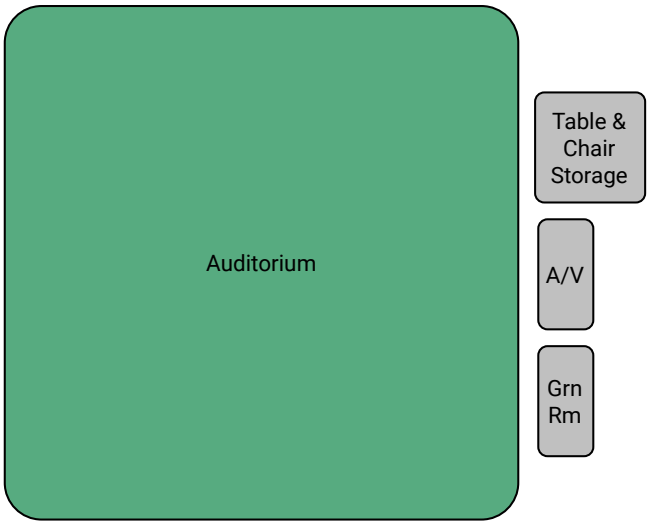
The dining area will accommodate up to 50 people in a variety of table seating configurations. Adjacency between these areas and the Speaking Hall will allow them to open and be used simultaneously for large functions. These

DIAGRAM:
Program Areas

COMMUNITY GATHERING AREAS

5,100 SF

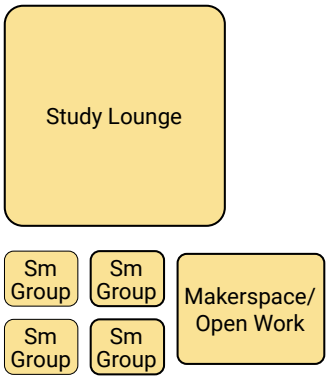
Speaking Hall



AMERICAN INDIAN STUDENT CENTER

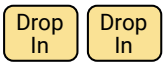
3,590 SF

Learning Commons



Dining Area

Flexible Meeting Space



EXHIBITION AREAS

1,000 SF

Lucy Covington Life & Legacy Gallery

spaces will also open to an outdoor courtyard designed to provide visual privacy.

Flexible Meeting Space
Two flexible meeting rooms will accommodate student functions including private and group study, drop-in counseling, and Temporary Assistance for Needy Families (TANF) counseling.

EXHIBITION AREAS

Lucy Covington Life and Legacy Gallery
Part of Lucy Covington's essence was her warmth and welcoming persona, which will be conveyed in the exhibit gallery / entry lobby, providing an opportunity to tell the story of her achievements and capture her warmth for everyone who enters the building. The Lucy Covington Life and Legacy Gallery will empower American Indians visiting and using the building and educate non-Native students and visitors about the history and importance of Lucy Covington's work and the history of regional tribes. This program area sets the tone for the building as a teaching tool.

Displays of local and regional tribal leaders can also be dispersed throughout the building, showcasing the diversity of tribal histories and styles. Various displays should be curated to teach through storytelling, such as using stills in combination with narration, analog displays open to visitors' comments, interactive storytelling.

Design and displays should consider the use of natural earth elements- circles, feathers, water, animals, geometric shapes, pictographs, earth tones etc. An iconic/symbolic element such as the Eagle Feather could be an interactive feature that accommodates self-reflection and personal storytelling. Losing Eagle Feather represents losing land, which embodies the essence of Lucy Covington's political fight and work.

TABLE:
Building Occupancy Summary by Function

SPACE TYPE	NSF	Total OCC	FEPG Category
COMMUNITY GATHERING AREAS			
Speaking Hall			
Auditorium	4,500	300	600
A/V Support	150	1	700
Green Room	150	5	700
Table and Chairs Storage	300	1	700
Subtotal: Community Gathering Areas	***5,100***	***307***	
AMERICAN INDIAN STUDENT CENTER			
Learning Commons			
Study Lounge	1,000	40	400
Small Group Collaboration	400	4	400
Makerspace/Open Work Area	400	16	400
Dining Area			
Community Kitchen	300	1	400
Community Dining Area	1,250	50	400
Flexible Meeting Space			
Drop-in Advising	240	83	400
Subtotal: American Indian Student Center	***3,590***	***194***	
EXHIBITION AREAS			
Lucy Covington Life & Legacy Gallery			
Exhibit Gallery / Entry Reception	1,000	40	600
Subtotal: Exhibition Areas	***1,000***	***40***	
Total Assignable Areas	***9,690***		
Total Unassignable Areas	***5,310***		700
Total Building Area	**15,000**	**541**	***occupants***

A.2 OCCUPANCY

The Preferred Alternative provides space for 541 total occupants in the building, including 347 occupants in community gathering areas and 194 occupants in the American Indian Student Center.

The table above identifies occupancy counts for each space type and building area.

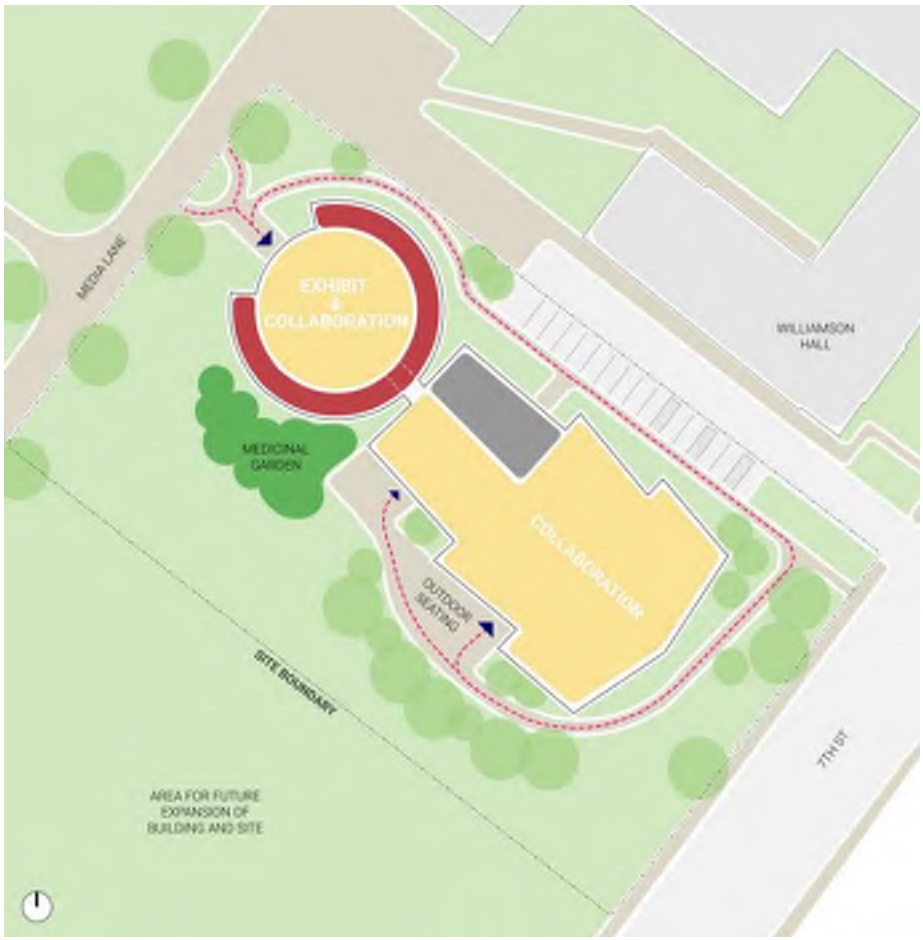
CONCEPTUAL PLAN DIAGRAM:
Preferred Alternative

A.3 CONCEPTUAL BUILDING CONFIGURATION

The following description summarizes the conceptual thinking regarding building design and configuration but does not represent a final design for the building. This information is used as the basis of the predesign cost estimate and to highlight potential opportunities and challenges of the project. It is anticipated that the design team will develop the final building design in alignment with project goals, program, and budget once funding is approved.

The building form is intended to be a tribute to the tradition and culture of the Indigenous people inhabiting the Plateau. The cultural influence on the design concept in this Predesign study was a Seasonal Rounds. In practice, the weather pattern changes are significant in the Plateau Region and are indicators of the natural resources and activities change throughout the year. It is envisioned that the activities, performances and exhibits that will be held within the gallery space will reinforce this concept of seasonal change. The soft radius of this Seasonal Rounds inspired shape also defines a unique building entry on campus. The adjacent volume to the round drew inspiration from a longhouse and be configured to host community and cultural gatherings.

The Lucy Covington Leadership house is envisioned to provide a home away from home to American Indian students, who often must commute great distances from their reservations to attend EWU. It would be home for American Indian students to feel safe for their self-exploration and self-understanding of their values, identities, cultural heritages.



BUILDING CONFIGURATION

The Preferred Alternative concept for the Lucy Covington Leadership House is a 15,000-square-foot, one-story building. The main building entry is located off the major pedestrian thoroughfare.

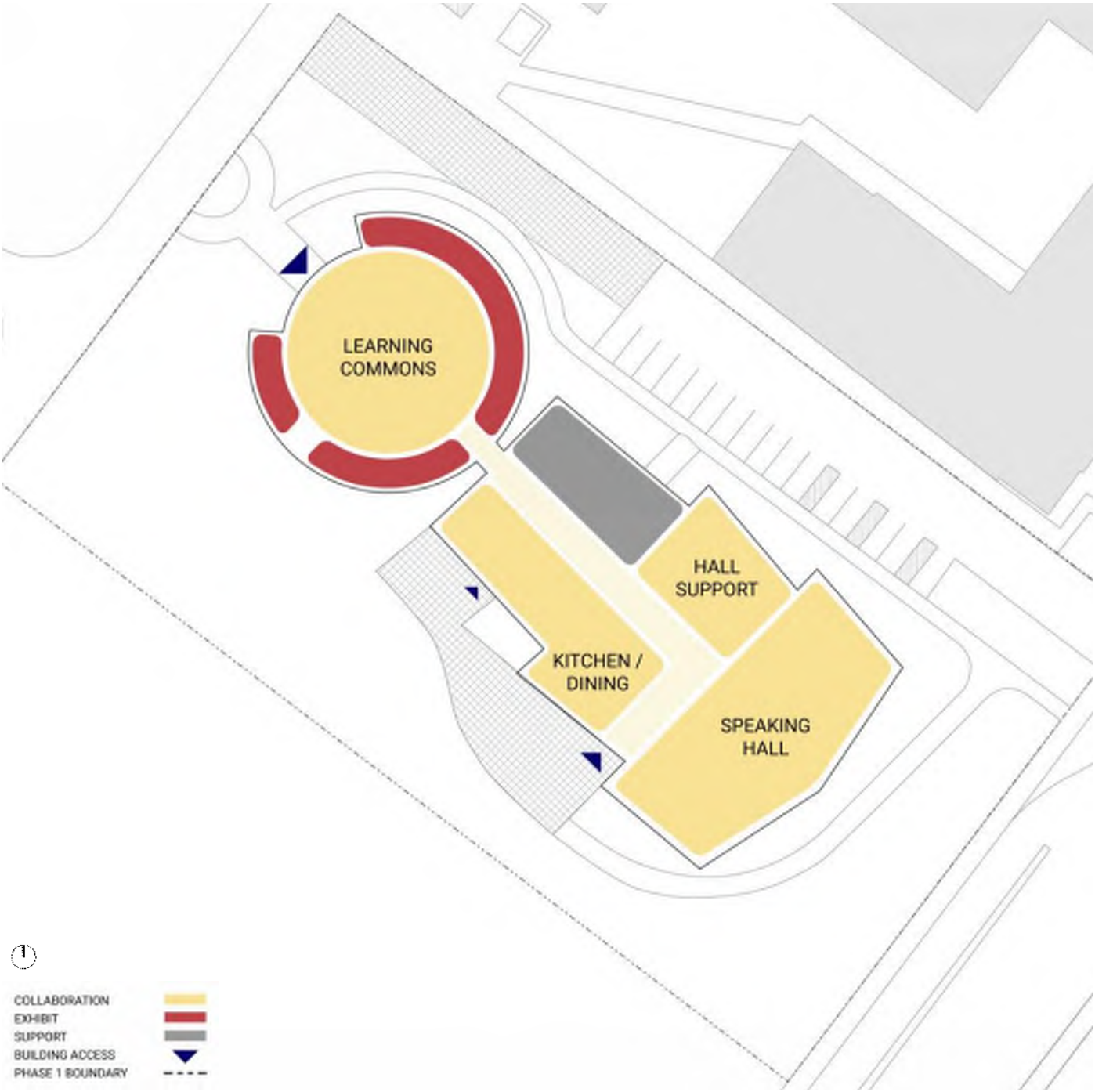
Through the vestibule, students will be welcomed into the Learning Commons, a circular lounge and student support area. This area is designed for group gatherings and collaborative activities, but also includes contemplative spots that provide areas for focused study and respite. It is surrounded by an exhibit area that will showcase Lucy Covington's life and tribal cultures.

The Learning Commons' double-height volume will integrate a skylight that will not only enhance natural light, but also provide a visual link between the sky, the occupants, and the earth, connecting building users to the natural environment.

From here, a longhouse-inspired volume can be accessed, which will be used for more formal gathering. This area contains the Speaker Hall at the south end, as well as centrally-located community kitchen and dining areas, a makerspace, and the main service core, including restrooms and building system areas.

The longhouse is situated between the more public access road, facing Martin and Williamson Hall, and the private courtyard area. The south and southwest edges of the site will use land sculpting to create earthen berms. These will provide screening and casual places to sit during events, as the dining area and Speaking Hall will open onto these areas and create a more seamless indoor/outdoor experience.

CONCEPTUAL FLOOR PLAN DIAGRAM:
Level 1



The layering of types and sizes of exterior gathering areas is intentional so that the building's most private space is an area set aside for a self-constructed traditional sweat lodge.

PROGRAM CONFIGURATION

The floor plan of the building is anticipated to contain a vibrant mix of program areas. Spaces are organized from most public to those serving more private functions. Starting from exhibit and study lounge areas, followed by meeting and maker spaces, to communal dining and speaking hall.

The circular exhibit space will not only be utilized for exhibition, but also for sharing indigenous culture through storytelling, performance art, and film. The nature of circular space diminishes the hierarchy and lends itself to communal activity and building strong connections. The informal seating and gathering areas, along with the dedicated meeting rooms, are encouraged to be visible from the main campus thoroughfare, while also activating the interior of the building.

IMAGE:
Existing American Indian Education Center, EWU Campus

A.4 SPACE NEEDS ASSESSMENT

PROGRAM DEVELOPMENT PROCESS

The Steering Committee provided a preliminary guideline program that was used as a starting point for predesign. Further program development was derived from an analysis of building users' needs, overlaid with the preliminary program. Information was gathered through visioning sessions with the Steering Committee, American Indian Studies program faculty, and Native American Student Association (NASA).

The design team also utilized historic program information from similar projects to establish physical facility square footage requirements. An initial "ideal" numeric program evolved from this process, outlining the desired spaces. This initial program was refined to align with the allowable program size accommodated by the allocated budget, through efficient use of space and implementation of shared usage wherever possible, while still providing necessary program functions.

Program reduction strategies included combining meeting areas, incorporating computer stations within the makerspace rather than in a separate room, and a general increase in the efficiency of the building. Desired instructional programs were not included in the Preferred Alternative program, due to lack of staffing for these programs. These instructional programs were included as part of a future expansion of the building.

The resulting building program, at 15,000 GSF, aligns with a lower budget and achieves project goals.

IDENTIFIED NEEDS ADDRESSED IN THE PREFERRED ALTERNATIVE

Existing campus facilities do not provide the space that is needed to support the Lucy Covington Initiative and address underrepresentation and declining enrollment of American Indian students in higher education.

EWU's American Indian Education Center, shown above, houses instructional space dedicated to the American Indian Studies program and includes one room that is currently used as a student study area. While this building is significant to EWU alumni of American Indian heritage, it does not meet current student needs, support the goals of the Lucy Covington Initiative, or address underrepresentation and declining enrollment of American Indian students in higher education as follows:

> The limited amount of space does not accommodate the current number of American Indian students or provide needed functions.

> The existing building is not centrally located on campus, further emphasizing the lack of visibility for American Indian students.

> The building is not reflective of indigenous culture, in its configuration or materials, as it was originally designed as a church.

> The building has very limited accessibility. The main accessible entry is on the back side of the building, creating an inequitable experience to students, faculty, or visitors with mobility impairments.

> The interior space students currently use the most is located in the basement and lacks natural light, impacting student wellbeing.

There is no existing space dedicated to celebrations of indigenous cultures and traditions on campus. EWU's annual Spirit of Eagle Powwow is currently held in the campus fieldhouse, which limits food preparation and is not representative of American Indian identity and culture.

The new Lucy Covington Leadership House will provide intentional and dedicated areas directly supporting the Lucy Covington Initiative and addressing the issues of underrepresentation and declining enrollment. Program areas that will support functions not currently provided on campus include:

> Speaking Hall

> Learning Commons

> Dining area with community kitchen

> Makerspace / open work area

> Flexible meeting space

> Lucy Covington life & legacy gallery

TABLES:
Numeric Space Program Summary (Top)
Program Comparison to Guidelines (Bottom)

NUMERIC SPACE PROGRAM

The proposed program for Lucy Covington Leadership House, summarized above, allocates 15,000 GSF for the building. This accommodates 9,690 square feet of assignable area, including Community Gathering Areas, Exhibition Areas, and an American Indian Student Center.

The program has a 65 percent efficiency ratio, indicating that 65 percent of the total building area is allocated for assignable program functions and 35 percent is allocated for building services, building systems, circulation, and walls.

A detailed numeric space program for Lucy Covington Leadership House is included in Appendix D.

PROGRAM COMPARISON TO GUIDELINES

Proposed program areas for the Lucy Covington Leadership House align with, or are more efficient than the State guidelines, as shown in the bottom table.

Other required facilities in the State Facilities Workplace Strategies and Space Use Guidelines provided in the proposed program include a Wellness room, required for facilities over 5,000 GSF.

PREFERRED ALTERNATIVE

PROGRAM AREA		NSF	% of NSF
COMMUNITY GATHERING AREAS			
Speaking Hall		5,100	*52.6%*
AMERICAN INDIAN STUDENT CENTER			
Learning Commons		1,800	*18.6%*
Dining Area		1,550	*16.0%*
Flexible Meeting Space		240	*2.5%*
EXHIBITION AREAS			
Lucy Covington Life & Legacy Gallery		1,000	*10.3%*
Total Assignable Square Feet (NASF)		***9,690***	
UNASSIGNABLE AREAS	*% of GSF*		
Building Support	*6.1%*	910	
Building Systems	*8.0%*	1,200	
Circulation / Walls	*21.3%*	3,200	
Subtotal - Unassignable Areas	*35.4%*	*5,310*	
Total Building Area		**15,000**	
Building Efficiency		**65%**	

Program Area	FEPG Guidelines	Space Use Guidelines	Project Program
Offices	**120-175 SF each**	**100-150 SF each**	**120-150 SF each**
Instructional Areas	**16-20 SF/station**	**n/a**	**30 SF/person**
Conference Rooms	**20 SF/person**	**15 SF/person**	**20 SF/person**
Collaboration Space	**25-35 SF/person**	**20 SF/person**	**20 SF/person**
Assembly Space	**15-16 SF/person**	**n/a**	**15 SF/person**

IMAGE:
Aerial View of Project Site and Surrounding Area, EWU Campus

B. SITE ANALYSIS

B.1 SITE STUDIES THAT ARE COMPLETED OR UNDERWAY

Eastern Washington University will be updating its Campus Master Plan in the Fall of 2024 and targeting its completion in the Fall of 2025. As EWU moves forward with updating their Campus Master Plan, future projects such as the Lucy Covington Leadership House will need to align with the revised vision and objectives outlined in that plan.

B.2 PROJECT SITE INFORMATION

LOCATION

The site selected for this Predesign study is located at the southeast edge of the EWU campus in Cheney, Washington. It is the former site of Robert Reid Lab school, which has been demolished and the site cleared in 2015. The site abuts a residential neighborhood on the other side of 7th Street.

To the northwest the site is bounded by Media Lane, a major pedestrian thoroughfare parallel to 7th Street. The large deciduous trees lining Media Lane will contribute to a project's biophilic design, provide shade in the warmer months, and allow for additional visual connectivity to the campus core during fall and winter months. On the northeast edge of the site, the Lucy Covington Leadership House building will sit parallel to Martin and Williamson Hall.

FOOTPRINT, ADJACENCIES, & SITE FEATURES

The proposed building will be a one-story freestanding structure with a footprint of approximately 15,000 square feet. The building will occupy 25 percent of the total site area of 60,000 square feet. The site is relatively flat and covered with sparse grass. The new building will share a new access road with Martin and Williamson Hall, which will be included in the scope of the renovation of that building. Parking on the site is proposed to accommodate about sixteen stalls, including electric charging stalls and accessible parking stalls. It will also provide delivery access to the building.

Circulation

The major pedestrian pathway is along Media Lane, which diagonally connects the campus gateway by Isle Hall and the Art and Computer and Engineering Buildings located at the south end of campus.

Commuters arriving by bus will most commonly enter the campus via Mall Lane from Eagle Station on Elm Street. Many students, faculty, and staff arrive at EWU campus by personal vehicle. In this case, the most common entry point to campus is from Washington Street, but also off 7th Street, or via Study Lane or Quad Lane (which turns into Media Lane, bypassing our site).

Fire and service access are provided along 7th Street, Media Lane, and the new access lane shared with Martin and Williamson Hall.

PREFERRED ALTERNATIVE SITE CONCEPT

During the stakeholder engagement process, this site was deemed as preferred location by the members of the Native American Student Association (NASA) over other considered site locations. The abundant outdoor space would give the building room to breathe and accommodate the many possible outdoor programs and connections that the new Center would offer. Outdoor events and gatherings should be taken into consideration for future development and by the Campus Master Plan. Choosing this prominent location on campus was of a crucial importance for elevating the visibility, presence, and importance of American Indian students and faculty members at EWU.

Based on circulation patterns, the chosen site is optimally located. The building is envisioned not only as a destination but also as a connector between the Art building and the campus core. It is also a short walking distance from the EWU's Visitor Center, Arevalo Campus Mall, and Pence Union Building.

WATER RIGHTS & WATER AVAILABILITY

Eastern Washington University (EWU) provides drinking water from two drilled wells, both of which draw from a groundwater aquifer. Well 1R is located in the Plant Utilities building and can pump up to 450 gallons per minute at a depth of 834 feet. Well 2R produces 900 gallons per minute at a depth of 1145 feet.

Chlorination of the campus water supply began in 2010. Since 2016, water from both wells has been routed through a new chlorine building for treatment before being distributed throughout campus via the tower. To ensure the safety of the tap water, backflow assemblies are installed through the campus to protect the water system. Two Cross Connection Control Specialists and three Backflow Assembly Testers, employed by the university, conduct tests on all assemblies annually and perform any necessary repairs or replacements. A report is submitted to the Department of Health each year.

The water supply meets or exceeds all standards set for quality and safety, and EWU is committed to providing safe, high-quality water. EWU's annual drinking water report can be found at https://inside.ewu.edu/facilities/water/.

STORMWATER REQUIREMENTS

The proposed facility will follow the Stormwater Management Manual for Eastern Washington to meet the requirements for conveyance, flow control, and water quality treatment. It is anticipated that all stormwater will infiltrate on site but rainwater harvesting may be used towards additional LEED points. A small amount of pollution-generating impervious area, a small parking lot with an access road that will be shared with the adjacent Martin and Williamson Hall site, will be conveyed to a bio infiltration swale for water quality treatment. The bio infiltration swale will also be used for collecting the roof runoff from the building. Catch basins and piping will collect the runoff from the building and hard surface and be routed to the bio-infiltration swales.

OWNERSHIP OF THE SITE

The Lucy Covington Leadership House will be located on the EWU campus, on land that is owned by Eastern Washington University. There are no acquisition issues related to this project.

PROPERTY SETBACK & EASEMENT REQUIREMENTS

The project site is located in in Public (P) Zone which is applicable to the entire EWU campus. It is totally within the existing campus, with frontage on 7th Street to the southeast. The project will adhere to the setbacks specified by the City of Cheney and the building separation requirements of the current building code.

NEIGHBORHOOD ISSUES

Establishing and maintaining effective communication with the campus neighbors, beginning in design, and continuing through construction, will be important given the proximity of the proposed project location adjacent to the campus boundary. As part of its construction best practices, EWU will implement communications plans and protocols to inform neighbors of construction activities and manage any communications, concerns, or complaints that may arise during construction.

UTILITY EXTENSION OR RELOCATION ISSUES

The existing site currently has water and sewer service stubbed to the site as there was an existing building in the northeast corner of the lot that has been removed. The old water and sewer lines that went to an existing building will need to be removed / abandoned. There are existing sanitary sewer lines that run along the northern and eastern portion of the site as well as a water line along the eastern portion, which will be used as the connection point for the proposed building.

It is assumed the building will have fire sprinklers and will need a fire service line as well as the domestic water service line. An irrigation system will be connected to the same water line. Locations for backflow preventers, water meters and fire hydrants will be determined during building and site design. There also is an existing utility tunnel under the existing concrete sidewalk as well as abandoned cable lines near the site.

Existing onsite power: The proposed project site is currently serviced by Avista through underground electrical. The campus Electrical Distribution Upgrades Ph. 2, Termination Pt. #11A above grade, brings a high voltage switch location directly to the proposed Lucy Covington Leadership House site. A new feeder from the existing electrical distribution upgrade Ph. 2 at termination Pt. #11A will be installed to serve the new building. Transformer location to be coordinated during the design phase.

The utility will coordinate burial of remaining electrical overhead services and/or relocation of underground electrical. Avista and Eastern Washington Campus Officials will verify acceptable design.

POTENTIAL ENVIRONMENTAL IMPACTS

There are no known existing environmental issues on the preferred site that need to be mitigated.

PARKING AND ACCESS ISSUES

The campus is well served by an existing vehicular circulation network. No significant roadway or signalization improvements are anticipated on- or off-campus, given no increase in FTE capacity generated by the Lucy Covington Leadership House. Parking quantities are managed on a campus-wide basis based on periodic analysis of parking demand and use patterns.

Approximately sixteen visitors, delivery, and accessible parking stalls will be accommodated within the access road the building will share with Martin and Williamson Hall.

CONSTRUCTION IMPACT

Eastern Washington University has demonstrated success at managing complex construction projects in its campus core and mitigating diverse impacts to surrounding areas with multiple construction projects. Establishing adequate laydown areas, coordinating deliveries, traffic control, and contractor parking, and managing construction noise impacts, all with an emphasis on ensuring the safety of the campus community and construction workers, as well as surrounding neighbors are proven keys to success.

The following surrounding uses will be impacted during construction:

- Adjacent area between the site and Arts Building will be used as lay-down area during construction
- Utility installation/relocation along Media Lane and site lighting updates will have an impact on pedestrian use of Media Lane.
- Mature trees along Media Lane will need to be protected during construction.
- A new access road from 7th Street which will edge the project and Martin and Williamson Hall will be impacted, but fire access to JFK Library will be planned for.
- The Drop-off area along 7th Street will be utilized by construction vehicles.

C. CONSISTENCY WITH APPLICABLE LONG-TERM PLANS

Eastern Washington University will be updating its Comprehensive Campus Master Plan (CCMP) in the Fall of 2024 and targeting completion in the Fall of 2025. As EWU moves forward with updating its CCMP, future projects such as the Lucy Covington Leadership House will need to align with the revised vision and objectives outlined in that plan.

D. CONSISTENCY WITH OTHER LAWS & REGULATIONS

D.1 HIGH-PERFORMANCE PUBLIC BUILDINGS (CHAPTER 39.35D RCW)

EWU implements environmental stewardship and sustainability principles in the development and management of their buildings and capital projects. Sustainable design includes efficient management of energy and water resources, management of materials and waste, protection of health and indoor environmental quality, protection of the environment and reinforcement of natural systems, and an integrated design approach. Sustainability encompasses design, construction, operations, and demolition practices, as well as environmental, economic, and social impact.

State-funded higher education projects will be designed, constructed, and certified to at least the Leadership in Energy and Environmental Design (LEED) Silver standard under the v4.1 New Construction pathway. Lucy Covington Leadership House will achieve at least LEED Silver certification but has the goal of achieving LEED Gold. By designing to the LEED Silver or Gold standard, the College will reduce lifecycle costs (as required by OFM), thereby increasing both environmental and financial sustainability.

In addition to lowering operating costs, high-performance buildings as described in RCW 39.35D should also make occupants more productive, reduce worker absenteeism, and bolster well-being. The use of decoupled ventilation and conditioning strategies with a dedicated outside air system (DOAS), also known as energy recovery ventilators (ERV), can create healthier buildings while reducing energy use.

These systems operate with the core intent of ensuring a well-ventilated environment for student learning success. Studies have demonstrated that good ventilation is key for occupants' ability to focus and maintain concentration, while also reducing air borne pathogens to keep spaces hygienic and healthy. Both MERV 15 and carbon filtration should be employed to ensure high indoor air quality, even during forest fire seasons.

A detailed summary of the sustainability charrette that included the predesign team and EWU and outlined major sustainability strategies is included in the section 07 Supplemental Appendices.

D.2 STATE EFFICIENCY & ENVIRONMENTAL PERFORMANCE REQUIREMENTS (EXECUTIVE ORDER 20-01)

Washington State's Executive Order 20-01 states that all newly constructed state-owned (including lease-purchase) buildings shall be designed to be zero energy or zero energy capable and include consideration of net-embodied carbon.

EWU has expressed strong interest in net zero renewable energy. Enhanced goals to achieve net zero are to be further assessed during the design phase, taking into account cost effectiveness, space constraints and environmental impact. Cost effective is defined as a simple payback of less than five years or a life cycle cost less than the baseline. A life cycle cost analysis (first cost, energy, operations, maintenance, replacement, productivity), is not necessary for measures with simple paybacks less than five years.

Electrification of the building is a key strategy to achieving net zero energy and operational carbon emissions. As the electrical grid adopts greater percentages of renewable energy sources (wind, solar, hydro, etc.), a path to decarbonize the built environment is electrification. The 2021 Washington Energy Code will require electrification for buildings of this size and occupancy for HVAC systems and partial electrification of building domestic hot water. This will be accomplished for this project through heat pump technology via a centrally located ground source.

New buildings larger than 10,000 square feet of gross conditioned floor area, will include a renewable energy generation system consisting of not less than 0.5 W/ft2 or 1.7 Btu/ft2 multiplied by the sum of the gross conditioned floor area. Washington State Energy Code 2021 edition, 51-11c WAC section C411.

Based on a 15,000 GSF footprint, the solar design will need to generate 7.5kW of renewable energy. It can be anticipated to be a minimum of $93,000.00

D.3 STATE ENERGY PERFORMANCE STANDARDS FOR CLEAN BUILDINGS (RCW 19.27A.210)

The Lucy Covington Leadership House building project comprises less than 50,000 gross square feet of construction and is thus not a 'Covered Commercial Building' nor bound by the requirements of RCW 19.27A.210.

D.4 ELECTRIC VEHICLE INFRASTRUCTURE (RCW 12.27.540)

Parking quantities, including number and location of electric vehicle charging stations, are managed on a campus-wide basis based on periodic analysis of parking demand and use patterns.

No additional parking will be required as part of the Lucy Covington Leadership House project, however both traffic and parking impacts will be confirmed during design process including an assessment of compliance with RCW 19.27.540.

Per RCW 19.28, where new parking is provided at the building, electric vehicle charging stations and infrastructure shall be provided in compliance with WAC 51-50-0429. The electric vehicle charging stations and infrastructure shall meet Level 2 charging capacity requirements with each charger rated for 40 amps at 208V, 1PH. Charger locations will be coordinated to not conflict with campus snow removal operations.

D.5 GREENHOUSE GAS EMISSIONS REDUCTION POLICY (RCW 70.235.070)

EWU will reduce greenhouse gas emissions to meet and exceed the goals passed by the Washington State Legislature in April of 2009, requiring Washington State agencies reduce emissions 15 percent below 2005 levels by 2020, and 36 percent below 2005 levels by 2035. Based on their Climate Action Plan, EWU is targeting 45 percent reduction by 2030, 70 percent reduction by 2040 and 90 percent reduction by 2050. In addition, EWU is currently under contract with an engineering consulting firm to conduct a 15-year decarbonization plan that will provide a pathway(s) to transition the campus away from the use of fossil fuels for building heating, compliance with the Clean Buildings Performance Standard, and guide the new campus masterplan to prioritize sustainability in the built environment.

To achieve the GHG targets, EWU must accelerate increases in energy efficiency and reductions in GHG emissions. The nearer-term 2030 reduction target is likely achievable through available technologies and practices. Strategies for the 2030 target include:

> Invest in infrastructure improvements to reduce energy use and GHG emissions

> Support facilities personnel in the sustainable management and maintenance of campus

> Use existing space efficiently

- Avoid increasing total campus square footage
- Carbon sequestration through the Prairie Restoration Project and management of the campus landscape
- Install electric vehicle infrastructure for both university operations and public use
- Electrify vehicle fleet and maintenance equipment
- Establish a University Sustainability Committee to build stakeholder engagement and help guide EWU towards sustainable practices

As EWU looks to 2040 and 2050, the reduction targets become more challenging to plan for strategically. To achieve a 70 percent reduction in GHG, and ultimately carbon neutrality, EWU may need to utilize technologies that are not yet available at appropriate scales. These technologies may be those that are currently cost prohibitive, unproven at scale, or still in the early stages of development.

EWU can begin to anticipate potential solutions and review opportunities, but have not set a specific pathway. Therefore, current planning for 2040 and 2050 is to assess and evaluate all carbon reduction options and find sustainable solutions. Strategies for these longer-range targets include:

- Work with EWU staff, faculty, and students to propose, research, and evaluate GHG reduction strategies
- Collaborate with industry experts to identify opportunities to transition EWU off of natural gas
- Investigate the role of carbon capture/sequestration from point source GHG emissions
- Electrify where possible
- Track and review emerging technologies/practices to reduce GHG emissions.
- Remain open to the dynamic and evolving changes in sustainable practices and technologies to achieve the long-term carbon reduction goals

EWU's Greenhouse Gas Emission Reduction Plan incorporates multiple strategies for reducing the campus's carbon footprint. Lucy Covington Leadership House will be designed in accordance with this plan's principles and will incorporate at least eleven of the best practices to reduce greenhouse gas emissions.

When considering greenhouse gas emissions, it is also important to look at the whole life cycle carbon of buildings. This includes not only operational energy, but also refrigerant emissions, emissions from material production, and end-of-life impacts. Reducing overall emissions means minimizing operational energy use while also finding carbon sinks for projects, such as biogenic carbon from sustainably harvested wood, site landscaping, biochar, or other materials.

The use of mass timber products, such as cross-laminated timber (CLT), sequesters large amounts of carbon. Extensive research into mass timber has demonstrated that this construction type can not only reduce embodied carbon emissions by some 80 percent compared to other construction types, but it is also fast to build, fire resistive, supports local economies, and creates a healthy interior environment.

D.6 DAHP AND TRIBAL NOTIFICATION LETTERS

As required by Executive Order 05-05, the University requested review of this project by the Department of Archaeology and Historic Preservation (DAPH) and local tribes.

The tribes that Eastern Washington University contacted fall within the federally recognized tribes of Washington and Idaho, as well as the Washington State Tribal Reservations and Draft Treaty Ceded Areas. Three tribes were contacted: the Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians, and the Coeur d'Alene Tribe. Correspondence and status of communications with DAHP and local tribes are included in Appendix C.

The University will comply with requirements of the Governor's Executive Order and consult with DAHP to review the project as required for state-funded projects.

The Lucy Covington Leadership House is not anticipated to affect cultural or historic resources; however, EWU will continue to coordinate with DAHP through design to avoid or mitigate potential effects.

D.7 AMERICANS WITH DISABILITIES ACT IMPLEMENTATION (EXECUTIVE ORDER 96-04)

The proposed project will comply with International Code Council (ICC) ANSI A117.1-2009 with Washington State Amendments - WAC 51-50. In addition to the ADA accessibility codes, the proposed facility will comply with the Revised Code of Washington (RCW) and Washington administrative code (WAC) requirements for barrier-free facilities, and the accessibility provisions of the Washington State amendments to the International Building Code.

D.8 GROWTH MANAGEMENT ACT COMPLIANCE (RCW 36.70A)

The Growth Strategies legislation of 1990 requires state agencies to comply with local land use regulations adopted pursuant to the Growth Management Act, which EWU acknowledges through the development of 2014 Campus Master Plan (due to be updated in 2024-2025. Environmental regulations, including the Growth Management Act and local, state, and federal laws and regulations (such as shoreline and wetlands), will be met. The project will comply with all planning regulations as required by RCW Chapter 36.70A.

D.9 INFORMATION REQUIRED BY RCW 43.88.0301(1)

The Lucy Covington Leadership House project is consistent with the EWU Campus Master Plan. No changes are proposed to the Campus Master Plan as a result of this project. This plan is consistent with City of Cheney zoning and Growth Management Act regulations.

D.10 OTHER CODES OR REGULATIONS

All construction will comply with the applicable version of the International Building Code that is adopted by the State of Washington and the City of Cheney at the time of permit intake, as well as its reference documentation:

> International Building Code (IBC) and Amendments – Chapter 51-50 WAC
> International Mechanical Code (MBC) and Amendments – Chapter 51-52 WAC
> International Fire Code (IFC) and Amendments – Chapter 51-54 WAC
> Uniform Plumbing Code (UPC) and Amendments – Chapters 51-56, 51-57 WAC
> Washington State Energy Code (WSEC)
> National Electric Code (NEC)
> Washington State Electrical - Chapter 296-46B WAC
> Energy Codes

The 2021 Washington Energy Code or subsequently adopted version will govern the design of the new Lucy Covington Leadership House Building. RCW 39.35 requires a life cycle cost analysis of energy costs be conducted when designing a facility of this size, including analysis of building envelope, HVAC, power, and lighting.

E. PROBLEMS THAT REQUIRE FURTHER STUDY

There are no known problems that require further study.

F. COMPONENTS THAT EXCEED EXISTING CODE

There are no known proposed components that exceed existing code.

G. PLANNED TECHNOLOGY INFRASTRUCTURE INVESTMENTS

The Eastern Washington University is exploring a New Geothermal Heating Plant, in addition to existing Physical Chilled Water Plant. EWU has invested heavily in this chilled water plant over the years, and it has the available capacity to serve this new Lucy Covington Leadership House building. In addition, there are pipe mains extremely close to the proposed building footprint. The project team will make use of this available source. In addition, the goal is to explore utilizing approximate 120 degree heating water for the new geothermal heating plant to reduce carbon footprint and reduce fossil fuel load of current campus steam system. New direct bury piping or tunnel construction will be required from central geothermal plant to proposed mechanical room location.

H. PLANNED SECURITY MEASURES

The Preferred Alternative includes the following planned security measures:

> Door hardware shall have access controls with remote lockdown capabilities.
> A blue phone is recommended in the near vicinity of the building. Blue phones on campus are used for mass notification and include infrastructure for video surveillance.
> The Fire Alarm system will also have a mass notification system.

Building access and security will be managed in a similar manner as existing adjacent academic buildings

I. COMMISSIONING

Systems commissioning, per Washington State requirements and EWU standards, will be incorporated into the project for all applicable systems. Enhanced Commissioning, requiring establishment of commissioning requirements early in the design phase, is recommended to ensure increased effectiveness of the process, and would earn LEED credit. Refer to Appendix D Electrical scope for more detailed information on Commissioning.

J. FUTURE PHASES OR FACILITIES

Section 03A has a detailed review of the future expansion alternative. This expansion would add approximately 13,000 gross square feet to the proposed design. It would include additional office and instructional program, allowing potential expansion and/ or relocation of the American Indian Studies program.

K. PROJECT MANAGEMENT & DELIVERY METHODS

K.1 PROJECT DELIVERY METHODS CONSIDERED

Eastern Washington University intends to employ the traditional Design/Bid/Build approach for this project. Previous major capital projects at EWU have been successfully executed within or under the allocated budget using this method. Its cost-effectiveness aligns well with the regional context and the construction administration capabilities available to EWU. Currently, there is no compelling reason for EWU to seek approval for an alternative delivery method under RCW 39.10.

K.2 PROJECT MANAGEMENT WITHIN THE AGENCY

Eastern Washington University's Construction and Planning Division will manage all aspects of the project from programming and initial budgeting of the proposed project to the initial selection of the project architect/engineer(A/E) consultant design team and throughout the subsequent design, bidding, construction, commissioning, and warranty phases.

The Construction and Planning Division will oversee the required contractual administration for the project A/E consultants and public works contractors. The Construction and Planning team is responsible for working closely with the university's administration, the design team, and the contractors to ensure the project is delivered on time and within budget.

TABLE:
Proposed Project Schedule

Project Schedule: Preferred Alternative			
PHASE	DURATION	START DATE	END DATE
Design / Construction Funding		**July 2025**	
Design	**12 mos.**	**November 2026**	**November 2027**
Construction	**12 mos.**	**November 2027**	**November 2028**
Move-In / FF&E	**3 mos.**	**November 2028**	**February 2029**
Occupancy		**February 2029**	

L. PROJECT SCHEDULE

L.1 HIGH-LEVEL MILESTONE PROJECT SCHEDULE

The anticipated project schedule for the Preferred Alternative is shown above, and assumes design funding is awarded in the 2025-27 Capital Budget and construction funding is awarded in the 2027-29 Capital Budget.

Design is slated to start in November 2026, with construction beginning in November 2027 and reaching substantial completion by November 2028. Building occupancy is anticipated in February 2029.

L.2 VALUE ENGINEERING & CONSTRUCTABILITY REVIEW

Value engineering analysis and constructibility review will be integrated into the design process. Time for this effort has been factored into the proposed project schedule.

L.3 SCHEDULE RISK FACTORS

There are no known unusual or extraordinary factors anticipated to pose a risk to the project schedule. During the design and construction phases, the project team will need to manage typical factors and processes that have the potential to impact schedule, such as entitlements and jurisdictional review time.

L.4 PERMITTING, ORDINANCE, OR NEIGHBORHOOD ISSUES

Buildings on EWU's campus are subject to the governing codes of the City of Cheney. During the design process, the University and design team will meet with City officials as required to ensure the project conforms with all City requirements.

L.5 JURISDICTIONAL PROCESS & COMMUNITY INVOLVEMENT

Regular engagement with the City of Cheney, to understand permitting requirements and identify any other ordinances that could impact schedule, will be arranged. The involvement of the stakeholders, such as a Steering Committee, American Indian Studies program faculty members, and Native American Student Association (NASA) members will continue throughout the design.

Section 05

PROJECT BUDGET ANALYSIS FOR PREFERRED ALTERNATIVE

A. Cost Estimate

B. Proposed Funding

C. Facility Operations and Maintenance

D. Furniture, Fixtures and Equipment

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SECTION 05

PROJECT BUDGET ANALYSIS FOR PREFERRED ALTERNATIVE

A. COST ESTIMATE

A construction cost estimate based on the Maximum Allowable Construction Cost (MACC) cost estimate was prepared by the consultant. The State of Washington's C-100 (2024) cost estimating model was used as the basis for this estimate, applying consultant and project management fees, contingencies, and escalation.

The Preferred Alternative project budget is $20,739,000, escalated based on the proposed project schedule. A construction cost summary is included on the following pages.

The State of Washington Form C-100 summary, which includes project and construction costs, is included later in this section. Additional cost detail is included in Appendix B, Detailed Cost Model.

A.1 MAJOR ASSUMPTIONS

The following assumptions were used as the basis for the construction cost estimate indicated below.

- Design, Bid, Build delivery method is assumed.
- Assumes a Q4, 2027 start and a 12-month schedule for the Preferred Alternative.
- Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

TABLE:
Construction Cost Estimate:
New Construction

A.2 COST ESTIMATE SUMMARY

A summary of the construction cost estimate for the Preferred Alternative is shown below and on the following page. A detailed cost estimate is included in Appendix B.

ESTIMATED COSTS SUMMARY

June 4, 2024

Item	Description	QTY	UOM	$ / UOM	Cost
1	BUILDING - PREFERRED OPTION	15,000	BGSF	$ 649.89	$ 9,748,406
2	SITEWORK	60,000	SGA	$ 29.77	$ 1,786,495
3	General Conditions & Support Services	12	MO	$ 75,000	$ 900,000
Total Estimated Construction Cost (Today's Dollars)					**$ 12,434,902**
4	Escalation to Midpoint (Q2, 2028)	16.00%	on	$ 12,434,902	$ 1,989,584
Total Construction Cost (Escalated)					**$ 14,424,486**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
G10	Site Preparation	60,000	SGA	$ 3.98	$ 238,960
G20	Site Improvements	60,000	SGA	$ 7.37	$ 441,992
G30	Site Civil / Mech Utilities	60,000	SGA	$ 4.49	$ 269,400
G40	Site Electrical Utilities	60,000	SGA	$ 6.60	$ 396,000
G50	Other Site Construction	60,000	SGA	$ 0.75	$ 45,000
SITEWORK SUBTOTAL					**$ 1,391,352**
	Design Contingency			20.00%	$ 278,270
	Subtotal				$ 1,669,622
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 116,874
	Subtotal				$ 1,786,495
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**60,000**	**SGA**	**$ 29.77**	**$ 1,786,495**

TABLE:
Form C-100 Summary

A.3 FORM C-100

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY
Updated June 2024

Agency	Eastern Washington University
Project Name	Lucy Covington Leadership House
OFM Project Number	40000071

Contact Information	
Name	Kris Jeske, Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske@ewu.edu

Statistics			
Gross Square Feet	15,000	MACC per Gross Square Foot	$829
Usable Square Feet	9,690	Escalated MACC per Gross Square Foot	$939
Alt Gross Unit of Measure			
Space Efficiency	64.6%	A/E Fee Class	B
Construction Type	Auditorium without stag	A/E Fee Percentage	8.23%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	5%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	January-23	Predesign End	June-24
Design Start	November-26	Design End	November-27
Construction Start	November-27	Construction End	November-28
Construction Duration	12 Months		

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Project Cost Summary

Total Project	$18,375,824	Total Project Escalated	$20,739,252
		Rounded Escalated Total	$20,739,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$0**
Next Biennium	**$0**
Out Years	**$20,739,000**

TABLE:
Project Budget

B. PROPOSED FUNDING

B.1 FUNDING SOURCES

The Lucy Covington Leadership House will be a fully State-funded project, with the exception of this Predesign Report.

B.2 DEBT SERVICE FOR ALTERNATIVE FINANCING

EWU is not proposing alternative financing for this project.

Agency / Institution Project Request	
Design / Construction Request, 2025-2027 Biennium	$20,739,000
Total Project Request	**$20,739,000**
Pre-Design Report (Non-State Funds)	$300,000
Total Project Funds	**$21,039,000**

TABLES:
Current Capital & Operating Costs
Capital & Operating Costs Over Five Biennia

TABLE 1 Operations	Operating Cost (GSF/YR)
Component:	**FY24**
091 Utilities	$3.77
092 Building Maintenance	$2.65
093 Custodial & Grounds	$3.45
094 Operations & Mgmt. Support	$3.62
Total Annual Cost per GSF	**$13.49**

TABLE 2 Operations	Operating Cost (GSF/YR)	29-31 Biennium		31-33 Biennium		33-35 Biennium		35-37 Biennium		37-39 Biennium	
Component:	**FY29**	**FY29**	**FY30**	**FY31**	**FY32**	**FY33**	**FY34**	**FY35**	**FY36**	**FY37**	**FY38**
091 Utilities	$4.38										
092 Building Maintenance	$3.07										
093 Custodial & Grounds	$4.01										
094 Operations & Mgmt. Support	$4.20										
Total Annual Cost per GSF	**$15.66**	**$234,900**	**$241,947**	**$249,205**	**$256,682**	**$264,382**	**$272,313**	**$280,483**	**$288,897**	**$297,564**	**$306,491**
Building Area (GSF)	15,000										
10-Year Total Cost											**$2,692,865**

C. OPERATIONS & MAINTENANCE REQUIREMENTS

C.1 OPERATING BUDGET IMPACT

The projected annual operating budget for the first year of operation in FY2029 is $234,900. The budget will cover utilities, groundskeeping, pest control and other site maintenance, along with general building maintenance that includes security and telecommunications support.

Other costs include building operation permits for the building and components, such as elevator and pressure vessels, and specialized maintenance service contracts, such as elevators and fire sprinkler testing. The budget will also include general management of the facility, moving costs for the first year, and subsequent moving expenses throughout the life of the building.

C.2 CAPITAL & OPERATING COSTS

The first biennium at building occupancy is FY29-31. The operating and maintenance cost, including building preservation and replacement based on funding, is $234,900 for FY29. Escalation from that point is assumed at 3.00 percent per year.

Total capital and operating costs for the five biennia amount to approximately $2.7 million.

C.3 MAINTENANCE & OPERATIONS AGENCY

The Lucy Covington Leadership House will receive EWU's current campus level of custodial services and building utilities maintenance. Current and future operations and maintenance costs will be funded from EWU's normal operations and maintenance funding.

Current campus operations and maintenance costs for FY24 are shown in Table 1 above. For the Lucy Covington Leadership House, the projected operations and maintenance costs for the first full year of occupancy (FY2029) are $234,900. Table 2 shows projected costs for FY29 through FY38.

D. FURNITURE, FIXTURES & EQUIPMENT

Estimated funds for furniture, fixtures, and equipment are included in the project budget.

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Section 06

APPENDICES

A. Predesign Checklist

B. Cost Analysis

C. DAHP & Tribal Correspondence

D. Project Detail

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SECTION 06

APPENDICES

SECTION 06

APPENDIX A: PREDESIGN CHECKLIST

EXECUTIVE SUMMARY

PROBLEM STATEMENT, OPPORTUNITY, OR PROGRAM REQUIREMENT

- ☒ Identify the problem, opportunity or program requirement that the project addresses and how it will be accomplished.
- ☒ Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location or physical accommodations. Include anticipated caseload projections (growth or decline) and assumptions, if applicable.
- ☒ Explain the connection between the agency's mission, goals and objectives; statutory requirements; and the problem, opportunity or program requirements.
- ☒ Describe in general terms what is needed to solve the problem.
- ☒ Include any relevant history of the project, including previous predesigns or budget funding requests that did not go forward to design or construction.

ANALYSIS OF ALTERNATIVES (INCLUDING THE PREFERRED ALTERNATIVE)

- ☒ Describe all alternatives that were considered, including the preferred alternative. Include:
  - ☒ A no action alternative.
  - ☒ Advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis that compares the alternatives, including the anticipated cost for each alternative.
  - ☒ Cost estimates for each alternative:
    - ☒ Provide enough information so decision makers have a general understanding of the costs.
    - ☒ Complete OFM's Life Cycle Cost Model (RCW 39.35B.050).
  - ☒ Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.

DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

- ☒ Nature Of Space
  - ☒ Community Gathering Areas
  - ☒ American Indian Student Center
- ☒ Occupancy
- ☒ Basic configuration of the building, including square footage and the number of floors.
- ☒ Space needs assessment. Identify the guidelines used.
- ☒ Site Analysis
  - ☒ Identify site studies that are completed or under way and summarize their results.
  - ☒ Location.
  - ☒ Building footprint and its relationship to adjacent facilities and site features. Provide aerial view, sketches of the building site and basic floor plans.
  - ☒ Water rights and water availability.
  - ☒ Stormwater requirements.
  - ☒ Ownership of the site, easements, and any acquisition issues.
  - ☒ Property setback requirements.
  - ☒ Potential issues with the surrounding neighborhood, during construction and ongoing.
  - ☒ Utility extension or relocation issues.
  - ☒ Potential environmental impacts.
  - ☒ Parking and access issues, including improvements required by local ordinances, local road impacts and parking demand.
  - ☒ Impact on surroundings and existing development with construction lay-down areas and construction phasing.
- ☒ Consistency With Applicable Long-Term Plans
- ☒ Consistency with other laws and regulations:
  - ☒ High-performance public buildings (Chapter 39.35D RCW).

- ☒ State efficiency and environmental performance, if applicable (Executive Order 20-01).
- ☒ State energy standards for clean buildings (RCW 19.27A.210).
- ☒ Compliance with required vehicle charging capability for new buildings that provide on-site parking (RCW 19.27.540).
- ☒ Greenhouse gas emissions reduction policy (RCW 70.235.070).
- ☒ Archaeological and cultural resources (Executive Order 05-05 and Section 106 of the National Historic Preservation Act of 1966).
- ☒ Americans with Disabilities Act (ADA) implementation (Executive Order 96-04).
- ☒ Compliance with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.
- ☒ Information required by RCW 43.88.0301(1).
- ☒ Other codes or regulations.

☒ Identify problems that require further study. Evaluate identified problems to establish probable costs and risk.

☒ Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.

☒ Identify planned technology infrastructure and other related IT investments that affect the building plans.

☒ Identify any site-related and/or physical security measures for the project.

☒ Describe planned commissioning to ensure systems function as designed.

☒ Describe any future phases or other facilities that will affect this project.

☒ Provide a comparative discussion of the pros and cons of the project delivery methods considered for this project and offer a recommendation of proposed procurement method for the preferred alternative.

☒ Describe how the project will be managed within the agency.

☒ Schedule.

- ☒ Provide a high-level milestone schedule for the project, including key dates for budget approval, design, bid, acquisition, construction, equipment installation, testing, occupancy and full operation.
- ☒ Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).
- ☒ Describe factors that may delay the project schedule.
- ☒ Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
- ☒ Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are a part of the process.

PROJECT BUDGET ANALYSIS FOR THE PREFERRED ALTERNATIVE

☒ Cost estimate.

- ☒ Major assumptions used in preparing the cost estimate.
- ☒ Summary table of Uniformat Level II cost estimates.
- ☒ The C-100.

☒ Proposed funding.

- ☒ Identify the fund sources and expected receipt of the funds.

N/A If alternatively financed, such as through a COP, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.

☒ Facility operations and maintenance requirements.

- ☒ Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs) and moving costs.
- ☒ Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repair, replacement and maintenance.
- ☒ Identify the agency responsible for ongoing maintenance and operations, if not maintained by the owner.

☒ Clarify whether furniture, fixtures and equipment are included in the project budget. If not included, explain why.

PREDESIGN APPENDICES

☒ A. Predesign Checklist.

☒ B. Completed Life Cycle Cost Model.

☒ C. DAHP Letter.

N/A Title report for projects including proposed acquisition.

SECTION 06

APPENDIX B: COST ANALYSIS

B.1 FORM C-100

The complete Form C-100 is included on the following pages.

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Lucy Covington Leadership House
OFM Project Number	40000071

Contact Information	
Name	Kris Jeske, Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske@ewu.edu

Statistics			
Gross Square Feet	15,000	MACC per Gross Square Foot	$829
Usable Square Feet	9,690	Escalated MACC per Gross Square Foot	$939
Alt Gross Unit of Measure			
Space Efficiency	64.6%	A/E Fee Class	B
Construction Type	Auditorium without stag	A/E Fee Percentage	8.23%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	5%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	January-23	Predesign End	June-24
Design Start	November-26	Design End	November-27
Construction Start	November-27	Construction End	November-28
Construction Duration	12 Months		

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Project Cost Summary

Total Project	$18,375,824	Total Project Escalated	$20,739,252
		Rounded Escalated Total	$20,739,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$0**
Next Biennium	**$0**
Out Years	**$20,739,000**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$285,000		
Design Phase Services	$986,448		
Extra Services	$730,000		
Other Services	$383,114		
Design Services Contingency	$119,228		
Consultant Services Subtotal	**$2,503,790**	**Consultant Services Subtotal Escalated**	**$2,764,952**

Construction			
Maximum Allowable Construction Cost (MACC)	$12,434,902	Maximum Allowable Construction Cost (MACC) Escalated	$14,088,025
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$621,745		$706,054
Non-Taxable Items	$0		$0
Sales Tax	$1,162,115	Sales Tax Escalated	$1,316,757
Construction Subtotal	**$14,218,762**	**Construction Subtotal Escalated**	**$16,110,836**

Equipment			
Equipment	$520,000		
Sales Tax	$46,280		
Non-Taxable Items	$0		
Equipment Subtotal	**$566,280**	**Equipment Subtotal Escalated**	**$643,068**

Artwork			
Artwork Subtotal	**$103,180**	**Artwork Subtotal Escalated**	**$103,180**

Agency Project Administration			
Agency Project Administration Subtotal	$813,811		
DES Additional Services Subtotal	$65,000		
Other Project Admin Costs	$105,000		
Project Administration Subtotal	**$983,811**	**Project Administration Subtotal Escalated**	**$1,117,216**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$18,375,824**	Total Project Escalated	**$20,739,252**
		Rounded Escalated Total	**$20,739,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$2,761,975	$300,000	$2,400,000	$61,975	**$0**
Construction					
Construction Subtotal	$16,093,773			$16,093,773	**$0**
Equipment					
Equipment Subtotal	$642,389			$642,389	**$0**
Artwork					
Artwork Subtotal	$103,071			$103,071	**$0**
Agency Project Administration					
Project Administration Subtotal	$1,116,036			$1,116,036	**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$20,717,244**	**$300,000**	**$2,400,000**	**$18,017,244**	**$0**
	$20,717,000	**$300,000**	**$2,400,000**	**$18,017,000**	**$0**
	Percentage requested as a new appropriation		**12%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Consultant Services for Design and Construction Documents
Insert Row Here

What has been completed or is underway with a previous appropriation?
Predesign Report was underway and completed in the 2023-2025 Biennium.
Insert Row Here

What is planned with a future appropriation?
Remaining Consultant Services, Construction, Equipment, Artwork and Project Administration.
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$285,000			
Other				
Insert Row Here				
Sub TOTAL	**$285,000**	**1.0800**	**$307,800**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$741,448			69% of A/E Basic Services
Specialty & Site design	$195,000			New Master Plan coord
Tribal Coordination	$50,000			GEO2102
Sub TOTAL	**$986,448**	**1.0978**	**$1,082,923**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$30,000			
Geotechnical Investigation	$25,000			
Commissioning	$50,000			
Site Survey	$5,000			
Testing	$10,000			
LEED Services	$45,000			
Voice/Data Consultant	$20,000			
Value Engineering	$15,000			
Constructability Review	$10,000			
Environmental Mitigation (EIS)	$5,000			
Landscape Consultant	$65,000			
Lighting Consultant	$30,000			
Audiovisual Consultant	$10,000			
Interior Design	$95,000			
Building Envelope Consultant	$45,000			
Value Engineering Support	$10,000			
Constructability Participation	$5,000			
Energy Life Cycle Cost Analysis	$10,000			
Life Cycle Cost Analysis	$35,000			
Models & Renderings	$15,000			
Full Fire Protection Design	$10,000			
Environmental Consulting	$45,000			
Reimbursable Expenses	$15,000			
Cultural Design Consulting	$125,000			
Sub TOTAL	**$730,000**	**1.0978**	**$801,394**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$333,114			31% of A/E Basic Services
HVAC Balancing	$25,000			
Staffing				

Comissioning Support	$20,000			
Cultural Design Construction Review	$5,000			
Sub TOTAL	**$383,114**	**1.1344**	**$434,605**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$119,228			
Other				
Insert Row Here				
Sub TOTAL	**$119,228**	**1.1344**	**$135,253**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$2,503,790**		**$2,761,975**	

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$238,960			
G20 - Site Improvements	$441,992			
G30 - Site Mechanical Utilities	$269,400			
G40 - Site Electrical Utilities	$396,000			
G60 - Other Site Construction	$45,000			
Design Cont	$278,270			
OP	$116,874			
Sub TOTAL	**$1,786,496**	**1.1159**	**$1,993,551**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1159**	**$0**	
3) Facility Construction				
A10 - Foundations	$345,147			
A20 - Basement Construction	$0			
B10 - Superstructure	$1,213,750			
B20 - Exterior Closure	$1,227,080			
B30 - Roofing	$577,884			
C10 - Interior Construction	$638,850			
C20 - Stairs	$0			
C30 - Interior Finishes	$617,498			
D10 - Conveying	$0			
D20 - Plumbing Systems	$318,685			
D30 - HVAC Systems	$1,181,064			
D40 - Fire Protection Systems	$75,000			
D50 - Electrical Systems	$875,545			
F10 - Special Construction	$0			
F20 - Selective Demolition	$0			
General Conditions	$900,000			
Built in Equipment/Casework	$521,714			
Design Cont	$1,518,443			
O&P	$637,746			
Sub TOTAL	**$10,648,406**	**1.1344**	**$12,079,552**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$12,434,902**		**$14,073,103**	
	$829		*$938 per GSF*	

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7) Owner Construction Contingency				
Allowance for Change Orders	$621,745			
Other				
Insert Row Here				
Sub TOTAL	**$621,745**	**1.1344**	**$705,308**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1344**	**$0**	
9) Sales Tax				
Sub TOTAL	**$1,162,115**		**$1,315,362**	
CONSTRUCTION CONTRACTS TOTAL	**$14,218,762**		**$16,093,773**	

Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings	$250,000				
F10 - Special Construction	$150,000				
IT Equip/computers/printers	$120,000				Design & Construction
Sub TOTAL	**$520,000**		**1.1344**	**$589,888**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.1344**	**$0**	
3) Sales Tax					
Sub TOTAL	**$46,280**			**$52,501**	
EQUIPMENT TOTAL	**$566,280**			**$642,389**	

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$103,071				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$103,071**		**NA**	**$103,071**	

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$813,811				
Additional Services	$65,000				Tribal Coord.
EWU Tribal Liaison	$55,000				Design & const. support
Specialty construction	$50,000				
Subtotal of Other	*$105,000*				
PROJECT MANAGEMENT TOTAL	**$983,811**		**1.1344**	**$1,116,036**	

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1159**	**$0**	

SECTION 06

APPENDIX B: COST ANALYSIS

B.2 OFM LIFE CYCLE COST MODEL

The Life Cycle Cost Model summary is included on the following pages.

Lease Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

* **New Lease Option 1 Description**	

	New Lease Information			
*	Lease Location	Cheney	Market Area:	Eastern Washington
*	Lease Square Feet Type			
*	New Facility Square Feet	15,000		
*	New Lease Start Date	8/1/2028		
	SF per Person Calculated	17		

	New Lease Costs	**Years of Term**	**Rate / SF / Year**	**Rate / Month**	**Adjusted to FS Rate**	**Total FS Rate / Month**	**Estimated FSG Market Rate**	**Estimated FSG Rate / Month**	**Real Estate Transaction Fees for Term**
*	Years 1 - 5	5				$ 38,897	$ 31.12	$ 38,897	$ 52,060
	Years 6 - 10	5				$ 44,509	$ 35.61	$ 44,509	$ 30,238
	Years								
	Years								
	Years								
	Total Length of Lease	10							$ 82,298
	Transaction Fee for first 5 Years	2.50%	*of total rent for first 5 years of term*						
	Transaction Fee for Additional Years	1.25%	*of total rent for term beyond 5 years*						

Note: Real estate transaction fees calculated on base lease - not full service rate including added services and utilities.

Added Services	**New Lease Operating Costs (Starting in current year)**	**Known Cost / SF / Year**	**Estimated Cost / SF / Year in 2028 -**	**Total Cost / Year**	**Cost / Month**
☑	Energy (Electricity, Natural Gas)	$ 0.99	$ 1.18	$ 14,850	$ 1,238
☑	Janitorial Services	$ 1.49	$ 1.73	$ 22,317	$ 1,860
☑	Utilities (Water, Sewer, & Garbage)	$ 0.39	$ 0.45	$ 5,805	$ 484
☑	Grounds	$ 0.06	$ 0.07	$ 930	$ 78
☑	Pest Control	$ 0.09	$ 0.11	$ 1,419	$ 118
☑	Security	$ 0.09	$ 0.11	$ 1,419	$ 118
☑	Maintenance and Repair	$ 5.84	$ 6.79	$ 87,591	$ 7,299
☑	Management	$ 0.88	$ 1.02	$ 13,158	$ 1,097
☑	Road Clearance	$ 0.14	$ 0.16	$ 2,064	$ 172
☑	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 9.97**	**$ 11.61**	**$ 149,553**	**$ 12,463**

Escalated to lease start date

	New Lease One Time Costs	**Current Estimate**	**Calculated (for reference)**	
*	Real Estate Transaction Fees		$ 82,298	*Per Std %*
*	Tenant Improvements		$ 225,000	*$150 per SF*
*	IT Infrastructure		$ 315,000	*$1500 per Person*
*	Furniture Costs		$ 450,000	*$7000 per Person*
*	Building Security and Access Systems			*$450 per person*
*	Moving Vendor and Supplies		$ 184,500	*$300 per Person*
	Other / Incentive			
	Total	$ -	$ 1,256,798	

Biennium Budget Impacts for New Lease	**Biennium Time Period**		**Existing Lease Option**	**New Lease Option 1**	**Biennium Impact:**
	Start	**Finish**			
25-27 Biennium Lease Expenditure	7/1/2025	6/30/2027	$ -	$ -	$ -
27-29 Biennium Lease Expenditure	7/1/2027	6/30/2029	$ -	$ 427,871	$ 427,871
29-31 Biennium Lease Expenditure	7/1/2029	6/30/2031	$ -	$ 933,537	$ 933,537
31-33 Biennium Lease Expenditure	7/1/2031	6/30/2033	$ -	$ 933,537	$ 933,537
33-35 Biennium Lease Expenditure	7/1/2033	6/30/2035	$ -	$ 1,062,597	$ 1,062,597

Ownership Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Lucy Covington Leadership House Preferred Option
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	15,000
*	Usable Sq Ft	9,690
	Space Efficiency	65%
	Estimated Acres Needed	2.00
	MACC Cost per Sq Ft	$768.99
	Estimated Total Project Costs per Sq Ft	$1,050.42
	Escalated MACC Cost per Sq Ft	$856.53
	Escalated Total Project Costs per Sq Ft	$1,169.99

*	**Move In Date**	11/1/2028

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 500,000	$ 500,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	10.06%	7.68% Std	10.06%
	Pre-Schematic Design services			
	Construction Documents			
	Extra Services			
	Other Services			
	Design Services Contingency			
	Consultant Services Total	$ 1,160,411	$ 869,788	$ 1,160,411
MACC	**Construction Contracts**			
	Site Work	$ 1,786,495		
	Related Project Costs			
	Facility Construction	$ 9,748,406		
	MACC SubTotal	$ 11,534,901	$ 5,428,200	$ 11,534,901
	Construction Contingency (5% default)		$ 576,745	$ 576,745
	Non Taxable Items			$ -
	Sales Tax		$ 1,026,606	$ 1,026,606
	Construction Additional Items Total	$ -	$ 1,603,351	$ 1,603,351
	Equipment			
	Equipment			
	Non Taxable Items			
	Sales Tax			
	Equipment Total	$ -		$ -
	Art Work Total		$ 57,675	$ 57,675
	Other Costs			
	General Conditions and Support Services	$ 900,000		
	Other Costs Total	$ 900,000		$ 900,000
	Project Management Total			$ -
	Grand Total Project Cost	**$ 13,595,312**	**$ 8,459,014**	**$ 15,756,338**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ 205,502	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ 205,502	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2028	Estimated Cost /GSF/ 2028	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ -	$ 1.18	$ 17,679	$ 1,473
☑	Janitorial Services	$ -	$ 1.73	$ 25,917	$ 2,160
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 0.45	$ 6,694	$ 558
☑	Grounds	$ -	$ 0.07	$ 1,030	$ 86
☑	Pest Control	$ -	$ 0.11	$ 1,716	$ 143
☑	Security	$ -	$ 0.11	$ 1,716	$ 143
☑	Maintenance and Repair	$ -	$ 6.79	$ 101,782	$ 8,482
☑	Management	$ -	$ 1.02	$ 15,276	$ 1,273
☑	Road Clearance	$ -	$ 0.16	$ 2,403	$ 200
☑	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ 11.61**	**$ 174,214**	**$ 14,518**

SECTION 06

APPENDIX B: COST ANALYSIS

B.3 DETAILED COST MODEL

A detailed cost model for the Preferred Alternative is included on the following pages.

Owner: **Eastern Washington University**
Project: **Lucy Covington Leadership House**

ESTIMATED COSTS SUMMARY

June 4, 2024

Item	Description	QTY	UOM	$ / UOM	Cost
1	BUILDING - PREFERRED OPTION	15,000	BGSF	$ 649.89	$ 9,748,406
2	SITEWORK	60,000	SGA	$ 29.77	$ 1,786,495
3	General Conditions & Support Services	12	MO	$ 75,000	$ 900,000
Total Estimated Construction Cost (Today's Dollars)					**$ 12,434,902**
4	Escalation to Midpoint (Q2, 2028)	16.00%	on	$ 12,434,902	$ 1,989,584
Total Construction Cost (Escalated)					**$ 14,424,486**

Eastern Washington University
Lucy Covington Leadership House
Conceptual Estimate - Preferred Option

Project Owner:	**Eastern Washington University**	**Architect:**	Womer & Assoc.
Project Name:	**Lucy Covington Leadership House**	**Project Duration:**	12 MO
Project Location:	Cheney, WA	**Building GSF:**	15,000
Project Start Date:	Q4, 2027	**Site GSF:**	60,000
Estimate Date:	June 4, 2024		

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
A10	Foundations	15,000	BGSF	$ 23.01	$ 345,147
A20	Basement Construction	15,000	BGSF	$ -	$ -
B10	Superstructure	15,000	BGSF	$ 80.92	$ 1,213,750
B20	Exterior Enclosure	15,000	BGSF	$ 81.81	$ 1,227,080
B30	Roofing	15,000	BGSF	$ 38.53	$ 577,884
C10	Interior Construction	15,000	BGSF	$ 42.59	$ 638,850
C20	Stairs	15,000	BGSF	$ -	$ -
C30	Interior Finishes	15,000	BGSF	$ 41.17	$ 617,498
D10	Conveying Systems	15,000	BGSF	$ -	$ -
D20	Plumbing	15,000	BGSF	$ 21.25	$ 318,685
D30	HVAC	15,000	BGSF	$ 78.74	$ 1,181,064
D40	Fire Protection	15,000	BGSF	$ 5.00	$ 75,000
D50	Electrical	15,000	BGSF	$ 58.37	$ 875,545
E10	Equipment	15,000	BGSF	$ 22.33	$ 335,000
E20	Casework & Furnishings	15,000	BGSF	$ 12.45	$ 186,714
F10	Special Construction	15,000	BGSF	$ -	$ -
F20	Selective Demolition	15,000	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 7,592,217**
	Design Contingency			20.00%	$ 1,518,443
	Subtotal				$ 9,110,660
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 637,746
	Subtotal				$ 9,748,406
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**15,000**	**BGSF**	**$ 649.89**	**$ 9,748,406**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

Eastern Washington University
Lucy Covington Leadership House
Conceptual Estimate - Sitework Preferred Option

ROEN ASSOCIATES

Project Owner:	**Eastern Washington University**	**Architect:**	Womer & Assoc.
Project Name:	**Lucy Covington Leadership House**	**Project Duration:**	12 MO
Project Location:	Cheney, WA	**Building GSF:**	15,000
Project Start Date:	Q4, 2027	**Site GSF:**	60,000
Estimate Date:	June 4, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	60,000	SGA	$ 3.98	$ 238,960
G20	Site Improvements	60,000	SGA	$ 7.37	$ 441,992
G30	Site Civil / Mech Utilities	60,000	SGA	$ 4.49	$ 269,400
G40	Site Electrical Utilities	60,000	SGA	$ 6.60	$ 396,000
G50	Other Site Construction	60,000	SGA	$ 0.75	$ 45,000
SITEWORK SUBTOTAL					**$ 1,391,352**
	Design Contingency			20.00%	$ 278,270
	Subtotal				$ 1,669,622
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 116,874
	Subtotal				$ 1,786,495
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**60,000**	**SGA**	**$ 29.77**	**$ 1,786,495**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

SECTION 06

APPENDIX C: DAHP & TRIBAL CORRESPONDENCE

C.1 STATUS OF TRIBAL LIAISON

Eastern Washington coordinated with the Department of Archaeology and Historic Preservation (DAHP) to verify and confirm tribes to contact regarding the Lucy Covington Leadership House.

The tribes that EWU was required to contact fall within the Federally Recognized Tribes of Washington State and the Washington State Tribal Reservations and Draft Treaty Ceded Areas.

The following tribes were contacted:

> Confederated Tribes of the Colville Reservation

> Coeur d'Alene Tribe

> Spokane Tribe of Indians

C.2 DAHP CORRESPONDENCE

Correspondence from DAHP regarding the Lucy Covington Leadership House Predesign is included on the following page.

C.3 TRIBAL CORRESPONDENCE

Correspondence regarding the Lucy Covington Leadership House Predesign was sent to the tribal representatives listed below. Letters to each tribe are included on the following pages.

> **Confederated Tribes of the Colville Reservation**

Guy Moura,
Tribal Historic Preservation Officer

> **Coeur d'Alene Tribe**

Jill Maria Wagner, PHD,
Tribal Historic Preservation Officer

> **Spokane Tribe of Indians**

Randy Abrahamson,
Tribal Historic Preservation Officer

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 13, 2024

Troy Bester
Senior Project Manager
Construction and Planning Services, EWU

In future correspondence please refer to:
Project Tracking Code: 2024-06-04182
Property: Lucy Covington Leadership House - EWU Cheney Campus
Re: No Historic Resources Impacted

Dear Troy:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Officer (SHPO) under provisions of Governor's Executive Order 21-02. Our review is based upon documentation provided in your submittal. Please note this review is for the predesign phase of the project only.

It is our opinion that no historic resources will be impacted by the current project as proposed.

As a result of our opinion, further contact with DAHP on this proposal is not necessary. However, if new information about affected resources becomes available and/or the project scope of work changes significantly, please resume consultation as our assessment may be revised. Also, if any archaeological resources are uncovered during construction, please halt work immediately in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

State of Washington • **Department of Archaeology & Historic Preservation**
P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065
www.dahp.wa.gov

EASTERN WASHINGTON UNIVERSITY

Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Mr. Guy Moura
Tribal Historic Preservation Officer
Confederated Tribes of the Colville Reservation

RE: Propose Project at Eastern Washington University
Lucy Covington Leadership House
EWU Project No. CP1112

Mr. Moura,

This letter is to notify you of a proposed project, Lucy Covington Leadership Center, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

The building is proposed as a single-story structure totaling approximately 15,000 gross square feet. The Lucy Covington Leadership House will be a center to support the success of Native American students at the university and beyond. It will provide a location focused on creating a sense of community for these students allowing for an easier transition from their home to the university setting. The facility brings together cultural/community gathering & event spaces, student collaboration & support spaces, and exhibit gallery & performance spaces.

The initial site proposed for construction will be located entirely on the previously disturbed ground of the demolished Reid Laboratory School. Reid School was demolished in 2016. Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving parking and landscaping. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

Troy Bester
Senior Project Manager

Attachments:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

EASTERN WASHINGTON UNIVERSITY
Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Jill Maria Wagner, PhD
Tribal Historic Preservation Officer
Coeur d'Alene Tribe

RE: Propose Project at Eastern Washington University
Lucy Covington Leadership House
EWU Project No. CP1112

Dear Dr. Wagner,

This letter is to notify you of a proposed project, Lucy Covington Leadership Center, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

The building is proposed as a single-story structure totaling approximately 15,000 gross square feet. The Lucy Covington Leadership House will be a center to support the success of Native American students at the university and beyond. It will provide a location focused on creating a sense of community for these students allowing for an easier transition from their home to the university setting. The facility brings together cultural/community gathering & event spaces, student collaboration & support spaces, and exhibit gallery & performance spaces.

The initial site proposed for construction will be located entirely on the previously disturbed ground of the demolished Reid Laboratory School. Reid School was demolished in 2016. Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving parking and landscaping. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

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Sincerely,

Troy Bester
Senior Project Manager

Attachments:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

EASTERN WASHINGTON UNIVERSITY
Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Mr. Randy Abrahamson
Tribal Historic Preservation Officer
Spokane Tribe of Indians

RE: Propose Project at Eastern Washington University
Lucy Covington Leadership House
EWU Project No. CP1112

Mr. Abrahamson,

This letter is to notify you of a proposed project, Lucy Covington Leadership Center, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

The building is proposed as a single-story structure totaling approximately 15,000 gross square feet. The Lucy Covington Leadership House will be a center to support the success of Native American students at the university and beyond. It will provide a location focused on creating a sense of community for these students allowing for an easier transition from their home to the university setting. The facility brings together cultural/community gathering & event spaces, student collaboration & support spaces, and exhibit gallery & performance spaces.

The initial site proposed for construction will be located entirely on the previously disturbed ground of the demolished Reid Laboratory School. Reid School was demolished in 2016. Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving parking and landscaping. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

Troy Bester
Senior Project Manager

Attachment:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

SECTION 06

APPENDIX D: PROJECT DETAIL

D.1 DETAILED NUMERIC SPACE PROGRAM

LUCY COVINGTON LEADERSHIP HOUSE: NUMERIC PROGRAM SUMMARY

PREFERRED ALTERNATIVE

PROGRAM AREA		NSF	% of NSF
COMMUNITY GATHERING AREAS			
Speaking Hall		5,100	*52.6%*
AMERICAN INDIAN STUDENT CENTER			
Learning Commons		1,800	*18.6%*
Dining Area		1,550	*16.0%*
Flexible Meeting Space		240	*2.5%*
EXHIBITION AREAS			
Lucy Covington Life & Legacy Gallery		1,000	*10.3%*
Total Assignable Square Feet (NASF)		***9,690***	
UNASSIGNABLE AREAS	*% of GSF*		
Building Support	*6.1%*	910	
Building Systems	*8.0%*	1,200	
Circulation / Walls	*21.3%*	3,200	
Subtotal - Unassignable Areas	*35.4%*	*5,310*	
Total Building Area		**15,000**	
Building Efficiency		**65%**	

TABLE:
Detailed Numeric Space Program

LUCY COVINGTON LEADERSHIP HOUSE: DETAILED NUMERIC PROGRAM

Preferred Alternative

Program Area	Proposed Program					
	Net Square Feet					
	staff	rm	sp gen	nsf	nsf/rm	total nsf
COMMUNITY GATHERING AREAS						
Speaking Hall						
Auditorium		1	300 seats	15	4,500.0	4,500
- Prefunction Area			*shared with community dining area*			
- A/V Support		1	1 rm	150	150.0	150
- Green Room		1	5 seats	30	150.0	150
- Table & Chair Storage		1	1 rm	300	300.0	300
Subtotal: Speaking Hall						***5,100***
Subtotal: Community Gathering Areas						***5,100***
AMERICAN INDIAN STUDENT CENTER						
Learning Commons						
Study Lounge		1	40 seats	25	1,000.0	1,000
Small Group Collaboration		4	4 sta	25	100.0	400
Makerspace/Open Work Area		1	16 seats	25	400.0	400
Subtotal: Learning Commons						*1,800*
Dining Area						
Community Kitchen		1	1 rm	300	300.0	300
Community Dining Area		1	50 seats	25	1,250.0	1,250
Subtotal: Dining						*1,550*
Flexible Meeting Space						
Drop-In Counselling and private study		2	1 rm	120	120.0	240
Subtotal: Flexible meeting space						*240*
Subtotal: American Indian Student Center						***3,590***
EXHIBITION AREAS						
Lucy Covington Life & Legacy Gallery						
Exhibit Gallery / Entry Reception		1	40 seats	25	1,000.0	*1,000*
- Storytelling Area (music, film, dance)						*use Speaker Hall*
Subtotal: Lucy Covington Life & Legacy Gallery						***1,000***
Subtotal: Exhibition Areas						***1,000***
Total Assignable Area						***9,690***

TABLE:
Detailed Numeric Space Program, Continued

LUCY COVINGTON LEADERSHIP HOUSE: DETAILED NUMERIC PROGRAM

Preferred Alternative

	Proposed Program					
			Net Square Feet			
Program Area	staff	rm	sp gen	nsf	nsf/rm	total nsf
UNASSIGNABLE AREAS						
Building Support						
Gender-Inclusive Restroom		2	4 stalls	60	240	480
Family / Private Restroom		1	1 rm	60	60	60
Individual Wellness / Lactation Room		1	1 rm	60	60	60
Custodial Closet		1	1 rm	60	60	60
Custodial Storage		1	1 rm	100	100	100
Building Storage		1	1 rm	150	150	150
Subtotal - Building Support					*6.1%*	*910*
Building Systems						
Mechanical / Plumbing					*6.0%*	900
Electrical / Telecommunications					*2.0%*	300
Subtotal - Building Systems					*8.0%*	*1,200*
Circulation / Walls						
Circulation					*13.3%*	2,000
Interior / Exterior Walls & Shafts					*8.0%*	1,200
Subtotal - Circulation / Walls					*21.3%*	*3,200*
Subtotal - Unassignable Areas					***35.4%***	***5,310***
Total Building Area (GSF)						***15,000***

D.2 ARCHITECTURAL BASIS OF DESIGN NARRATIVE

PROJECT DESCRIPTION

Construction of a new 1 story community gathering, student center and exhibit hall building at Eastern Washington University. The selected site for the Predesign analysis was the Reid Hall site immediately south of Martin Williamson Hall.

JURISDICTION

Anticipated Applicable Codes:

> Building: 2021 International Building Code, with Washington State Amendments, Chapter 51-50 WAC.

> Mechanical: 2021 International Mechanical Code, Chapter 51-52 WAC.

> Plumbing: 2018 Uniform Plumbing Code, Chapter 51-56 and 51-57 WAC.

> Electrical: 2020 National Electric Code (NFPA 70), Chapter 296-46B WAC.

> Fire: 2018 Washington State Fire Code, with Washington State Amendments

> Energy Code: 2021 International Energy Conservation Code (IECC) and Amendments, Chapters 51-11C and 51-11R WAC.

> Accessibility: ICC A117.1-2017 Standard for Accessible and Usable Buildings and Facilities.

> Building height and other planning regulations are governed by City of Cheney Municipal Code and Title 21 Zoning.

The project is required to submit for the State Environmental Policy Act (SEPA).

The roughly 15,000 sf building will be mixed occupancy of Assembly Group A3 as defined by the International Building Code (IBC). The building will be fully NFPA 13 sprinklered.

Construction Type: V-B

Allowable Building Height based on Construction Type: 60'

TABLE:
Minimum R-Values & U-Values for Exterior Component Type

Component	2021 WSEC
Foundation	R-10 for 2 ft
Basement Wall	R-13 batt + R10
Exterior Walls	R-13 batt + R10
Exterior Soffits	R-38 batt + R10
Roof	R-38 ci
Glazing	U-0.34
Glazing %	30% max
Doors	U-0.34 (glazed)
HVAC	Calculated

Allowable number of Stories above Grade: 2

Allowable area per floor (A-3 occupancy): 24,000 (S1-single story), 18,000 (multi-story) 38,000 (S1-single story)

Fire-resistance rated construction is largely not anticipated. The exception will be shafts and egress stairs.

GREEN BUILDING STANDARD

LEEDv4 Certified Silver BD+C minimum, Certified Gold BD+C preferred:

> Website: https://www.usgbc.org/resources/leed-v4-building-design-and-construction-current-version

Washington State Clean Buildings Act alignment:

> Website: https://www.commerce.wa.gov/growing-the-economy/energy/buildings

BUILDING SYSTEMS AND COMPONENTS

BUILDING ENVELOPE

A continuous self-adhered air and weather resistive barrier will cover the entire exterior sheathing. Thermal bridges are to be minimized and all penetrations of the exterior air barrier will be fully sealed. The exterior enclosure will be constructed to achieve a maximum air-leakage rating of 0.17 cfm/ft at 0.3 inches water gauge. The building will be blower door tested to demonstrate conformance.

Exterior Walls:
Exterior walls will be of non-bearing light gauge steel stud or may be wood studs for Type V-B. have R-24 fiberglass batt insulation filling the cavities between studs. In addition, there will be a minimum of 2 inches of continuous exterior mineral board insulation.

> Clear Cedar

At select locations, the use of wood siding and particularly cedar will be used. This is recommended to be under covered areas or protected from exposure. Where exposed, it shall have a durable exterior clear or semi transparent sealer with wood products dipped and coated on all sides with the sealer.

> Metal Panels

At select locations, Composite wall panels with concealed clips and/or fasteners over a thermally broken fiberglass clip or rail system to attach the building cladding back to the exterior wall structure

Exterior Windows:
Aluminum Storefront System

> Basis of Design: Aluminum framed, Kawneer Trifab 451UT thermally broken.

> Glazing: 1-inch double-pane Solarban 70 glazing with low-e coating on 2 surfaces, argon filled, or similar; code compliant.

> Finish: High-performance Kynar coating, Dark Bronze.

> Flashing: Prefinished aluminum to match.

TABLE:
Proposed Interior Finishes for Basis of Design

Program Area Types	Floors	Walls	Ceilings
Speaking Hall	Wood Gymnasium grade flooring	Level 4 GWB 50% Acoustical Treatment	Open to structure (CLT). 50% Acoustical treatment
Learning Commons	Carpet	Level 4 GWB 30% Acoustical Treatment	Open to structure (CLT). 50% Acoustical treatment
Dining Area	Polished Concrete	Level 4 GWB 50% Acoustical Treatment	Open to structure (CLT). 50% Acoustical treatment
Exhibit Areas	Wood Gymnasium grade flooring	Level 4 GWB 30% Acoustical Treatment	Open to structure (CLT). 50% Acoustical treatment
Building Support incl: Storage, Receiving , Custodial, MEP	Sealed Concrete	Level 3 GWB	Open to structure.
Circulation - Hallways	Polished Concrete	Level 4 GWB	Open to structure (CLT).
Restrooms	Floor Tile	Wall Tile up to 7’ on all wall surfaces.	GWB

Exterior Openings:
Exterior doors will be thermally broken, aluminum framed. Exterior doors at main entries will be fully accessible and have bollard mounted ADA push button paddles to operate motorized door openers.

Exterior louvers will be located as high off the ground as possible for security purposes. Their construction should be fully tamper-resistant and capable of preventing ingress. Louvers will be prefinished, or field painted to match adjacent finishes, factory fabricated and complete with frame, mullions and insect screens.

Roofing:
Low sloped roofs will be insulated to an average value of R-49 with continuous exterior board insulation located above the roof deck. Insulation will be mechanically fastened over a self-adhered vapor barrier over protection board and roof sheathing. Fleece-backed TPO (thermoplastic polyolefin) will be used as the roof membrane and be a minimum 80-mil thickness. Water will be directed to a series of roof scuppers, conductor heads and downspouts for drainage and potential on-site water storage facility.

- Sloped roof will be at a 3:12 slope and clad with Metal Roof Panels:
- Profile: 24 Gauge Standing Seam with minimum 1” seam height and concealed fastener system.
- Texture & Finish: Smooth, Fluoropolymer Coil Coating System.
- Snowguard: Continuous Fence type snow guard attached to standing seams with aluminum clamps.

Fall protection system will be a roof tie down system with Roof Anchors.

INTERIORS

Casework:
Casework throughout the project will conform to the North American Architectural Woodwork Standards (NAAWS), custom grade. Medium Density Fiberboard (MDF) with no added formaldehyde (NAF) will be used as the primary substrate for HPDL finished elements or solid wood. In wet areas, such as countertops, moisture resistant MDF is to be used. Casework is to be constructed using a frameless, flush overlay style with concealed European-style hinges. Forest Stewardship Council (FSC) Certified wood and composite wood for casework shall be required.

Wall Finishes:
Speaking Hall areas and Exhibit Areas will have a higher level of finish, furniture, display, and technology components. Assume use of wood veneer paneling, acoustic wall paneling and a more aesthetic acoustic ceiling system at these areas as identified in the table above.

Restrooms:
All shared restroom facilities will have full height partitions with locking doors and exhaust air ducting for each space. Toilet compartments and handwashing areas to have ceramic floor tile and ceramic wall tile up to an 7-foot height. There will be one accessible drinking fountain with a bottle filler.

D.3 CIVIL BASIS OF DESIGN NARRATIVE

SITE ANALYSIS

The proposed building will be in the northeast portion of the site with a paved access way that connects 7th Street to the building and will serve as a loading area and as a location for required ADA stalls. The access roadway will have enough space for loading and for a garbage truck to drive, turn around, and leave the facility. Concrete sidewalks will connect the main entrance of the building to the existing campus walkway system, as well as walkways to the south. Since this building serves as a building for Eastern Washington University students, most students will walk to this facility and not drive. There is an existing 60-stall parkivng lot at the south corner of the site that will remain.

The site is generally flat and based on NRCS Web Soil Survey the soils do not appear to present any challenges for foundation design and stormwater management. Stormwater runoff from the building and pavement will be routed to swales with drywells. The stormwater drainage will be treated for water quality and infiltrated in bio-infiltration swales. The approximate size for these swales is 4,400 square feet. The roof drains will connect to the drywells or incorporate into landscape design features. Typical sizes for storm drain piping are 6” to 8” diameter PVC pipes.

During the construction activities for this project there should be minimal impact to surrounding neighborhoods and their daily uses. Most construction activities and equipment/material storage should remain on the site. There may be minimal traffic control when connecting the access road to 7th Street and if large equipment is mobilized. All existing trees and vegetation will be protected during construction. The site will be seeded and irrigated after construction is completed. All necessary erosion control methods will be utilized during construction.

STORMWATER REQUIREMENTS

The proposed facility will follow the Stormwater Management Manual for Eastern Washington to meet the requirements for conveyance, flow control, and water quality treatment. It is anticipated that all stormwater will infiltrate on site but rainwater harvesting may be used to gain some LEED points. There will be a small amount of pollution generating impervious area, a small parking lot with an access road, that will be conveyed to a bio infiltration swale for water quality treatment. The bio infiltration swale will also be used for collecting the roof runoff from the building. Catch basins and piping will collect the runoff from the building and hard surface and be routed to the bio infiltration swales.

UTILITY EXTENSION / RELOCATION ISSUES

The existing site currently has water and sewer stubbed to the site as there was an existing building in the northeast corner of the lot that has been removed. The old water and sewer lines that went to an existing building will need to be removed / abandoned. There are existing sanitary sewer lines that run along the northern and eastern portion of the site as well as a water line along the eastern portion, which will be used as the connection point for the proposed building. It is assumed the building will have fire sprinklers and will need a fire service line as well as the domestic water service line. An irrigation system will be connected to the same water line. Locations for backflow preventers, water meters and fire hydrants will be determined during building and site design. There also is an existing utility tunnel under the existing concrete sidewalk as well as abandoned cable lines near the site.

EASEMENTS

There are no known easements located on the site.

D.4 LANDSCAPE BASIS OF DESIGN NARRATIVE

EXISTING SITE LANDSCAPE

The existing site is generally flat and has some minimal landscaping. There are irrigated turf and trees around the edges near pedestrian walkways and buildings. There is a large portion of the site covered in sparse turf areas with no irrigation.

LANDSCAPE DESIGN GUIDANCE

The exterior landscape design will be guided by several resources. It will be guided by the principles outlined EWU Climate Resiliency Landscape Masterplan, the Climate Action Plan, and the Prairie Restoration Project. It will also include input from project stakeholders and any other applicable requirements.

LEED CREDIT

The Lucy Covington Leadership Center Project is projected to receive a LEED Silver rating. Within LEED there are several areas where there is potential to gain points as they relate to the landscape design of this project.

- Protect and Restore credits can be gained with 25 percent of the site being planted with native and adapted plant materials.
- Open Space credit can be obtained by providing 30 percent or more of open space for the total site.
- Rainwater Management credit can be gained by providing rain gardens with native and adapted plants, use of permeable paving, and providing permanent stormwater infiltration systems that collect 100 percent using features vegetated swales, rain gardens, or water cistern.
- Heat Island Reduction credit can be gained by providing plant materials to shade paved areas and by providing paving materials that have an initial solar reflectance of at least 0.33.
- Outdoor Water Reduction credit can also be gained by use of no irrigation or reduced irrigation by reducing outdoor water consumption by 50 percent from the calculated from the sites peak watering month as calculated by the Environmental Protection Agency (EPA) Water Sense Budgeting tool.

OTHER RESOURCES

Other resources that will be utilized in the project will include the Washington Native Plant Society, native plant nurseries, and other resources with knowledge of native plants historically used by American Indians in the Eastern Washington areas. Information from local extension offices may also be utilized as a resource.

LUCY COVINGTON LEADERSHIP CENTER LANDSCAPE DESIGN

With the existing site being flat with little landscaping, landscape design features will be added to define spaces, provide interest, and provide educational opportunities. Predominately native and adapted plants will be used.

Foundation plantings will be provided around the building, along with a location for a medicinal plant garden incorporating plants that have historically been used by American Indians.

Shade trees will be provided throughout the site. Berms and rock features will also be used to define spaces and provide interest to the project.

A water conserving irrigation system will be designed to irrigate plants and reduce exterior water usage. Landscape plantings and features will be integrated into the site's stormwater system to reduce stormwater runoff and piping.

Other features incorporated into the exterior landscape will include pedestrian walkways, benches for seating, a cook shed, sweat lodge location, outdoor gathering space, outdoor classroom/event space, and an outdoor seating/dining area. In addition, there is potential to restore small areas to their original historical prairie condition, as is being planned in EWU Prairie Restoration Project.

D.5 STRUCTURAL BASIS OF DESIGN NARRATIVE

The following design narrative provides a general overview of the structural design including design loads, performance criteria, framing and lateral system descriptions, and material specifications.

DESIGN CRITERIA

2021 International Building Code

Roof Dead Load (includes solar panel load): 25 PSF

Snow Load: 32 PSF

> Ground Snow: 40 PSF

> Drifting and unbalanced snow loading in accordance with ASCE 7.

> Importance Factor = 1.10 (based on Occupancy Category III rating)

Roof Total Load Deflection Limit: L/240

Roof Live Load Deflection Limit: L/360

Wind Design

> Basic Wind Speed (3-second gust): 109 MPH

> Exposure C

> Risk Category III

Seismic Design

> Site Class(Per code minimum) D

> Spectral Response Coefficient (Short Period) SDS: 32.7%g

> Spectral Response Coefficient (1-Second Period) SD1: 18.0%g

> Seismic Design Category C

> Importance Factor 1.25

BUILDING FRAMING RECOMMENDATIONS

Preliminary plans are for a single story structure with a space for assembly with a high ceiling. Framing options for gravity loads include:

> Conventional framing of wood studs with plywood sheathing for lateral design with press plate wood trusses for roof framing.

> Mass-Timber framing with Cross-Laminated Timber members and glu-laminated beams.

> The tall assembly space may require structural steel braced frames or moment frames depending on the openness of the space of the final design.

Foundations will consist of conventional, reinforced, continuous spread footings. Columns will be supported on reinforced, isolated concrete footings. Footing sizes will be designed to meet the allowable soil bearing pressure. The floor will be a 4 inch thick slab on grade, reinforced with #4 rebar at 24" on center, each way. Slab joint spacing will be approximately 12'-0" on center in each direction. Sub-grade preparation for the slab on grade will be completed per the geotechnical report.

The roof framing over the two wings of the structure and the assembly space will be proprietary wood members such as RedBuilt Joists or Glu-Lam beams with SIPS panels for the decking.

Wind and earthquake forces will be resisted by a likely combination of the following options:

> Plywood-sheathed shear walls

> Steel-braced frames/moment frames

> CLT wall panels

TABLE:
Concrete Requirements

	Minimum 28 Day Compressive Strength	Air Entrainment (+or- 1.5%)	Maximum Size Aggregate	Maximum Water/cement Ratio
All Structural Conc, U.N.O.	3000 PSI	None	3/4"	0.50
Interior Slabs on Grade	3000 PSI	None	3/4"	0.42*
Exterior Slabs on Grade	4000 PSI	6%	3/4"	0.45
Topping Slabs	3000 PSI	None	3/8"	0.42*
Footings	3000 PSI	None	1"	0.50
Foundation Stem Walls	3000 PSI	5%	3/4"	0.45
Exterior C.I.P. Walls	3000 PSI	5%	3/4"	0.45
Structural Slabs & Columns	4000 PSI	None	3/4"	0.50

* Water/Cement ratio variance not allowed.

All reinforcing bars to be Grade 60 (Fy = 60,000 psi)

MATERIAL SPECIFICATIONS

Concrete Requirements: As shown in Table above.

Steel Framing Requirements

> Connection material, embedded items: ASTM A36

> Structural Tubes: ASTM A500, Grade B

> Structural framing bolts (steel connections): ASTM A325N

> Anchor Rods: ASTM A36

> Threaded Rods: ASTM A36

> Welding Electrodes: E70XX

Glu-Laminated Timber Beams

Per AITC 117 "Design Standard Specifications for Structural Glued Laminated Timber of Softwood Species"

Simple span beams: 24F-V4

Continuous or cantilever beams: 24F-V8

Cross-Laminated Timber Panels

CLT members to comply with ANSI/APA PRG 320 "Standard for Performance-Rated Cross-Laminated Timber"

Proprietary Wood Products

Premanufactured wood I-joists, open-web joists, beams, and trusses to have ICC acceptance. Possible manufacturers include but are not limited to:

> RedBuilt

> Trus Joist by Weyerhaeuser

D.6 MECHANICAL BASIS OF DESIGN NARRATIVE

GENERAL MECHANICAL REQUIREMENTS

All mechanical systems, equipment and components will be designed, selected and installed in accordance with all applicable codes and standards including:

- International Building Code (IBC), Standards and Amendments.
- International Mechanical Code (IMC), Standards and Amendments.
- International Fire Code (IFC), Standards and Amendments.
- Uniform Plumbing Code (UPC) Standards and Amendments.
- International Fuel Gas Code (IFGC).
- National Fire Protection Association (NFPA).
- National Electrical Code, (NEC); NFPA 70.
- 2021 Washington State Energy Code and all applicable State and local codes, laws and ordinances.
- LEED Silver Criteria
- Eastern Washington University Climate Action Plan 2022-2025
- 2021-23Predesign Manual for Capital Projects
- Industry Standards
  - American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
  - Air Conditioning and Refrigeration Institute (ARI) Standards
  - NFPA 90A - Installation of Air Conditioning and Ventilating Systems

ENERGY

Project Sustainability Goals

Electrification

- As the electrical grid adopts greater percentages of renewable energy sources (wind, solar, hydro, etc.), a path to decarbonize the built environment is electrification. The 2021 Washington Energy Code will require electrification for buildings of this size & occupancy for HVAC systems and partial electrification of building domestic hot water. This will be accomplished for this project through heat pump technology via a centrally located ground source.

LEED Certification

- Project is targeting LEED Silver certification minimum under the v4.1 New Construction pathway.

Resiliency

- Project should consider the effects of climate change on projected weather patterns when sizing and planning for operation of HVAC systems.

High Performance Public Buildings per 39.35D RCW

- Project to achieve LEED Silver minimum

Net Zero Energy per Executive Order 20-01

- Building to be designed to zero energy or zero energy-capable
- Team to evaluate building expected EUI and required PV array size along with for net zero ready, to be located on or off site as allowed by AHJ

Clean Buildings Act per RCW 19.27A.210

- Compliance with operating EUI targets beginning in 2028

GHG Emissions Reduction Policy

- Building to comply with statewide GHG emissions reporting requirements.
- Follow EWU Climate Action Plan objectives.

2021 WSEC Compliance

Project will be subject to the 2021 Washington building codes, including the 2021 Washington State Energy Code.

Envelope

- Project is anticipated to comply prescriptively with envelope provisions via the R-value, U-value, or Component Performance alternative approach.

C406 Additional Energy Efficiency Credit Measures

- Project shall comply with the minimum number of new building energy efficiency credits and new building load management credits per Table C406.1 and Table C406.2.
- Suggested efficiency credit strategies to explore include but are not limited to:
  - Improved heating efficiency
  - High-performance DOAS
  - Reduced lighting power
  - Renewable energy
  - Heat pump domestic hot water heating
  - Reduced air infiltration
- Suggested load management credit strategies to explore include but are not limited to:
  - Lighting load management
  - HVAC load management
  - Building thermal mass
  - Renewable Energy
- Project shall either provide an on-site solar PV array sized per section C411 or shall comply with one of the available exceptions. Preliminary size calculated at approximately 15 kW installed capacity.
- Project shall comply with solar readiness requirements to provide a solar zone for future PV and per section C411.

MECHANICAL SYSTEMS

The following narrative describes the mechanical systems intended for the new Lucy Covington Building which is to be constructed in a two phase approach.

Project Mechanical Goals

Utilize the EWU Physical Chilled Water Plant & New Geothermal Heating Plant proposed.

> EWU has invested heavily in this chilled water plant over the years, and it has the available capacity to serve this new Lucy Covington building. In addition, there are pipe mains extremely close to the proposed building footprint. The project team will make use of this available source.

> Utilize approximate 120 degree heating water for the new geothermal heating plant to reduce carbon footprint and reduce fossil fuel load of current campus steam system. New direct bury piping or tunnel construction will be required from central geothermal plant to proposed mechanical room location in phase 1.

Healthy Buildings

> Utilize decoupled ventilation & conditioning strategies using dedicated outside air systems (DOAS) or also known as energy recovery ventilators (ERV). These systems operate with the core intent to ensure buildings are well ventilated for students to learn success and improve energy efficiency. Provide both MERV 15 & carbon filtration to ensure high indoor air quality, even during forest fire seasons. Consider design impacts of future pandemic resiliency direction.

Building Load Estimates

Cooling: ~70 tons (120 gpm) Total

~46.6 tons (80 gpm) for phase 1

~23.4 tons (40 gpm) for phase 2

Heating: ~975 MBH Total

~640 MBH (60 gpm) for phase 1

~335 MBH (30 gpm) for phase 2

Ventilation: ~9,600cfm

Design Temperatures

> Cooling air supply temperature: 55°F-60°F

> Heating air supply temperature: 85°F-90°F

> Chilled water supply/return: 44°F/56°F (from campus central chiller plant)

> Heating water supply/return: 115-120°F/95-100°F (from new geothermal plant)

Electrified Source Energy System Concept

Heating System

> Hot water provided by the new campus low temperature heating water system that can supply 115-120°F water for heating use in building hot water coils.

Pumping configuration – primary/ secondary

> (2) primary inline pumps operating constant volume integral to equipment.

> (2) secondary vertical inline pumps operating variable volume will serve building coils as required.

Pressure independent control valves to be used at all coils.

Control per local and remote DP sensors.

> Located in the main mechanical room of phase 1.

> Piping to be sized to accommodate phase 2 of project but capped at phase 1 for continuation.

Backup boiler plant hot water connection.

> Sized to support the hot water supply via steam to hot water heat exchanger from EWU steam plant on campus via utility tunnels close to the Lucy Covington site & also build in system resiliency.

Other hydronic components include but are not limited to:

> Coalescing air separator sized for nominal main pipe size.

> Expansion tank.

> Makeup water assembly.

> Locate all hydronic equipment in the main mechanical room of phase 1.

Cooling System

> Pumping configuration – Primary, Secondary, Tertiary

> The primary and secondary pumps exist and are located at EWU's physical plant. Provide (2) tertiary vertical inline pumps operating variable volume to serve building coils. Tap off campus chilled water distribution utility tunnel northwest of building footprint and provide isolation valves exterior to the building in a small vault and immediately inside building.

> Pressure independent control valves to be used at all coils

> Control per local and remote DP sensors

> For system options I, provide (2) dedicated inline pumps to serve the terminal coil with lower temperature water (dehumidification ability). The tertiary pumping assembly described above will tap off the return line to the building, mix to 55-57°F and serve all building sensible only coils in the chilled beam system.

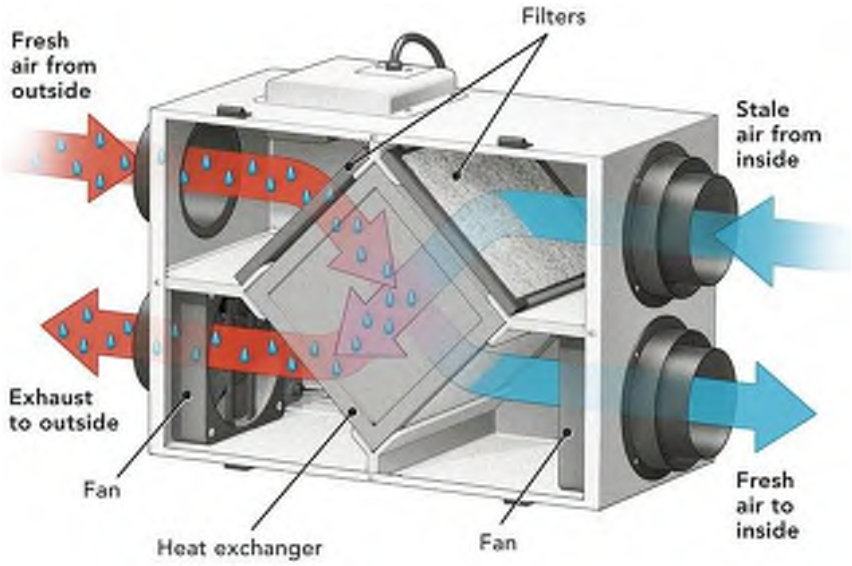
> Locate in main mechanical room in phase 1

Vibration & Sound Isolation

Mechanical equipment will be provided with vibration isolation mounts and hangers to meet criteria for maximum vibration levels.

HVAC systems will be designed to a maximum sound level of 45 dBA on the "A" weighted scale. More sensitive areas will be dealt with on a case-by-case basis depending on the space's specific requirements.

IMAGE:
Dedicated Outside Air System (DOAS)



Mechanical Insulation
Refrigerant piping will be insulated per manufacturers recommendations and IMC requirements.

Ductwork will be insulated with either external, flexible glass fiber blankets or internal, acoustical glass fiber duct liner.

Exhaust Systems
Toilet rooms, and general room exhaust will be provided with either individual exhaust fans or can be integrated to the DOAS system exhaust so the energy can be recovered from the conditioned air that would otherwise be wasted.

Air Distribution
Supply and return air will be distributed to each zone from the chilled beams(s) and fan coil(s) to the associated zone(s). Duct will be constructed per SMACNA standards and lining will be used to attenuate sound as needed to maintain acceptable sound levels for spaces served.

Ductless Split System
A ductless mini split system, in its most basic form, includes one outdoor unit and one indoor unit, connected by refrigerant tubing and electrical wiring. The indoor unit is often wall-mounted and delivers heated or cooled air directly into the space – no ductwork needed. Ductless split systems will be utilized for rooms such as IT and electrical which require year-round dedicated cooling.

Kitchen Exhaust and Make-up Air System
A type I hood system will be required for the commercial kitchen space. The indoor hood will be selected to meet the needs and equipment of the cooking space. A dedicated makeup air unit with evaporative cooling and natural gas heat will be located near the kitchen and ducted to the hood plenum. Demand controlled ventilation will be used to limit the amount of outside air needed from the makeup air unit and exhaust fan when systems under the hood are only in partial use.

Dedicated Outside Air System (DOAS)
All systems mentioned in HVAC system options will be coupled with an energy recovery DOAS system to provide ventilation to each space throughout the facility. This system uses a centralized dedicated outside air fan system to filter and temper the outside air that is required to maintain an acceptable level of indoor air quality with a modern office building. The tempered air (55 F to 65 F) is distributed to multiple fan coil units that provide individual zone control to different parts of the building.

The DOAS draws air into the building through a set of MERV 13 minimum filters to remove the majority of particulate matter from the air. After the filters, the air is passed through an energy recovery heat reclaim coil that preheats the air with waste heat from the building exhaust system. Next the air is passed through heating and cooling coils which operate depending upon the ambient conditions. A supply fan is then used to distribute the tempered outside air through the building to the system chosen for building conditioning.

Control Systems
This facility will utilize a Direct Digital Control system (DDC) for the control of the HVAC systems.

System features will include but not the following:

> Optimum start/stop
> Demand limiting
> Monitoring of supply air, outside air and mixed air temperatures
> Alarms
> Trend logging

The control system will have a direct interface with the electric utility meter for energy monitoring purposes. All air handling units will be equipped with airflow measuring stations in the outside air ductwork to ensure adequate and efficient ventilation. All air handling units and fan coil units will be equipped with economizer capability.

HVAC OPERATING STRATEGIES TO MAXIMIZE ENERGY SAVINGS

Varying air handler fan speeds:

> Fan speeds may be adjusted not only in response to heating or cooling needs, but also to limit peak electrical demand. Most buildings exhibit thermal inertia, meaning that the mass of the structure and its contents tend to stabilize temperature changes even when heating and cooling systems work to alter them.

> Some facility maintenance engineers have taken advantage of this stabilizing effect by reducing air handler fan speeds and the cooling or heating inherent in circulating air for brief periods (for example, 10 minutes out of an hour) when power cost is most costly. By sequentially shifting this reduction among all air handlers, no one space feels the reduction long enough to result in a significant change to occupant comfort.

Cooling and heating coil water supply temperatures:

> An outdoor air sensor may be used with appropriate programming to raise heating water temperature as outdoor temperatures drop and lower it on moderate days.

Supply water temperatures also may be reset based on return water or return air temperature where they reflect the need for conditioning specific zones or on a time schedule to reflect occupancy. When no one is in space, its temperature may be allowed to vary widely.

Carbon dioxide sensors:

> Carbon dioxide sensors can be used to control outside air intake. As with temperature control, sound HVAC design provides sufficient fresh air to deal with the worst-case scenario, including full occupancy in a zone such as meeting rooms or cafeterias. Most of the time, however, these spaces are only partially filled, so that far more outside air is brought in than required by code or comfort under this condition. Conditioning of outside air, at times, can account for nearly half the load on an HVAC system.

> By measuring carbon dioxide in return air, a reasonable estimate of the number of occupants may be made, allowing for a reduction in outside air.

IMAGE:
Chilled Beam System with DOAS

Chilled and heating water pump speed:

> Pump speed can be reduced through the use of variable speed drives. When zone coil water control valves throttle back in response to a reduced load in the space, a pressure sensor located within the piping system can sense the change in pressure and reduce the flow through the system accordingly.

HVAC SYSTEM OPTIONS

Chilled Beam System with DOAS (Preferred Alternative)
Active chilled beams use a circulating hot and chilled water loop that is routed to each heat pump unit. The heating and cooling source of this loop will come from either new the central geothermal campus plant and can be backed up via current campus central plant steam system.

Each chilled beam unit has a chilled and heated water connection to provide heating and cooling with the use of ventilation air from an energy recovery ventilator (DOAS). The temperature differential between the supplied and room air provides 3-4 times the amount of airflow increase through induction from what is provided to each chilled beam unit which greatly reduces overall system fan energy.

This mechanical system can vary widely in cost depending on geothermal plant capability. For pricing of this system, it is assumed to be heated water from the new geothermal heating plant with backup heat from campus steam system along with chilled water from the current chilled water plant and is estimated at approximately $50/SF.

Advantages:

> It's very flexible. The system can be subdivided or expanded into new zones to fit building remodeling or additions easily and inexpensively.

> If a unit fails, the entire system doesn't shut down.

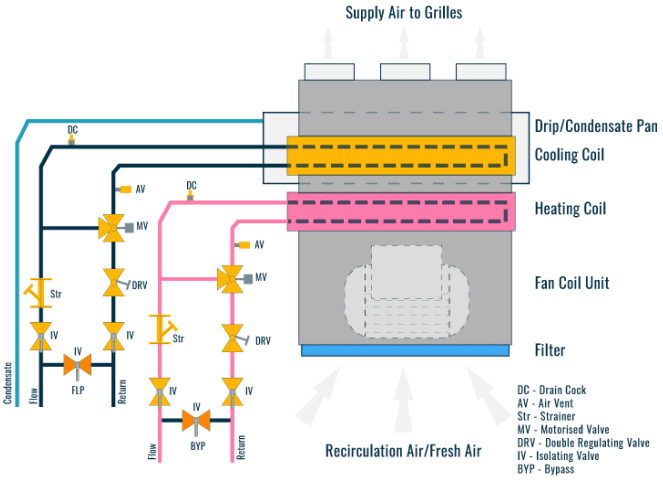
> This type of system can easily be designed to facilitate partial occupancy of the building while the remaining portions are unoccupied.

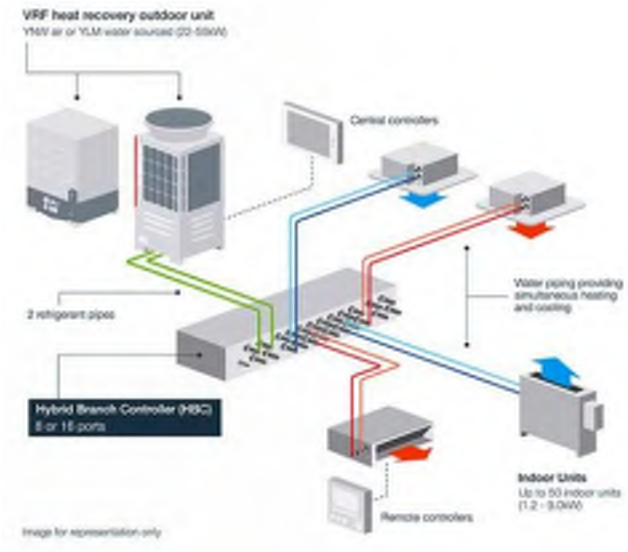
> No moving parts or filters on terminal units so maintenance is extremely low.

> Its high efficiency reduces annual energy costs and reduces greenhouse gas/CO2 emissions due to no terminal fan use for distribution of air.

> Newer technology allows for the variation of the nozzles airflow to accommodate demand control ventilation while not losing induction ratios.

IMAGE:
Four Pipe Fan Coil System with DOAS (Left)
Variable Refrigerant Flow (VRF) with DOAS (Right)





Disadvantages:

> Temperature swings can be hard for the chilled beam to keep up with that can cause comfortability issues for some in the extreme hot or cold.

> Pumps, Heat Pumps and/or chillers will require periodic maintenance.

Four Pipe Fan Coil System with DOAS

Four-pipe systems utilize two independent coils, one for heating and one for cooling, modulating cooling and heating valves for controlling coil capacities allow this type of system to only deliver the quantity of heating or cooling required by the space load. This makes the system very comfortable. For example, if 62F air is required to condition the space, then the coil valves will modulate water flow to the coils to deliver air at this temperature.

This system requires a central chiller and a boiler to provide the heating and cooling water to each respective loop. The water is circulated to the fan coils located in various mechanical rooms within the facility or could come from the campus network.

The estimated first cost for this system is around $45/SF installed.

Advantages:

> Unoccupied areas of the building may be isolated and shut down.

> Zones can be individually controlled.

> Familiar system across campus.

Disadvantages:

> This system requires multiple building envelope penetrations to accommodate individual outside air and relief hoods/louvers.

> Water loops need to be chemically treated periodically to prevent corrosion.

> Failure of the many valves and components it is circulated through.

Variable Refrigerant Flow (VRF) with DOAS

Variable refrigerant flow systems with heat recovery (VRF-HR) capability can operate simultaneously in heating and/or cooling mode, enabling heat to be used rather than rejected as it would be in traditional heat pump systems. VRF-HR systems are equipped with enhanced features like inverter drives, pulse modulating electronic expansion valves and distributed controls that allow the system to operate in net heating or net cooling mode, as demanded by the space.

The system we would propose would use a combination of concealed ducted ceiling mounted units to condition smaller individual spaces. Fan coil style units would also be used in larger meeting and conference rooms to provide adequate zoning. Additional refrigeration piping and capacity will be added based on anticipated needs by the owner. The outdoor condensing units will be mounted on the ground near the building since we will likely have a pitched roof. If mounting the unit on the roof is unacceptable, a well space at roof level or a ventilated mechanical space at the perimeter of the building are also acceptable locations for the units. Efforts will be made to locate the units in a central location considering the refrigeration line length limitation of the systems.

The estimated first cost for this system is around $42/SF installed.

Advantages:

> It's very flexible. The system can be subdivided or expanded into new zones to fit building remodeling or additions easily and inexpensively when extra branches are provided and capped.

> If a unit fails, the entire system doesn't shut down.

> This type of system can easily be designed to facilitate partial occupancy of the building while the remaining portions are unoccupied.

> Its high efficiency reduces annual energy costs and reduces greenhouse gas/CO2 emissions.

TABLE:
Analysis of Mechanical Systems

SYSTEM	COST ESTIMATE: - FIRST COST - ANNUAL MAINTENANCE COST - ANNUAL ENERGY COST	PRO	CONS
Chilled Beams (Preferred Alternative)	$1,200,000 $4,464 $41,240	• Lowest energy system • Possible Integration of Campus Utilities • Very Little Maintenance for Terminal Units • Individual Room Control	• High First Cost • Relies on Geothermal Central Plant for Maximizing Efficiency
4-Pipe Fan Coil	$1,080,000 $6,460 $54,200	• Possible Integration of Campus Utilities • Ease of Controllability • Familiar System on EWU Campus	• No Individual Room Control for Smaller Spaces • Not as Efficient as Other Systems • Chiller/Boiler Maintenance
Variable Refrigerant Flow	$1,008,000 $3,752 $40,385	• Lowest First Cost • Energy Efficient • Flexible Installation • Individual Room Control	• No use of Campus Utilities • Lots of refrigerant piping and leak potential • Shorter Equipment Lifespan • Specialized Technician Required for Maintenance

Disadvantages:

> Refrigerant leaks can be troublesome to track down when they occur.

> The sound of outdoor condensing units can be loud.

> Control integrations between proprietary controls and DDC can be problematic for precise control.

D.7 PLUMBING BASIS OF DESIGN NARRATIVE

Domestic hot water will be generated from water-to-water heat exchangers connected to the new low temperature heating water system, serviced by the newly proposed geothermal heating water system. Domestic hot water will be generated between 115-120°F from a water to water heat exchanger located in the mechanical room of phase 1. If water temperatures in excess of 120°F are needed within the building, an electric booster heater should be provided (style of booster heater to be determined based upon discussions with EWU). Point of use mixing valves will be used at all lavatories and hand washing sinks to limit water to 105°F. Each system will have a circulation pump, which will operate only in the building occupied hours, or as programmed by the Energy Management System.

Plumbing fixtures, water heaters, domestic water piping, sanitary waste and vent piping, and storm drainage (rainwater) piping will be designed and installed in accordance with the Uniform Plumbing Code, Washington State Amendments to UBC Chapter 11 Accessibility and the Rules and Regulations of the Washington State Board of Health.

Site Utilities for sewer and water service will come from existing sanitary sewer lines that run along the northern and eastern portion of the site as well as a water line along the eastern portion, which will be used as the connection point for the proposed building. It is assumed the building will have fire sprinklers and will need a fire service line as well as the domestic water service line. An irrigation system will be connected to the same water line. Locations for backflow preventers, water meters and fire hydrants will be determined during building and site design.

It is estimated that the new facility will require a 2-1/2 inch domestic water service and a 6-inch wastewater connection. Survey information will determine if a new tap is required for either service mentioned.

Kitchen faucets will be limited to 2.2 gallons per minute (gpm) flow except for those used for filling operation. Toilet rooms will have wall hung water closets (1.28 gallons per flush) and urinals (0.125 gallon per flush) with battery-powered, sensor-operated flush valves. Lavatories will be low flow (.5 gpm), battery-powered, sensor-operated faucets.

LEED requirements may affect the values stated above if points for Indoor Water Use Reduction are implemented.

CONCLUSION

In conclusion, we believe the active chilled beam system will be the best system fit for the proposed building and use. Blending high efficiency and versatility while respectfully using the land as a heat sync provides one of the lowest carbon footprints available and will assist in LEED certification of the new facility. While this system is not the least expensive upfront cost option it will attain project goals of sustainability and renewability which are extremely important to the meaning and mission of the Lucy Covington Building stakeholders. This system also gives excellent zone control and equipment longevity which is easily modified for future building reconfiguration in the future. The table below is a summary of estimated costing and benefit analysis.

D.8 ELECTRICAL, TELE-COMMUNICATIONS, AND SECURITY BASIS OF DESIGN NARRATIVE

PROJECT ELECTRICAL ANALYSIS

General

The conceptual program for the Preferred Alternative allocates approximately 15,000 gross square feet (GSF), into a single-story facility that supports the project goals described in Section 02, Problem Statement. The proposed Lucy Covington Leadership House brings together cultural/community gathering & event spaces, student collaboration & support spaces, and exhibit gallery & performance spaces. The proposed building concept incorporates a speaking hall that accommodates 300 people, a student commons for studying and collaboration, and exhibit space featuring the life and legacy of Lucy Covington.

Located on the southeast corner of 7th Street. And G Street, in the City of Spokane, Washington. The project includes minimal additional parking in accordance with City of Spokane ordinances and provisions, given there is existing parking in proximity. The new building will adhere to the 2021-23 OFM Biennium Predesign Manual & the 2020 NEC (National Electrical Code). Design will provide power and infrastructure for solar readiness to allotted space designated by architect to comply with 2021 Washington State Energy Code.

Applicable Codes And Standards

The completed installation will conform to the latest adopted version of all federal, state, and local codes with amendments and additions, regulations, including industry standards, such as:

- IEEE: Institute of Electrical and Electronic Engineers
- NEMA: National Electrical Manufacturers Association
- NFPA: 110
- NFPA: National Fire Protection Association
- NEC: National Electrical Code
- IBC: International Building Code
- IFC: International Fire Code
- TIA/ETA: All Applicable Telecommunications Industry Assoc./ Electrical Industries Alliance. Applicable State and local codes, laws, and ordinances.

All Necessary permits and inspection required by the governing authorities having jurisdiction over this work are to be obtained by the Contractor. Compliance with state and local codes is the responsibility of the Contractor.

Existing Site Utilities

Existing onsite power. The proposed project site is currently serviced by Avista through underground electrical distribution system. The campus Electrical Distribution Upgrades Ph. 2, Termination Pt. #11A above grade, brings a high voltage switch to the proposed Lucy Covington Leadership House site. A new underground feeder from the existing termination Pt. #11A will be installed to serve the new building. Transformer location to be coordinated during design phase

Utility to coordinate burial of remaining electrical overhead services and/or relocation of underground electrical. Avista and Eastern Washington Campus Officials to verify acceptable design.

New Electrical Power Distribution

The proposed project site is currently serviced by underground electrical and would require use of the above ground service and meter locations to be coordinated with Architect. Estimated utility service will be 2000 AMPS at 208V, 3 PHASE, with estimated loads as follows:

- Lighting: 18.7 Kw
- Air Conditioning 100 Kw
- Heating 28.3 Kw
- Water Heating 15.4 Kw
- Cooking 13.7 Kw
- Refrigeration 3.66 Kw
- Receptacles 137.3 Kw
- Miscellaneous 4.6 Kw
- Elevators 20 Kw
- Other Motors 92.7 Kw

Total Connected Load 434.4 Kw

+25% Spare Capacity 543 Kw

543 kW at 80% Power Factor 679kVA (1885 amps)

Power Density

Standard power density (W/ft2) for typical educational space will be provided.

Redundancy And Emergency Power

A generator will be provided for the addition as an alternate electrical source of power for use during an interruption of the normal electric supply if the existing emergency generator systems prove to be loaded to the recommended maximum capacity. Generator back-up and emergency power will be provided in accordance with the NEC, and NEMA 110.

Eastern Washington University Campus requirement specify emergency and standby power generation will be provided by means of a weatherproof sound attenuating engine driven natural gas fueled generator set. The generator will be sized to supply the emergency and standby loads served. Emergency power will be monitored to report most normal failures such as low starting batteries, overload, etc.

The generator(s) will be mounted at appropriate height to allow for maintenance access to oil drain low point. Provided with an automatic transfer switch to automatically switch loads between the normal EWU campus power and generator backed power.

The emergency electrical distribution system will supply power to all life safety systems within the building such as egress lighting, exit lighting and the fire alarm system. Standby power system

is to provide generator backed power to non-life safety loads within the new building as necessary, such as computer servers, telecommunications rooms and it associated cooling along with any other equipment determined critical.

Lighting Design
Lighting controls will be in accordance with applicable energy codes. Lighting levels will be provided in designated spaces per 2021 Washington State Energy Code. We will use the Illuminating Engineering Society (IES) standards for all areas not covered by the Architect/ Engineer Design Guide. High efficiency LED luminaires will be provided with energy-saving control and switching scenarios. Light fixture types, layout and switching configurations/locations, utilizing antimicrobial finishes where required will be closely coordinated in accordance with EWU standards and design intent. In addition, site/parking LED lighting standards will also be added and integrated into the existing campus site-controlled lighting infrastructure. Lighting CCT will range from 3500 K - 4000 K promoting focus and alertness in an education facility. Interior Lighting Power Allowances – Building Area Method will meet the 0.70 LPD (w/ ft2) per WAC 51-11C-405053. Exterior building grounds lighting will have an efficacy of 100 lumens per watt per WAC 51-11C-4705061.

Lighting Levels
Lucy Covington Leadership house required lighting levels are as follows: (For spaces not listed, the current IESNA light level recommendations will be followed).

> Offices: 45 FC with dual level switching and occupancy sensor.
> Lobbies: 20 FC
> Corridors and means of egress: 15 FC.
> Conference rooms: 30 FC to 50 FC with dimming controls as required.
> Restrooms: 20 FC
> Equipment rooms: 30 FC
> Computer Rooms/Data Center: 50FC with dual level switching.
> Laboratories (general): 750 to 100FC.
> Exterior lighting at building entrances, walkways, streets, and parking lots: Not more than 2 FC.

Enhanced Circadian Lighting Desing that promotes higher productivity, improved memory and cognitive function including improved mood and metabolic health will be considered to combat the systemic relationship that Indigenous students have with education facilities.

Lighting Controls
Manual switches to turn on, occupancy sensors to turn on or off, scheduled lighting controls and lighting sweeps and daylight dimming will be designed in accordance with applicable state and federal energy codes in addition to meet and/or exceed project LEED Silver certification requirement. Predesign lighting control intent is as follows:

> Open office: manual switch on, occupancy sensor off.
> Closed office, storage and copy rooms: manual switch on, occupancy sensor off.
> Corridors and other service spaces: time clock schedule.
> Perimeter office (open and closed), lobbies and corridors: same as above, but also include daylight dimming.
> Conference rooms: manual switch on, occupancy sensor off.
> Parking garage: Not Applicable.
> Exterior: photocell and time clock.

Receptacles
Receptacles will be duplex-grounded receptacles and no more than 6 duplex receptacles on a single circuit. Electrical receptacle cover plates will be distinctively colored or marked for identification.

Electrical receptacle cover plates or electrical supplied from the emergency system will be distinctively colored or marked for identification. Ground fault interrupters will comply with NFPA 70. Receptacles will comply with the Architect/Engineer Design Guide.

Conduit
Conduits will be rigid metal type when used in damp or exposed locations, or when specifically required by the NEC. PVC conduit will be used where routed underground. PVC Schedule 40 conduit will be used for concrete encased circuits. PVC Schedule 80 conduits will be used for direct buried branch circuits. Electrical metallic tubing will be used in dry concealed locations and in furred, ceiling spaces. Flexible conduits will be used for final connections to be recessed luminaires, motor driven equipment and vibrating equipment. Conduit will not be used as a ground path; all electrical circuits will contain an equipment ground wire. Minimum conduit size will be ¾" trade size for homeruns, ½" to receptacles, switches, and luminaires.

Conductors
Conductors will be copper with 600-volt insulation. Conductors No. 8 and larger will be stranded, type THWN. Smaller conductors will be a solid type THHN/ THWN. Aluminum conductors will not be permitted. Conductors for use in high temperature locations will be insulated as required by the NEC. The minimum size of power conductors will be No. 12 AWG.

Fire Alarm System
The Fire Alarm System will be provided in compliance with NFPA 101 and NFPA 72 as well as the Architect/Engineer Design Guide. The system will be integrated into the existing campus facilities fire alarm system. Contractor will provide a complete fire alarm system design to meet all requirements of the AHJ (Authority Having Jurisdiction).

No specific type or manufacturer is required during predesign, EWU campus preferred manufacturer and type will be coordinated during design phase. A fully addressable system is required to be code compliant.

Security System
Coordination with Owner's preferred vendor for rough-in and raceway only to device locations to be fully integrated per EWU standards.

Data And Communication Systems
The data and communications system scope of work at this time includes horizontal cabling for condominium units (phone and CATV), backbone cabling to each office level and each of two major retail tenant spaces, and house cabling needs. This includes copper, cable TV and fiber optic for backbone, and copper UTP and CATV for horizontal cabling. Lucy Covington Leadership House data and cabling will be designed with Phase 2 taken into consideration.

Networking equipment such as servers, ethernet switches, routers, software, and computers will be owner provided.

Telecommunication Rooms: MDF room will be a dedicated space located on the first floor of the building, to be designed for the termination of horizontal station cabling, backbone cabling and campus distribution cabling.

Security And Access Control
Coordination with Owner's preferred vendor for rough-in and raceway only to device locations. Security concerns for the building include controlling access to the office during the day to meet campus expectations and after hours. No specific type or manufacturer is being specified during predesign. Desired security system features (e.g., card reader, fingerprint, length of image storage capacity, remote access capabilities and backup features, user programmability, reporting functions, battery backup duration, etc.) will be coordinated with EWU campus security.

Audio Visual Systems
To be room specific, coordination with Owner's preferred vendor for rough-in and raceway only to device locations. Distribution of audio and video signaling within each classroom and conference room in accordance with EWU standards. The system will consist of AV input plate(s), ceiling mounted speakers, amplifier/video switcher, control panel, mounting hardware, wireless microphones, assistive listening output, and cabling. Audio visual equipment, such as video projectors, flat panel displays, etc. and will be furnished by the owner.

SUSTAINABILITY

General
Project baseline goal is LEED Silver with mandated Energy and Atmosphere requirements as follows:

> Fundamental Commissioning and Verification
> Minimum Energy Performance
> Building-Level Energy Metering
> Fundamental Refrigerant Management

Stretch goal for project entailing LEED Platinum to be addressed during design phase. EWU has expressed strong interest in Net Zero Renewable Energy. Enhanced goals to achieve Net Zero to be further assessed during design phase taking into account cost effectiveness, space constraints and environmental impact. Cost effective is defined as a simple payback of less than 5 years or a life cycle cost less than the baseline. A life cycle cost analysis (first cost, energy, operations, maintenance, replacement, productivity), is not necessary for measures with simple paybacks less than 5 years.

Solar Design
On-site renewable energy. New buildings larger than 10,000 square feet of gross conditioned floor area, will include a renewable energy generation system consisting of not less than 0.5 W/ft2 or 1.7 Btu/ft2 multiplied by the sum of the gross conditioned floor area. Washington State Energy Code 2021 Edition, 51-11C WAC Section C411.

Based on a 15,000 SF footprint the solar design will need to generate 7-8kW of renewable energy. It can be anticipated to be a minimum of $93,000.00 Solar Energy Electrical Power Generation System including, solar panels, inverter(s), mounting, accessories.

System Specifications:
> MAXIMUM POWER DC (WP): 8,000 watts DC; 8.0 kW
> MAXIMUM POWER AC (WP): 7,305 watts AC CEC
> ESTIMATED POWER GENERATED: 967 kWh AC monthly average
> MAXIMUM POWER VOLTAGE VMP (V): 240 Volts
> MAXIMUM SYSTEM OUTPUT CURRENT IMP (A): 29 Amps
> MINIMUM REQUIRED OCPD CIRCUIT BREAKER RATING (A): 40 Amps
> ARRAY DIMENSIONS: 430 square feet
> ARRAY WEIGHT: 1,120 lbs.
> DISTRIBUTED LOAD: 2.6 lbs. psf.

Sustainability Goals And Strategies Summary
Eastern Washington University commitment to sustainability (EWU Climate Action Plan) and decarbonization offers several opportunities for LCLH to integrate enhanced energy efficiency design directives to include but not limited enhanced lighting control, color rendering, established equipment benchmark (e.g., plug load v. total energy consumption), controlled receptacles, light pollution reduction and renewable onsite energy.

Challenges towards building wide sustainability include space constraints limiting onsite renewable photovoltaic energy production. Photovoltaic battery storage and efficacy losses also pose a concern for a net zero design. Photovoltaic battery storage needs, an approximate lifespan of 20 years and cost effectiveness concerns pose ongoing challenges and future concerns. Electrical Utility power grid requirements will not reduce total Avista power plant capacity design and needs for the building.

COMMISSIONING

Scope
Current commissioning scope with campus management includes lighting controls, fire alarm interface, emergency power.

Electrical equipment (switchboards, panel boards, transformers), vertical transport, special systems (security, data and communications, intercom, CCTV, fire, life safety, fire alarm) are not under commissioning authority but will still have quality control and assurance requirements performed by design team, campus operations staff and the contractor.

Commissioning Plan
An Ongoing Commissioning Plan is a required document for LEED, Fundamental Commissioning of the Building Energy and Atmosphere Systems.

Rigor
Project predesign commissioning scope is for above average rigor of building systems.

Design Reviews
Design Reviews are characterized by a thorough independent design review of the commissioned systems and assemblies by qualified engineers focusing on commissioning, performance, and O&M issues.

Specifications
Commissioning specifications will be thorough and fully describe all requirements of the Contractor, including specific testing requirements for each type of equipment.

Roles
The roles of all parties and the sequence of the commissioning process will be clearly and completely described.

Installation Verification
Installation Verification during early and mid-construction the level of rigor is characterized by field observation by the Commissioning Authority or team, as necessary, to observe component and system installations for general progress and issues affecting performance and testing. Contractors are responsible for the installation, set up and startup of their equipment and filling out Commissioning Authority provided, and all manufacturer provided checklists.

Performance Verification
Performance Verification/Testing will be accomplished through review of control code programming, documented field testing of each sequence of operation for all equipment and through monitoring performance over time with trend logs from the building automation system. Testing will be conducted from detailed, step-by-step, repeatable test scripts specifically applicable to this project approved by the Commissioning Authority. Testing will include testing each sequence in the sequence of operations, and other significant modes, sequences and control strategies not mentioned in the written sequences; including, but not limited to startup, shutdown, unoccupied and manual modes, modulation up and down the unit's range of capacity, power failure, alarms, component staging and backup upon failure, interlocks with other equipment, and sensor and actuator calibrations.

All larger, more complex, or life-safety equipment will be individually tested. Testing only a sample of some equipment may be allowed where such equipment is small in physical size or importance, is numerous and is not complex or critical for life-safety. Tests for a given system or assembly will not be conducted until they are fully operational under normal and reliable control with construction checklists, control calibrations, programming and control system graphics complete.

All testing documentation for complex equipment will be directed and overseen by the Commissioning Authority or by another independent party, such as the fire marshal or a certified independent testing company (e.g., electrical equipment testing). Documented testing for less complex equipment and repetitive equipment (of large quantities, e.g., air terminal units) may be directed by the Contractor alone, as approved by the Commissioning Authority, with spot retests and test report review by the Commissioning Authority.

Commissioning Objectivity
Project predesign commissioning scope is for typical level of objectivity. Commissioning Authority will have direct access to independently discuss issues with any party of the project team and by all issues identified by the commissioning team from initial identification being concurrently distributed directly to the Owner, Architect and Contractor.

Issue Management
Issue Management. Issues are legitimate for identification and distribution when, 1) Any requirements as delineated in the contract documents are not being met, or 2) When significant elements of the EWU's Project Requirements are not being met). Issues will be reported regardless of potential cost impacts to any party or potential impacts to the project schedule.

SECTION 06

APPENDIX E: MEMORANDA OF UNDERSTANDING

E. MEMORANDA OF UNDERSTANDING

The Lucy Covington Leadership House will further the goals of Eastern Washington University's commitment to the Memoranda of Understanding (MOUs) with three regional Tribes: Coeur d'Alene (July 26, 2019), Kalispel (February 12, 2018), and Spokane (April 15, 2019).

The primary purpose of the MOUs is to sustain and advance relationships between EWU and these Tribes. The purpose identified in the MOUs are summarized as follows:

- Establish an Annual Tribal Leadership Summit.
- Establish an American Indian Advisory Board where each Tribe has the authority to appoint one individual.
- Recruit, retain, and successfully graduate more American Indian students.
- Recruit, retain, and promote qualified American Indian faculty and staff to aid EWU in its mission and delivery of services to tribal communities and American Indian students.
- Strengthen partnerships between tribal communities and EWU academic and student support areas.
- Plan and construct a longhouse-style facility on campus that enhances the recruitment and success of American Indian students, acknowledges and honors the region's Tribes, and serves as a place for cultural learning and exchange for the entire community.

Through the MOUs, the preceding priorities will receive sustained attention from EWU and the Tribes to maintain communication and address shared objectives.

The MOUs are guided in spirit by the Centennial Accord between the Federally Recognized Indian Tribes in Washington State and the State of Washington of 1989. The accord affirms the sovereignty of Washington's federally recognized tribes and calls for clearer communication and better collaboration between tribal and state governments.

Lucy Covington Center Repository Research Agreement

Through an ongoing partnership with the Colville Confederated Tribes that Eastern Washington University formalized in the 'Lucy Covington Center Repository Research Agreement,' EWU intends to honor Lucy Covington's legacy. Within the Lucy Covington Initiative, emphasis areas have been identified: supporting future leaders; creating a confluence of culture and causes; and developing a Lucy Covington Archive.

The MOUs are included in this Appendix. A full copy of the Lucy Covington Center Repository Agreement (14 pages) is also available upon request.

Spokane Tribe of Indians

P.O. Box 100 • Wellpinit, WA 99040 • (509) 458-6500 • Fax: (509) 458-6575

April 15, 2019

Angela R. Jones
Chief of Staff – Eastern Washington University
129 Showalter Hall
Cheney, WA 99004

Re: Memorandum of Understanding Between the Spokane Tribe of Indians and Eastern Washington University

Dear Ms. Jones,

Enclosed please find two original copies of the Memorandum of Understanding Between the Spokane Tribe of Indians and Eastern Washington University ("MOU") and the Spokane Tribe of Indians regarding, among other things, establishing an Annual Tribal Leadership Summit and a Native American Advisory Board.

The Spokane Tribal Business Council ("Tribal Council") has approved the MOU and Chairwoman Carol Evans has signed on behalf of the Tribe. Please countersign both original copies, keep one original for your records, and return the other to the Tribe via the enclosed self-addressed return envelope. The Tribe looks forward to working with EWU to strengthen the relationship and enhance EWU's educational research and service partnerships and programs.

Respectfully,

Jessica Flett
Legal Counsel
Spokane Tribe of Indians

Encs.

Cc via email:
Chairwoman Carol Evans carol@spokanetribe.com
Nicole DeVon ndevon@ewu.edu

Eastern Washington University

Memorandum of Understanding Between
The Spokane Tribe of Indians and Eastern Washington University

This Memorandum of Understanding ("MOU") is entered into by Eastern Washington University ("EWU") and the Spokane Tribe and signed below, with reference to the following:

EWU recognizes and affirms established Federal policies under which Native American tribal governments are treated as distinct legal and political entities, with their own powers of self-government and self-determination.'

This MOU is being enacted for the purpose of enhancing and sustaining the government-to-government relationship between the Spokane Tribe of Indians and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Spokane Tribe.

EWU and the Spokane Tribe wish to formalize and sustain a structure that strengthens and advances the relationships between them and enhances EWU's educational research and service partnerships and programs involving tribes, American Indian students, and the broader American Indian community.

1. Purpose.

1.1 Based on this MOU, the following will occur to sustain and advance relationships between EWU and the Spokane Tribe:

1.1.1 Establishing an Annual Tribal Leadership Summit. At this government-to government meeting attended by elected tribal leaders and the EWU president, priority initiatives will be identified, discussed, and advanced.

1.1.2 Establishing a Native American Advisory Board ("Advisory Board") composed of tribal representatives, the EWU Vice President for Diversity and Inclusion, as well as appropriate EWU students, alumni, staff, and faculty. This group will address priorities and issues identified at the EWU Tribal Leadership Summit.

1.1.3 The Tribal Business Council of the Spokane Tribe of Indians shall have the authority to appoint one (1) individual of their choosing to serve on the Advisory Board.

1.1.4 Enhancing efforts, particularly through early outreach to middle schools and high schools, to recruit, retain and successfully graduate more American Indian students with university degrees.

1.1.5 Recruiting, retaining, and promoting qualified American Indian faculty and staff at the University in academic and administrative departments to aid EWU in its mission and delivery of services to tribal communities and American Indian students.

1.1.6 Strengthening partnership between tribal communities and EWU academic and student support areas.

1.1.7 Planning and constructing a longhouse-style facility on campus that enhances the recruitment and success of American Indian students, acknowledges and honors the region's tribes, and serves as a place for cultural learning and exchange for the entire community.

1.2 Through this MOU, the preceding priorities will receive sustained attention from EWU and the Spokane Tribe to maintain communication and address shared objectives.

1.3 This MOU will institutionalize, formalize and sustain these important relationships, ensuring that changes in leadership will not diminish the university's commitment to working with the tribe or the tribe's commitment to working with the university.

2. Terms and Working Principles

2.1 The parties entering into this Memorandum of Understanding agree to the following terms and working principles detailed in this section below, which will aid in creating mutual understanding and productive relationships.

2.2 **Unique Legal Status of the Tribe:** The unique legal status of tribes, rights reserved through treaties, agreements, historic and cultural interests, creates a unique relationship between tribes and state agencies, including EWU. Tribes maintain sovereign rights that predate the formation of the United States and the State of Washington and are guaranteed under treaties and federal laws.

2.3 **Government-to-Government:** Federally Recognized Indian Tribes have a special government-to-government relationship with the United States government. Government-to-government is also used to describe the relationship and protocols between tribes and other governments such as states. State agencies and tribes work directly with each other in a government-to-government fashion, rather than as subdivisions of other governments.

2.4 **1989 Centennial Accord:** This Memorandum of Understanding is guided by the *Centennial Accord Between the Federally Recognized Indian Tribes in Washington State and the State of Washington* of 1989. The Centennial Accord is published on the internet by the Governor's Office of Indian Affairs at www.goia.wa.gov/Government-to-Government/CentennialAgreement.html. A corresponding accord between the out-of-state tribes with treaty reserved rights in Washington State can be found at www.goia.wa.gov/Relations/OutOfStateAccord.pdf.

3. Implementation of MOU

3.1 This Memorandum of Understanding will become effective upon the signatures of the parties.

3.2 The parties shall meet and review progress under this agreement on an annual basis, in the format outlined within this memorandum.

3.3 This MOU may be amended by mutual written agreement of the parties at any time.

3.4 Any party may withdraw from this MOU by providing the other parties 30 days' written notice of its intent to withdraw.

The following signatory parties have executed this Memorandum of Understanding:

Spokane Tribe of Indians

Carol Evans
Chairwoman
Spokane Tribal Business Council / April 15, 2019

Eastern Washington University

MCullman
President, EWU

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE COEUR D'ALENE TRIBE AND EASTERN WASHINGTON UNIVERSITY

This Memorandum of Understanding ("MOU") is made between Coeur d'Alene Tribe ("the Tribe"), P.O. Box 408, Plummer, Idaho 83851, and the Eastern Washington University ("EWU"), 214 Showalter Hall, Cheney WA 99004, and signed below, with reference to the following:

EWU recognizes and affirms established Federal policies under which Native American tribal governments are treated as distinct legal and political entities, with their own powers of self-government and self-determination.

This MOU is being enacted for the purpose of enhancing and sustaining the government-to-government relationship between the Tribe and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Tribe.

EWU and the Tribe wish to formalize and sustain a structure that strengthens and advances the relationships between them and enhances EWU's educational research and service partnerships and programs involving tribes, American Indian students, and the broader American Indian community.

1. Purpose.

1.1 Based on this MOU, the following will occur to sustain and advance relationships between EWU and the Coeur d'Alene Tribe:

1.1.1 Establishing an Annual Tribal Leadership Summit. At this government-to government meeting attended by elected tribal leaders and the EWU president, priority initiatives will be identified, discussed, and advanced.

1.1.2 Establishing a Native American Advisory Board ("Advisory Board") composed of tribal representatives, the EWU Vice President for Diversity and Inclusion, as well as appropriate EWU students, alumni, staff, and faculty. This group will address priorities and issues identified at the EWU Tribal Leadership Summit.

1.1.3 The Tribal Council of the Coeur d'Alene Tribe shall have the authority to appoint one (1) individual of their choosing to serve on the Advisory Board.

1.1.4 Enhancing efforts, particularly through early outreach to middle schools and high schools, to recruit, retain and successfully graduate more American Indian students with university degrees.

1.1.5 Recruiting, retaining, and promoting qualified American Indian faculty and staff at the University in academic and administrative departments to aid EWU in its mission and delivery of services to tribal communities and American Indian students.

1.1.6 Strengthening partnership between tribal communities and EWU academic and student support areas.

1.1.7 Planning and constructing a longhouse-style facility on campus that enhances the recruitment and success of American Indian students, acknowledges and honors the region's tribes, and serves as a place for cultural learning and exchange for the entire community.

1.2 Through this MOU, the preceding priorities will receive sustained attention from EWU and the Coeur d'Alene Tribe to maintain communication and address shared objectives.

1.3 This MOU will institutionalize, formalize and sustain these important relationships, ensuring that changes in leadership will not diminish the university's commitment to working with the tribe or the tribe's commitment to working with the university.

2. Terms and Working Principles

2.1 The parties entering into this Memorandum of Understanding agree to the following terms and working principles detailed in this section below, which will aid in creating mutual understanding and productive relationships.

2.2 **Unique Legal Status of the Tribe:** The unique legal status of tribes, rights reserved through treaties, agreements, historic and cultural interests, creates a unique relationship between tribes and state agencies, including EWU. Tribes maintain sovereign rights that predate the formation of the United States and the State of Washington and are guaranteed under treaties and federal laws. Nothing in this MOU shall be construed as a waiver of the Tribe's inherent sovereign immunity.

2.3 **Government-to-Government:** Federally Recognized Indian Tribes have a special government-to-government relationship with the United States government. Government-to-government is also used to describe the relationship and protocols between tribes and other governments such as states. State agencies and tribes work directly with each other in a government-to-government fashion, rather than as subdivisions of other governments.

2.4 **1989 Centennial Accord:** This Memorandum of Understanding is guided in the spirit of the *Centennial Accord Between the Federally Recognized Indian Tribes in Washington State and the State of Washington* of 1989. The Centennial Accord is published on the internet by the Governor's Office of Indian Affairs at www.goia.wa.gov/Government-to-Government/CentennialAgreement.html. A corresponding accord between the out-of-state tribes with treaty reserved rights in

Washington State can be found at www.goia.wa.gov/Relations/OutOfStateAccord.pdf.

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3.1 This Memorandum of Understanding will become effective upon the signatures of the parties.

3.2 The parties shall meet and review progress under this agreement on an annual basis, in the format outlined within this memorandum.

3.3 This MOU may be amended by mutual written agreement of the parties at any time.

3.4 Any party may withdraw from this MOU by providing the other parties 30 days' written notice of its intent to withdraw.

The following signatory parties have exeeuted this Memorandum of Understanding:

Coeur d'Alene Tribe	**Eastern Washington University**
Ernest L Stensgar Ernest Stensgar, Chairman	JMCullinan EWU President Mary Cullinan
07/12/2019 Date	7/26/19 Date

EXECUTIVE OPERATIONS
MEMORANDUM OF UNDERSTANDING
BETWEEN CDA TRIBE AND EASTERN
WASHINGTON UNIVERSITY

CDA RESOLUTION 121 (2019)

WHEREAS, the Coeur d'Alene Tribal Council has been empowered to act for and on behalf of the Coeur d'Alene Tribe pursuant to the revised Constitution and Bylaws, adopted by the Coeur d'Alene Tribe by referendum November 10, 1984, and approved by the Secretary of the Interior, Bureau of Indian Affairs, December 21, 1984; and

WHEREAS, the Coeur d'Alene Tribal Council has a responsibility for the Health, Welfare, and Economic Development of the Tribe and its members; and

WHEREAS, the Coeur d'Alene Tribe is committed to promoting higher education among the tribal membership; and

WHEREAS, the Tribe and the Tribal Liaison to the President of Eastern Washington University (EWU) met to discuss ways to enhance and sustain the government-to-government relationship between the Tribe and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Tribe; and

WHEREAS, the Tribe and EWU have worked together to develop an MOU establishing a Tribal Leadership Summit, a Native American Advisory Board and multiple ways to enhance outreach and recruitment of middle school and high school students on the reservation; and

WHEREAS, the Tribe and EWU shall enter into a Memorandum of Understanding ("MOU") which enhances and sustains the government-to-government relationship between the Tribe and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Tribe; and

NOW, THEREFORE, BE IT RESOLVED, That the Coeur d'Alene Tribal Council hereby approves the MOU with Eastern Washington University to strengthen and enhance the government to government relationship between the Tribe and EWU, and promote higher education in the reservation community; and

BE IT FURTHER RESOLVED, That the Coeur d'Alene Tribal Chairman or his designee is authorized to sign all necessary documents related to this request on behalf of the Coeur d'Alene Tribe.

CERTIFICATION

The foregoing resolution was adopted at a meeting of the Coeur d'Alene Tribal Council held at the Tribal Administrative Building, 850 A Street, Plummer, Idaho, on July 11, 2019, with the required quorum present by a vote of 5 FOR 0 AGAINST 0 ABSTAIN 1 OUT

ERNEST L. STENSGAR, CHAIRMAN
COEUR D'ALENE TRIBAL COUNCIL

DONALD E. SCZENSKI, SEC/TREASURER
COEUR D'ALENE TRIBAL COUNCIL

C010071

Eastern Washington University

Memorandum of Understanding Between
The Kalispel Tribe of Indians and Eastern Washington University

This Memorandum of Understanding ("MOU") is entered into by Eastern Washington University ("EWU") and the Kalispel Tribe and signed below, with reference to the following:

EWU recognizes and affirms established Federal policies under which Native American tribal governments are treated as distinct legal and political entities, with their own powers of self-government and self-determination.'

This MOU is being enacted for the purpose of enhancing and sustaining the government-to-government relationship between the Kalispel Tribe of Indians and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Kalispel Tribe.

EWU and the Kalispel Tribe wish to formalize and sustain a structure that strengthens and advances the relationships between them and enhances EWU's educational research and service partnerships and programs involving tribes, American Indian students, and the broader American Indian community.

1. Purpose.

1.1 Based on this MOU, the following will occur to sustain and advance relationships between EWU and the Kalispel Tribe:

1.1.1 Establishing an Annual Tribal Leadership Summit. At this government-to government meeting attended by elected tribal leaders and the EWU president, priority initiatives will be identified, discussed, and advanced.

1.1.2 Establishing a Native American Advisory Board ("Advisory Board") composed of tribal representatives, the EWU Vice President for Diversity and Inclusion, as well as appropriate EWU students, alumni, staff, and faculty. This group will address priorities and issues identified at the EWU Tribal Leadership Summit.

1.1.3 The Tribal Business Council of the Kalispel Tribe of Indians shall have the authority to appoint one (1) individual of their choosing to serve on the Advisory Board.

1.1.4 Enhancing efforts, particularly through early outreach to middle schools and high schools, to recruit, retain and successfully graduate more American Indian students with university degrees.

1.1.5 Recruiting, retaining, and promoting qualified American Indian faculty and staff at the University in academic and administrative departments to aid EWU in its mission and delivery of services to tribal communities and American Indian students.

2/1/18

1.1.6 Strengthening partnership between tribal communities and EWU academic and student support areas.

1.1.7 Planning and constructing a longhouse-style facility on campus that enhances the recruitment and suceess of American Indian students, acknowledges and honors the region's tribes, and serves as a place for cultural learning and exchange for the entire community.

1.2 Through this MOU, the preceding priorities will receive sustained attention from EWU and the Kalispel Tribe to maintain communication and address shared objectives.

1.3 This MOU will institutionalize, formalize and sustain these important relationships, ensuring that changes in leadership will not diminish the university's commitment to working with the tribe or the tribe's commitment to working with the university.

2. Terms and Working Principles

2.1 The parties entering into this Memorandum of Understanding agree to the following terms and working principles detailed in this section below, which will aid in creating mutual understanding and productive relationships.

2.2 **Unique Legal Status of the Tribe:** The unique legal status of tribes, rights reserved through treaties, agreements, historic and cultural interests, creates a unique relationship between tribes and state agencies, including EWU. Tribes maintain sovereign rights that predate the formation of the United States and the State of Washington and are guaranteed under treaties and federal laws.

2.3 **Government-to-Government:** Federally Recognized Indian Tribes have a special government-to-government relationship with the United States government. Government-to-government is also used to describe the relationship and protocols between tribes and other governments such as states. State agencies and tribes work directly with each other in a government-to-government fashion, rather than as subdivisions of other governments.

2.4 **1989 Centennial Accord:** This Memorandum of Understanding is guided in the spirit of the *Centennial Accord Between the Federally Recognized Indian Tribes in Washington State and the State of Washington* of 1989. The Centennial Accord is published on the internet by the Governor's Office of Indian Affairs at www.goia.wa.gov/Government-to-Government/CentennialAgreement.html. A corresponding accord between the out-of-state tribes with treaty reserved rights in Washington State can be found at www.goia.wa.gov/Relations/OutOfStateAccord.pdf.

3. Implementation of MOU

3.1 This Memorandum of Understanding will become effective upon the signatures of the parties.

2/1/18

C010071

3.2 The parties shall meet and review progress under this agreement on an annual basis, in the format outlined within this memorandum.

3.3 This MOU may be amended by mutual written agreement of the parties at any time.

3.4 Any party may withdraw from this MOU by providing the other parties 30 days' written notice of its intent to withdraw.

The following signatory parties have executed this Memorandum of Understanding:

Kalispel Tribe of Indians	**Eastern Washington University**
	EWU President Mary Cullinan
2-6-18 Date	2/12/18 Date

2/1/18

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Section 07

SUPPLEMENTAL APPENDICES

A. Sustainability Workshop Summary

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SECTION 07

SUPPLEMENTAL APPENDIX A: SUSTAINABILITY WORKSHOP SUMMARY

A sustainability workshop for the Lucy Covington Leadership House was held on March 20, 2024 and engaged EWU staff with the consultant team. The meeting notes and presentation are included on the following pages.

MEETING MINUTES

PROJECT:	EWU Lucy Covington Leadership House	**PROJECT NO:**	2022407
DATE:	20 March 2024	**FILE NAME:**	
SUBJECT:	**Sustainability Charette Meeting Minutes**		
MEETING DATE:	20 March 2024	**TIME:**	12:30 pm- 2 pm
LOCATION:	https://ewu.zoom.us/j/81900040773		

ATTENDEES:	Eric Budsberg	EWU	ebudsberg@ewu.edu
	Troy Bester	EWU	tbester@ewu.edu
	Kris Jeske	EWU	kjeske1@ewu.edu
	Marijana Misic	Mahlum	mmisic@mahlum.com
	Scheer Chan	Mahlum	schan@mahlum.com
	Nima Motahari	Womer	nimam@wwomer.com
	Tony Janson	Womer	tonyj@wwomer.com
	Cade Egbert	Womer	cade@wwomer.com
	Kenny Hoener	Kartchner	kenny@kartchnerengineering.com
	Layla Lechich	Kartchner	layla@kartchnerengineering.com
COPY TO:	Chad Lang	Womer	chad@wwomer.com
	Wayne Rogers	Womer	wayner@wwomer.com
	Mark Cork	Mahlum	mcork@mahlum.com
	Mark Kartchner	Kartchner	Mark@kartchnerengineering.com

The following represents the architect's understanding of discussions held and decisions reached in the meeting. Anyone with amendments to these minutes should notify the author within five (5) days of the minutes date in order to amend as appropriate.

ACTION ITEMS

> None

ITEM	DISCUSSION	ACTION BY
1.1	Introductions	
1.2	EWU Climate Action Plan & Certification Paths: The team broadly reviewed EWU's 2022-2025 Climate Action Plan, following by discussion of different sustainability certification paths. LEED Certification > Project will be required to meet LEED Silver level certification. Other campus projects were able to achieve Gold level certification, and that can be a target for Lucy Covington Leadership House project. International Living Future Certifications The team broadly reviewed different levels of ILFI Certification systems > EWU noted CORE Green Building Certification may be worthwhile to consider if requirements appear to be in strong alignment with the project > Further review is needed to better understand how this certification compares with LEED Gold level; to understand the level of effort and differences in certifications. > Exploring a certification program alternative to LEED may be of interest to keep up with or surpass other rival universities that are pursuing alternative sustainability certifications.	
1.3	Sustainability Considerations SITE The team discussed ways to reconnect and relate to the natural environment and the surrounding context through baseline and stretch goal lenses. > Baseline: open space, bioretention swales and rain gardens, reduction of het island effect on the project site > Creation of ethnobotanical garden- pilot credit. Medicinal garden has been identified as a desired component of the project. > Stretch goals: permeable paving may be a consideration, but a green roof is not desired as it is not as successful considering the climate. WATER The team discussed ways to rethink how we use water, respect it as a natural resource, and work in harmony with natural water flows. > Baseline use of low flow fixtures and ultra-low flow fixtures acceptable. Waterless urinals have been problematic in the past and should be avoided. > Baseline heat pump water heating systems can be implemented along with hot water assist form water source heat pump units	

combined with hot water recirculation to provide building domestic hot water. This will be explored and

- Stretch goal: Rainwater harvesting, and grey water reuse requires complex systems and space that would be better used in upgraded efficiencies and energy use systems. These will not be pursued unless needed.
- Stretch goal: Advanced water metering of systems to identify possible water saving strategies and solutions to implement was an option to explore.

ENERGY

The team discussed ways to reduce our reliance on carbon intensive energy by designing efficient, low-energy systems and relying on renewable forms of energy.

- Baseline will use high performance HVAC equipment in conjunction with Micro District Ground Source System in combination with decoupled high efficiency DOAS system which will achieve EUI of low 20's.
- Passive cooling via operable windows is seen as problematic due to security and outdoor air conditions that present themselves in the area throughout the year. This would also be problematic with louvered openings and wind sails as well.
- Passive style envelope to help energy usage systems perform at the highest level possible is encouraged.
- Interface between water source heat pumps and domestic water systems to help drop energy usage across systems will help overall system efficiency.
- Stretch goal: Enhanced commissioning can be used to ensure systems are being properly utilized to maximize efficiency. This was a possibility to investigate the project.
- Possible credits for renewable energy power agreements that may already be used on campus. Research will be done to see if this is viable.
- PV panels are desirable, but the team discussed the challenge of power storing to get the project towards net zero, due to both first cost and efficiency loss.

CARBON

Team discussed ways to reduce our reliance on carbon intensive energy by designing efficient, low-energy systems and relying on renewable forms of energy.

- Project would pursue CLT and sustainably sourced lumber to reduce project's embodied carbon impacts.
- Low carbon concrete mix will be another way to reduce overall carbon footprint of the building.

- Team concluded that purchasing carbon offsets is not of interest due to lack of transparency and measurable outcomes.

HEALTH

The team discussed impacts and the relationship of the quality of materials, air and environment on human health.

- Some baseline identified goals are design to Universal Design Principles, incorporating biophilia and access to daylight, but also specifying materials with Declare label.
- Advanced filtration was also brought up using higher efficient filters on DOAS systems as well as the possibility of contaminant mitigation strategies such as ionization, electrostatic filters, UV light or HEPA filtration. This would be on a case-by-case basis and will be coordinated through design and implemented if desired.
- Health can also be increased ventilation to spaces throughout the building while attaining credits. This was not commented on but will be investigated if desired.
- Decreased acoustical reverberation can lead to a better overall environment and will be accounted for in design using duct lining, duct silencers, equipment selection and material systems chosen. This reduces the building “shock” factor when entering space.
- Thermal comfort will be guaranteed through proper zoning and control of HVAC system such that each occupant will have optimized productivity and wellbeing. This was encouraged.

The meeting graphics presented are included in the attached document:

24 0320 Sustainability Charette_presentation.PDF

END OF MEETING MINUTES


Lucy Covington Leadership House
Project Update
March 20, 2024
WOMER & ASSOCIATES
mahlum


Meeting Agenda
Introductions (1min)
EWU Climate Action Plan & Certification Paths (9 min)
Sustainability Goals & Strategies (60 min)
Next Steps (5 min)

Lucy Covington Leadership House
EWU Climate Action Plan

GREENHOUSE GAS REDUCTION STRATEGIES

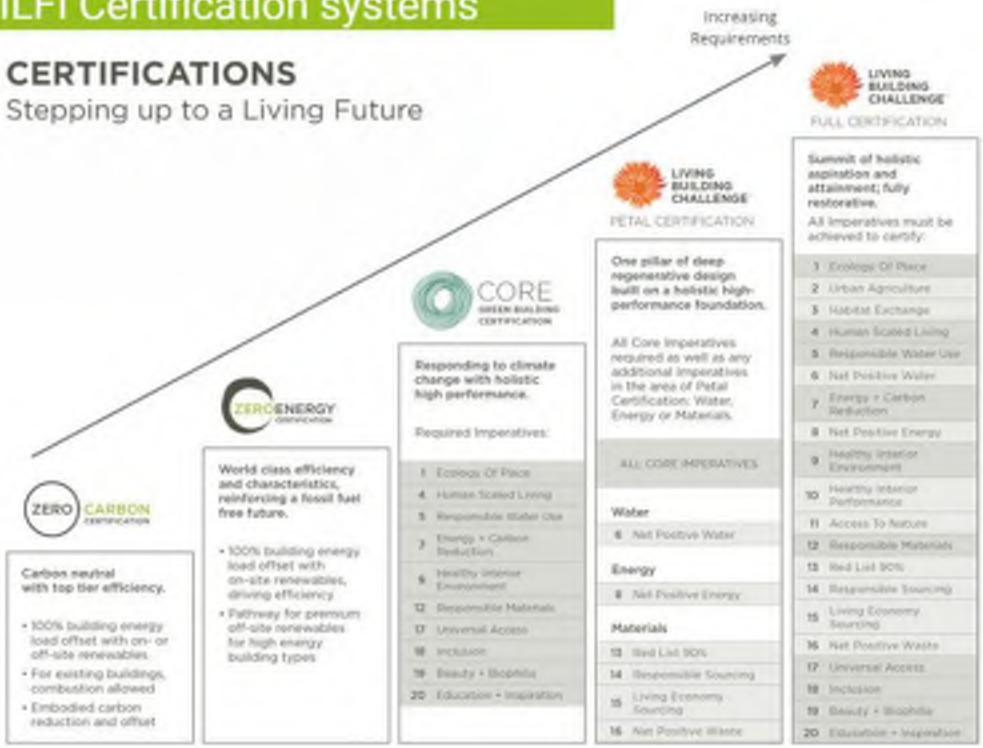
- BUILDING EFFICIENCY
- TRANSITIONING CENTRAL PLANT TO RENEWABLE SOURCES
- LAND RESTORATION
- TRANSPORTATION "GREENIFICATION"

Lucy Covington Leadership House
Sustainability can look different

SITE	WATER	ENERGY	HEALTH	CARBON
Reconnect and relate to the natural environment and the surrounding context.	Rethink how we use water, respect it as a natural resource, and work in harmony with natural water flows.	Reduce our reliance on carbon intensive energy by designing efficient, low-energy systems and relying on renewable forms of energy.	Human health and potential is strongly impacted by the relationship to and quality of materials, air and environment.	Carbon emissions into the atmosphere are a primary driver of global warming and climate change.

LEED NC

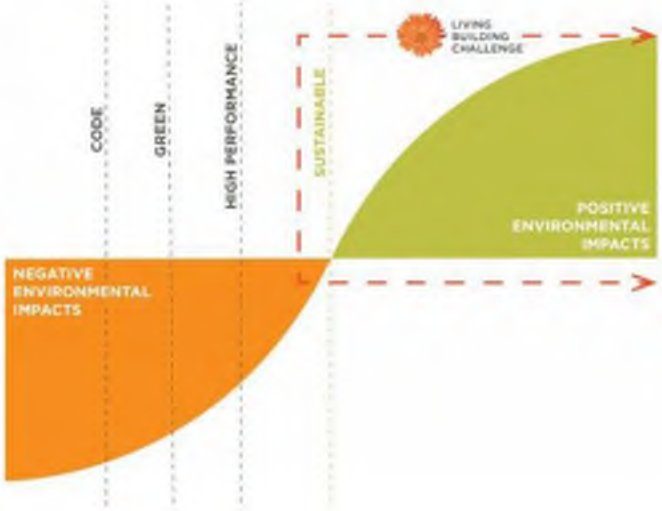
ILFI Certification systems



ILFI Certification systems

SETTING THE IDEAL AS THE INDICATOR OF SUCCESS

THE LIVING BUILDING CHALLENGE IS A PHILOSOPHY, CERTIFICATION, AND ADVOCACY TOOL FOR PROJECTS TO MOVE BEYOND MERELY BEING LESS BAD AND TO BECOME TRULY REGENERATIVE.



INSTEAD OF A WORLD THAT IS MERELY A LESS BAD VERSION OF THE ONE WE CURRENTLY HAVE- WE ASK A SIMPLE AND PROFOUND QUESTION- WHAT DOES GOOD LOOK LIKE?

Site

Open Space
LEED Credit can be obtained by providing 30% or more of open space for the entire site.

Bioretention Swales / Rain Gardens
These areas to utilize native plants, provide water quality treatment and flow control.

Large Shade Trees
LEED Heat Island Reduction Credit to shad paved areas

Ethnobotanical Garden
Focus on local tribe's native edible plants and their other cultural uses.

Permeable Paving

Green Roof

OPPORTUNITES

CHALLENGES

BASELINE | **STRETCH GOALS** | **DISCUSSION**

Water

Efficient Plumbing Fixtures
Reduce water demand by selecting low-flow or ultra low flow fixtures

Efficient Hot Water Heating & Recirculation
Reduce hot water consumption by installing high efficient water heaters and circulation pumps

Drought Tolerant / Native Plantings
Select plants that will thrive in the PNW climate all year long

RAINWATER HARVESTING

Rainwater Harvesting
Display rain water catchement systems for educational purposes

Advance Water Metering
Identify opportunities for improvement through fixture metering

Greywater

Grey Water
Used water from sinks, showers, etc. without harsh chemicals

OPPORTUNITES

CHALLENGES

BASELINE | **STRETCH GOALS** | **DISCUSSION**

Energy

Washington State Energy Code
Hi-performance envelope
Reduced plug loads + plug load control
Highly efficient HVAC systems with heat recovery
Highly efficient LED lighting systems with automatic reduction controls

Additional Efficiency Package
More efficient HVAC performance, High efficiency service water heating, enhanced envelope, reduced air filtration, Reduced lighting power, Enhanced digital lighting control, Minimum 40 KW PV array

Luminaire Level Lighting Controls
Reduced power + student engagement

High performance HVAC
Mhoo district ground source system- constant ground temperature. High system coefficient of performance.

Decoupled - Separating Ventilation and Space conditioning
(Ventilation) Dedicated outdoor air system with heat recovery
(Space conditioning) Air to water heat pump with heating/chilled water system.

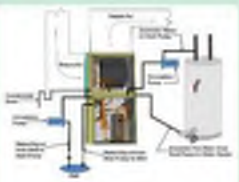
Code	Washington State Energy Code			Seattle Energy Code		
Version	2012	2015	2018 DOAS	2012	2015	2018 DOAS
EUI - BASE	50	48	39	48	42	36
EUI HIGH PERF	17-20					

Similar Past Projects
Energy performance relative to baseline (code) and high performance

Net Zero Energy (EUI 17-20)
The building produces as much or more energy than it uses.
Maximize on-site solar PV & High performance HVAC system.

Passive House Level Envelope
High levels of insulation and high-quality windows. Building airtightness, and minimized thermal bridging.

Passive Cooling
Reduce the amount of mechanical equipment and take advantage of the PNW temperate climate via windows controls tied to HVAC systems.



Building/System/Spaces
Look for synergies between systems, spaces to minimize and create effective and efficient system.

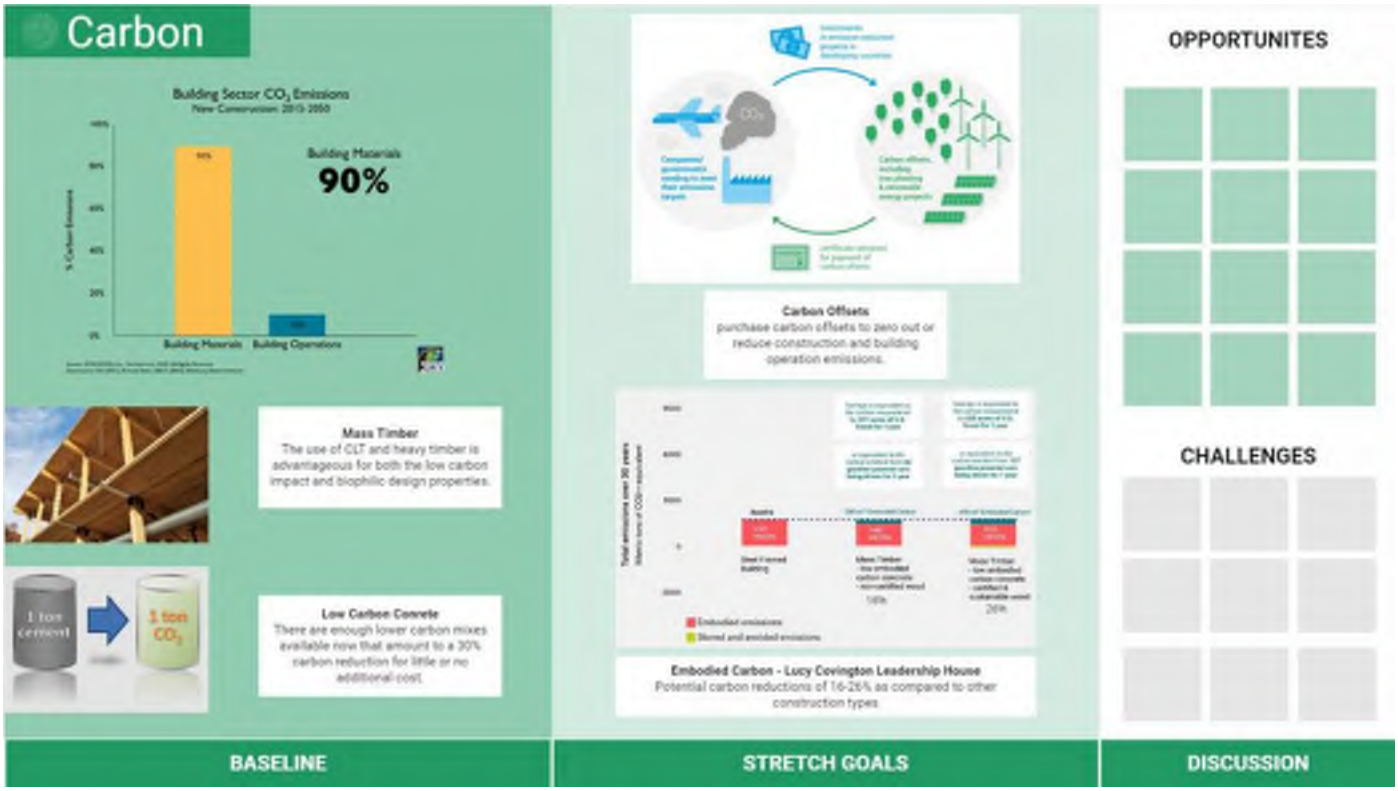
Enhanced Commissioning
Commissioning agent to facilitate assistance through design, construction and post construction operation to ensure owner intent and quality is met

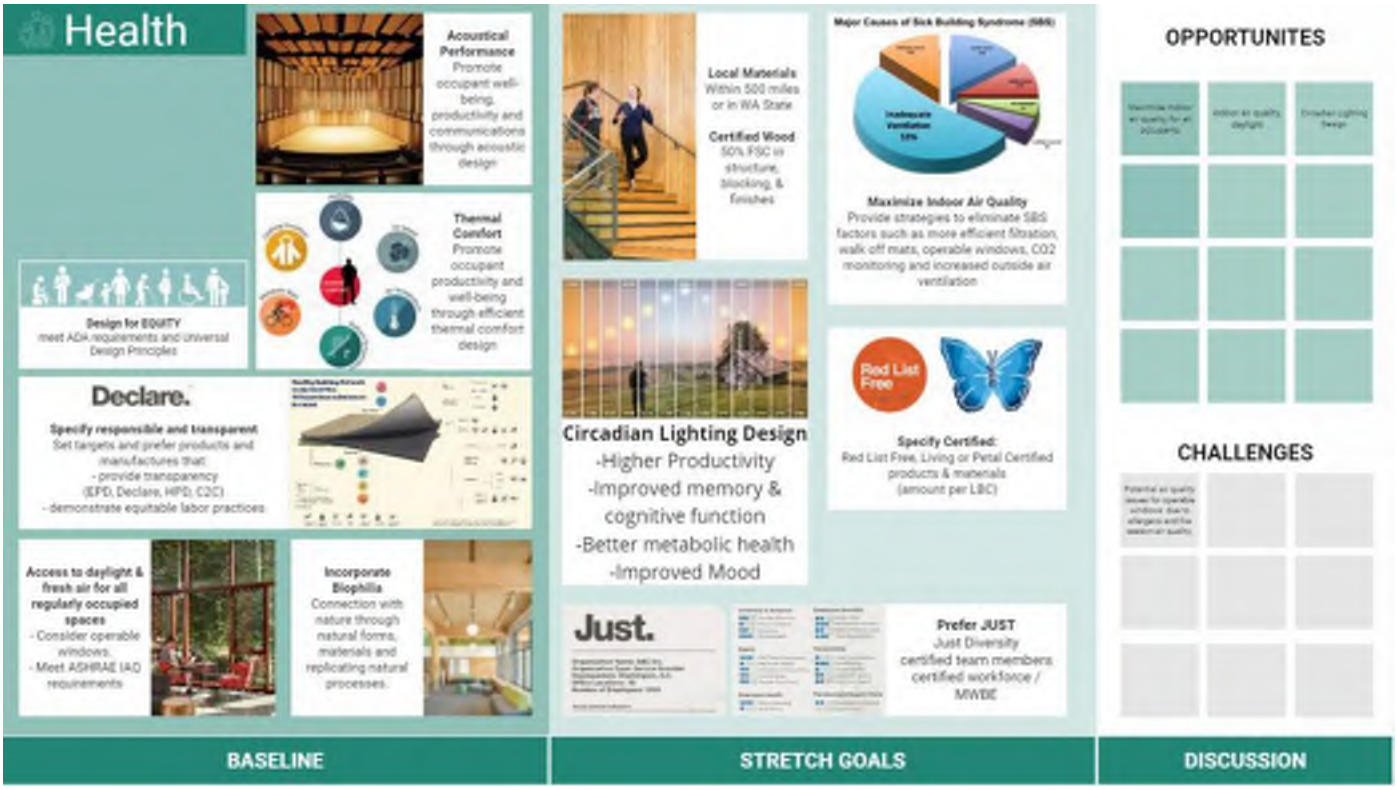
Renewable Energy
Reduce environmental and economic impacts through use of renewable energy sources and reduction of fossil fuel energy systems

OPPORTUNITES

CHALLENGES

BASELINE | **STRETCH GOALS** | **DISCUSSION**


Carbon
Building Sector CO_2 Emissions
New Construction: 2015-2050
Building Materials
90%
Building Materials
Building Operations
Mass Timber
The use of CLT and heavy timber is advantageous for both the low carbon impact and biophilic design properties.
1 ton cement
1 ton CO_2
Low Carbon Concrete
There are enough lower carbon mixes available now that amount to a 30% carbon reduction for little or no additional cost.
Carbon Offsets
purchase carbon offsets to zero out or reduce construction and building operation emissions.
Embodied Carbon - Lucy Covington Leadership House
Potential carbon reductions of 16-26% as compared to other construction types
OPPORTUNITES
CHALLENGES
BASELINE
STRETCH GOALS
DISCUSSION


Health
Acoustical Performance
Promote occupant well-being, productivity and communications through acoustic design
Thermal Comfort
Promote occupant productivity and well-being through efficient thermal comfort design
Design for EQUITY
meet ADA requirements and Universal Design Principles
Declare.
Specify responsible and transparent
Set targets and prefer products and manufactures that:
- provide transparency (EPD, Declare, HPD, C2C)
- demonstrate equitable labor practices
Access to daylight & fresh air for all regularly occupied spaces
- Consider operable windows.
- Meet ASHRAE IAQ requirements
Incorporate Biophilia
Connection with nature through natural forms, materials and replicating natural processes.
Local Materials
Within 500 miles or in WA State
Certified Wood
50% FSC in structure, blocking, & finishes
Major Causes of Sick Building Syndrome (SBS)
Inadequate ventilation
Maximize Indoor Air Quality
Provide strategies to eliminate SBS factors such as more efficient filtration, walk off mats, operable windows, CO2 monitoring and increased outside air ventilation
Red List Free
Specify Certified:
Red List Free, Living or Petal Certified products & materials (amount per LBC)
Circadian Lighting Design
-Higher Productivity
-Improved memory & cognitive function
-Better metabolic health
-Improved Mood
Just.
Prefer JUST
Just Diversity certified team members certified workforce / MWBE
OPPORTUNITES
CHALLENGES
BASELINE
STRETCH GOALS
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SECTION 2

APPENDICES

2.8 EWU DECARBONIZATION PLAN (DRAFT)

Eastern Washington University

Decarbonization Plan: Capital Request Report

Version 2

August 30, 2024

CONTENTS

Section 1

Executive Summary

Key Takeaways

- The decarbonization plan will identify a path to meet EWU's goal of carbon neutrality, and to comply with Washington State HB1390 legislation.
- This is an intermediate deliverable, providing supporting info for the 2025-2027 capital request.
- The preferred decarbonized system is a nodal open-loop geothermal system – the cost of that system is part of a separate request (the Geothermal Node Plant request).
- The budgetary cost of ~$20,000,000 noted in this report is to connect the first nine buildings to the geothermal system and implement energy efficiency measures. This does not include the cost of the geothermal plant itself.

Executive Summary

Introduction and Report Purpose

Eastern Washington University is developing a decarbonization plan with the long-term goal of eliminating fossil fuels at its central heating plant. This plan will not only help EWU achieve its goal of becoming a carbon neutral institution but will also align with the requirements of Washington State's House Bill 1390. This report outlines EWU's preferred decarbonized system vision and provides rough order of magnitude (ROM) costs for connecting the first group of existing buildings to that system and implementing energy efficiency measures. **The preferred decarbonized system is a nodal open-loop geothermal system. The cost of the geothermal plant itself and the associated distribution piping is being developed via the Geothermal Node Plant request. The ROM cost to convert the nine buildings in Figure 1 to the new plant is roughly $19,800,000.** These are "all in" costs, reflective of the total cost EWU can expect when implementing these projects. Costs at this stage are for budgetary purposes, and will need to be refined during the next stage of development/implementation.

Figure 1: Buildings Connecting to First Geothermal Node

Key Considerations

- **Capital Request:** This report provides the ROM costs for converting nine existing buildings (see Figure 1) for connection to the first nodal geothermal plant. It also includes the cost of implementing specific energy efficiency measures, which should be implemented simultaneously with the building conversions for optimal value. The cost of the plant and other projects are budgeted through separate efforts as follows:
    - The cost of the first geothermal nodal plant and the associated distribution piping is being provided via the Geothermal Node Plant request.
    - The cost for converting the Martin/Williamson building and connecting it to the first plant is included in a separate Predesign Estimate (not included here).
- **House Bill 1390 Compliance:** This report forms the basis for the Decarbonization Plan (required for HB 1390 compliance) that will be submitted to the Department of Commerce in 2025. In addition to the long-term goal of removing natural gas, the campus will also need to meet an **EUI target of 112 kBtu/sf/yr (to be confirmed with Commerce) and to establish Energy Management and Operations & Maintenance Plans (EMPOM).** ***Converting these buildings and implementing the recommended nodal geothermal system will meet the EUI target required for HB 1390 compliance.*** Key dates for 1390 compliance include:
    - 6/1/25: EMPOM period for buildings over 220,000 sf starts (outside the scope of this project)
    - 6/30/25: Decarb plan due to Commerce **(in progress)**
    - 2026 and 2027: EMPOM periods start for buildings 90,000 sf - 220,000 sf and 50,000 sf - 90,000 sf (outside the scope of this project)
    - 2030 and 2035: Decarb Plan update due to Commerce
    - 2040: Decarbonized campus, EUI target met
- **Funding:** Design and construction of the preferred decarbonized system depends on the State of Washington's continued support of decarbonization efforts (including geothermal technology). Geothermal projects are eligible for federal funding via the Inflation Reduction Act. A tax consultant can quantify the exact funding amount, depending on project phasing and construction. This report does not quantify those benefits.
- **Phasing:** The preferred geothermal nodal system is ideal for long-term phasing. This allows for the cost to be spread out over multiple biennium and provides flexibility in project implementation and sequencing.
- **Capital planning:** The decarbonization plan and capital planning will be strategically aligned. For instance, the demolition of older, less efficient, underutilized buildings not only supports the decarbonization objectives by reducing campus energy consumption but also offsets the costs associated with upgrading these less efficient structures to the new decarbonized system.

Preferred System

Based on the work done to date, a **nodal open-loop geothermal mechanical system** is the preferred system for reducing reliance on fossil fuels at a campus scale. The key components of this system include:

- **Open-Loop Geothermal:** The system will extract and reject heat to and from the aquifer beneath the campus. Electrically-powered water-to-water heat pumps will create heating hot water that will be distributed to individual buildings. This is opposed to the current heating system, which creates heat by burning fossil fuels. **This recommendation is based on the analysis performed in the previous geothermal study, which will need to be validated eventually by a geothermal test well.**

- **Nodal Plants:** The mechanical equipment needed to transfer the heating/cooling to the buildings will be in several smaller plants distributed across campus. This is opposed to the current plant configuration, which houses all heating/cooling equipment in a single central plant building. This approach allows for construction phasing, flexibility, and increased campus resilience.

- **Transitioning from Steam to Hot Water:** The current central system provides building heating primarily via steam. The proposed system will provide heating to buildings via hot water, removing steam as the primary source of heating. This will require new hot water distribution piping across campus. This will most likely employ a mix of low temperature hot water (i.e. 120-130°F) and high temperature hot water (i.e. 160-180°F), depending on the existing mechanical systems in the buildings.

- **Resiliency:** The existing central steam plant will remain in-place to provide backup to the decarbonized system. EWU recently received grant funding to install a carbon capture system on the existing fossil fuel-fired steam plant. In addition, if economics and supply become viable, the steam plant could be fired by renewable natural gas.

- **Cost, Incentives, Construction:** The proposed strategy's modular nature enables a gradual rollout that can be synchronized with the capital budget cycle, extensive renovations, and new construction, allowing for less impact to campus. The system is well-positioned for funding from the Inflation Reduction Act, ensuring the most cost-effective use of resources.

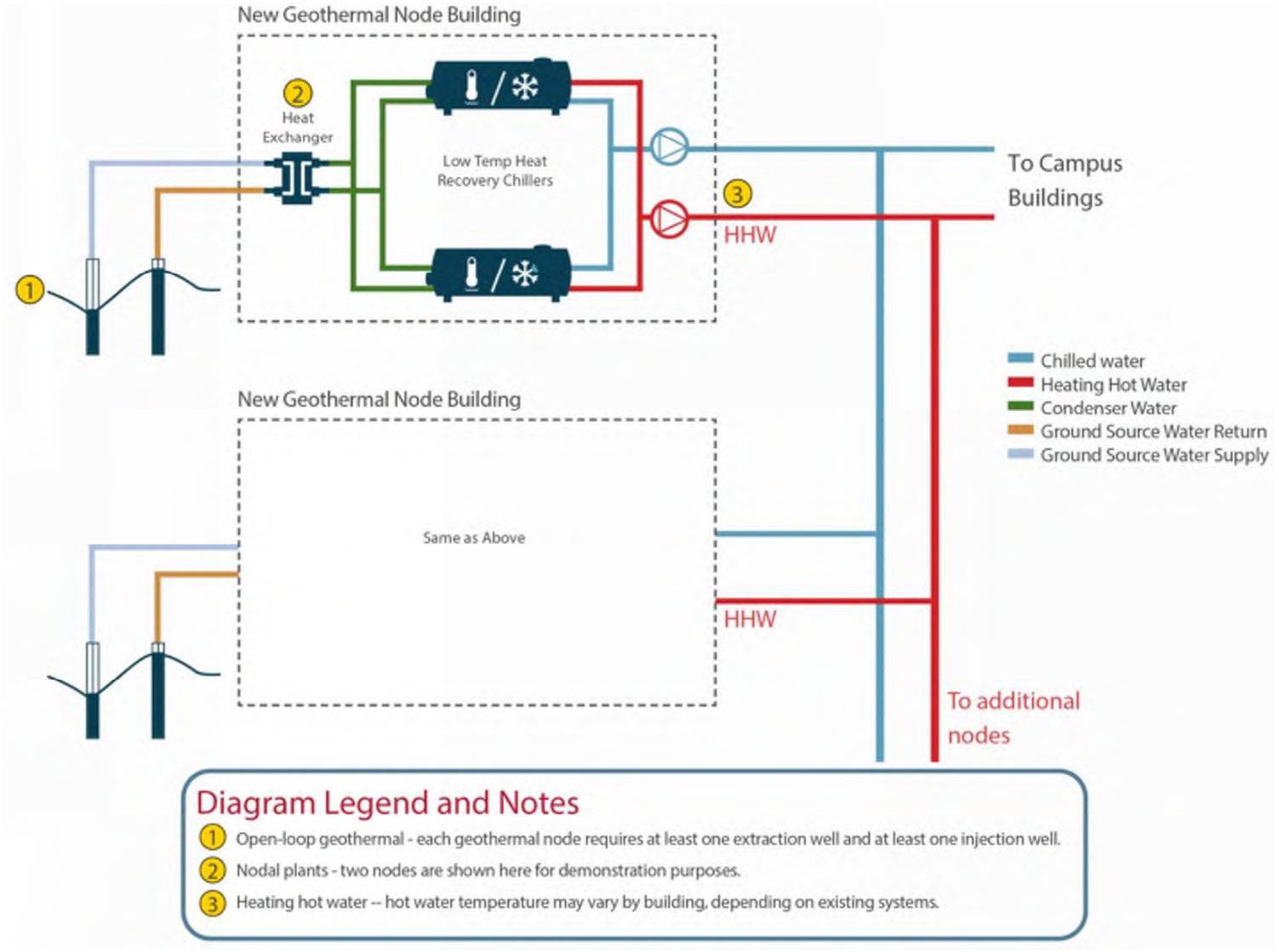


Figure 2: Proposed Nodal Plant Configuration

In-Building ROM Costs

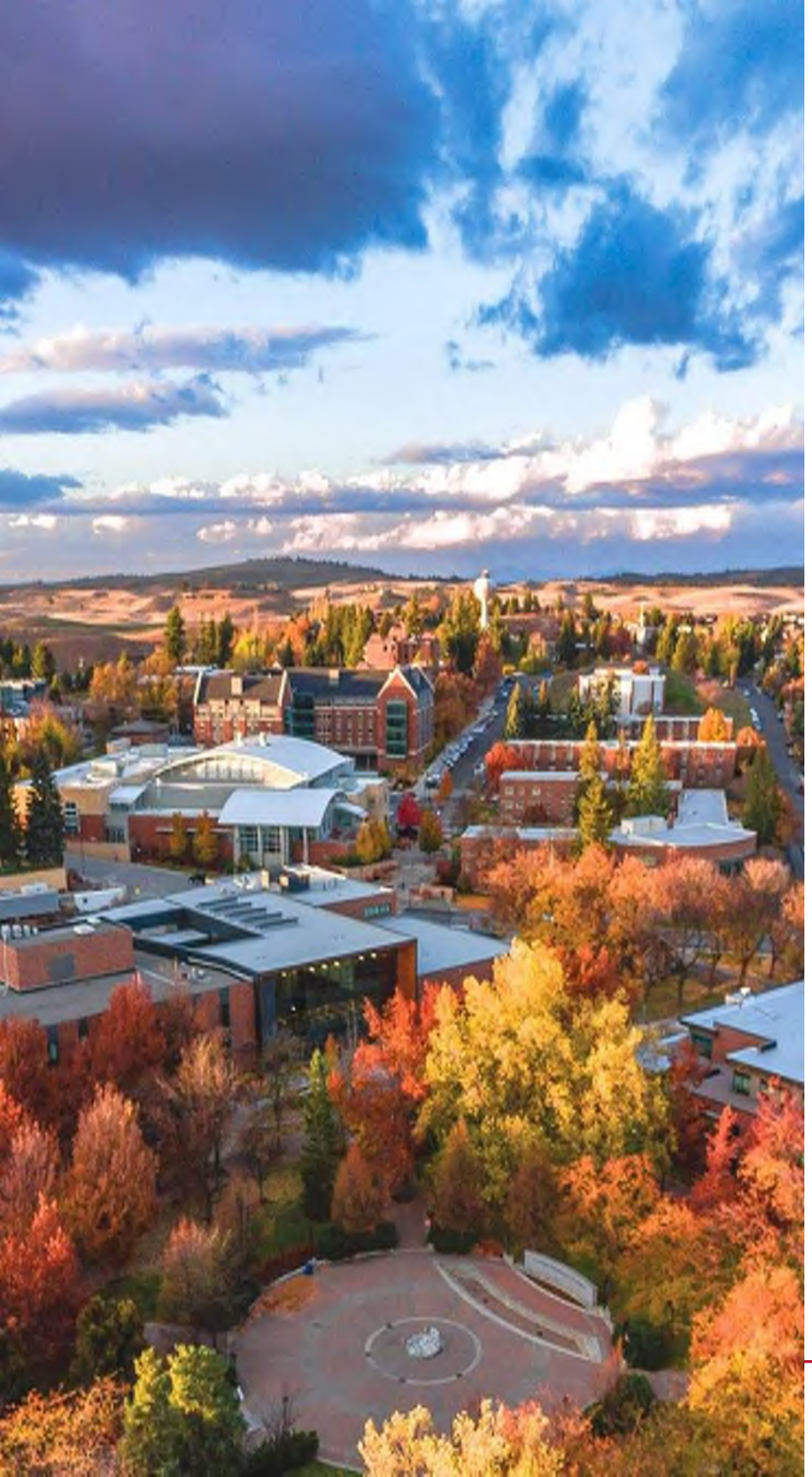
Table 1 presents the turnkey renovation ROM costs to convert the existing buildings to the preferred decarbonized system and implement recommended energy efficiency measures. The extent of these retrofits, the decision-making process behind them, and the recommended measures are described in Section 4 of this report. **These are "all in" costs, reflective of the total cost EWU can expect when implementing these projects. They are ROM costs for budgetary purposes, which will need to be refined during the next stage of development/implementation**. Additional cost estimating info is provided in Section 4 and the Appendices.

Project Next Steps

- Further define preferred decarbonized system and coordinate with utility.
- Further develop decarbonization plan for submittal to Commerce in May 2025.
- Construct test well to validate recommended system approach.

Table 1. In-Building Retrofit ROM Costs.

Building		Building Area [s.f.]	Renovation Cost [$]
JFK	JFK Library	124,496	$ 2,900,000
CEB	Computing & Engineering	98,476	$ 4,500,000
MUS	Music Building	47,618	$ 2,400,000
THE	University Theater	41,164	$ 1,900,000
ART	Art Building	34,469	$ 3,100,000
SUT	Sutton Hall	31,927	$ 900,000
HUS	Huston Hall	27,424	$ 1,700,000
CMC	Communications Building	19,289	$ 1,100,000
RTV	Radio/TV Building	16,980	$ 1,100,000
Total			**$ 19,600,000**



Section 2

Campus Existing Conditions

Key Takeaways

- The existing steam heating system accounts for 95% of Scope 1 campus carbon emissions and ~70% of Scope 1 and 2 carbon emissions.
- The campus is heating-dominated with spare steam capacity.
- The campus electrical system has significant capacity available to accommodate added loads.

Campus Energy Use

The EWU campus is served by electricity from the City of Cheney and natural gas from Avista. The central plant provides most of the heating and cooling on campus. Natural gas is consumed at the central utility plant to produce campus steam. Natural gas is also used in a smaller magnitude throughout campus at individual buildings for domestic hot water heating systems, process loads, and for cooking. Campus data below is based on utility bill data and Department of Ecology reporting.

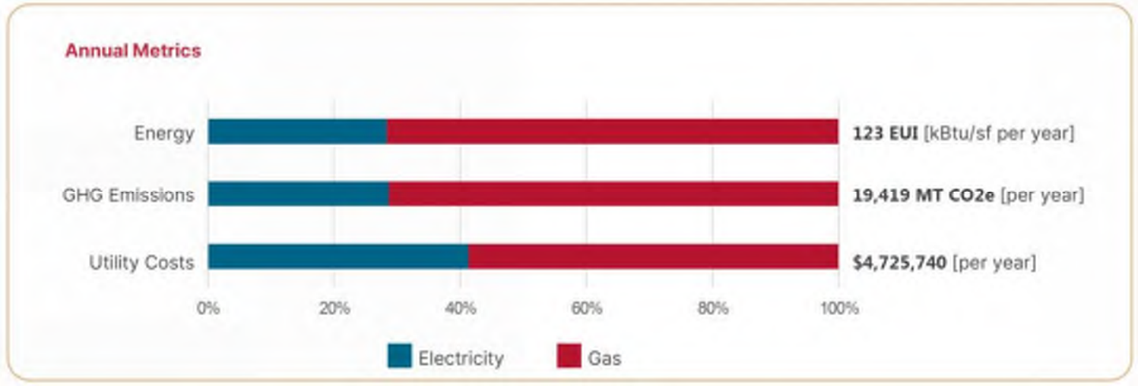


Figure 3: Annual Primary Energy Use

Campus Energy - Enduse Breakdown

The sankey diagram to the right shows how energy is used across the EWU campus. While there are some disparate fossil fuel (natural gas) uses across campus, the majority of fossil fuel use is attributed to the central steam plant loop. Note this diagram does not include campus vehicles using fossil fuels, as that usage is outside the scope of this project. For the electricity and gas breakouts in this chart, data is based on:

- Natural gas: the breakout between district heat and remaining gas is based on utility data.
- Electricity: the breakout between electricity and district cooling is based on similar campuses. It has been adjusted to account for Cheney's cooling degree days.

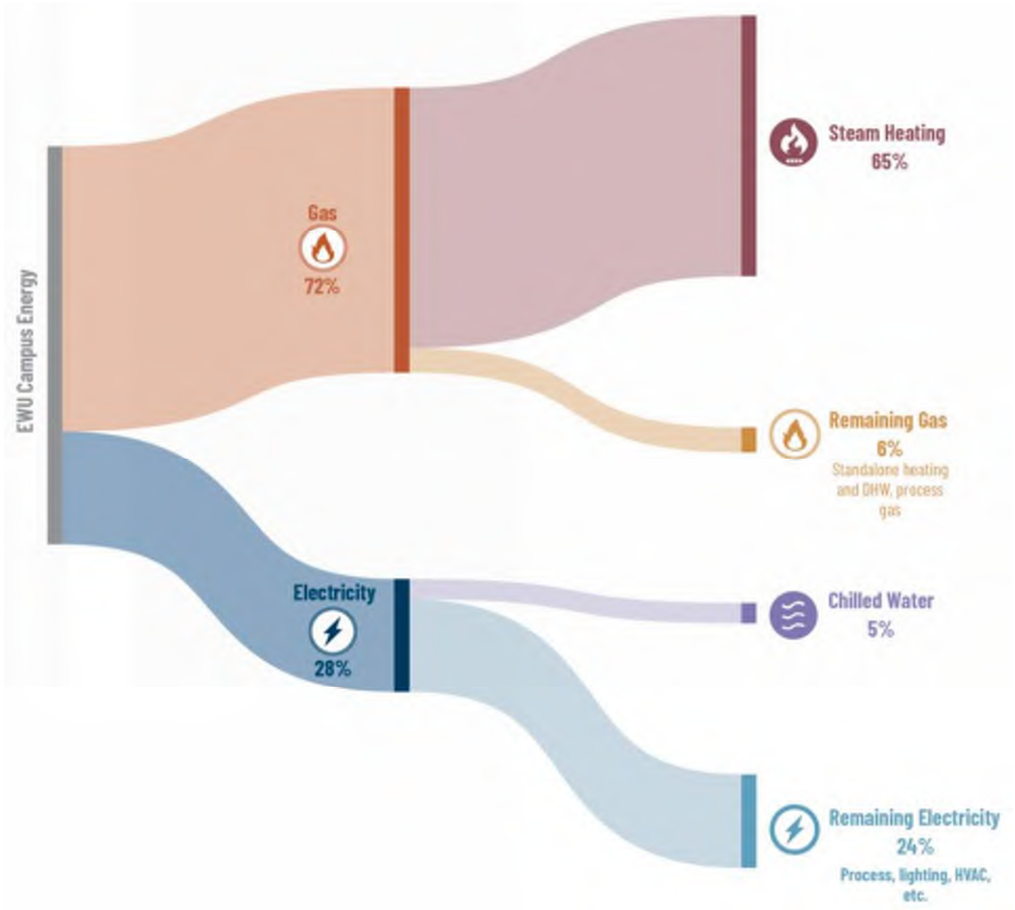


Figure 4: EWU Sankey Diagram of Campus Primary Energy Use

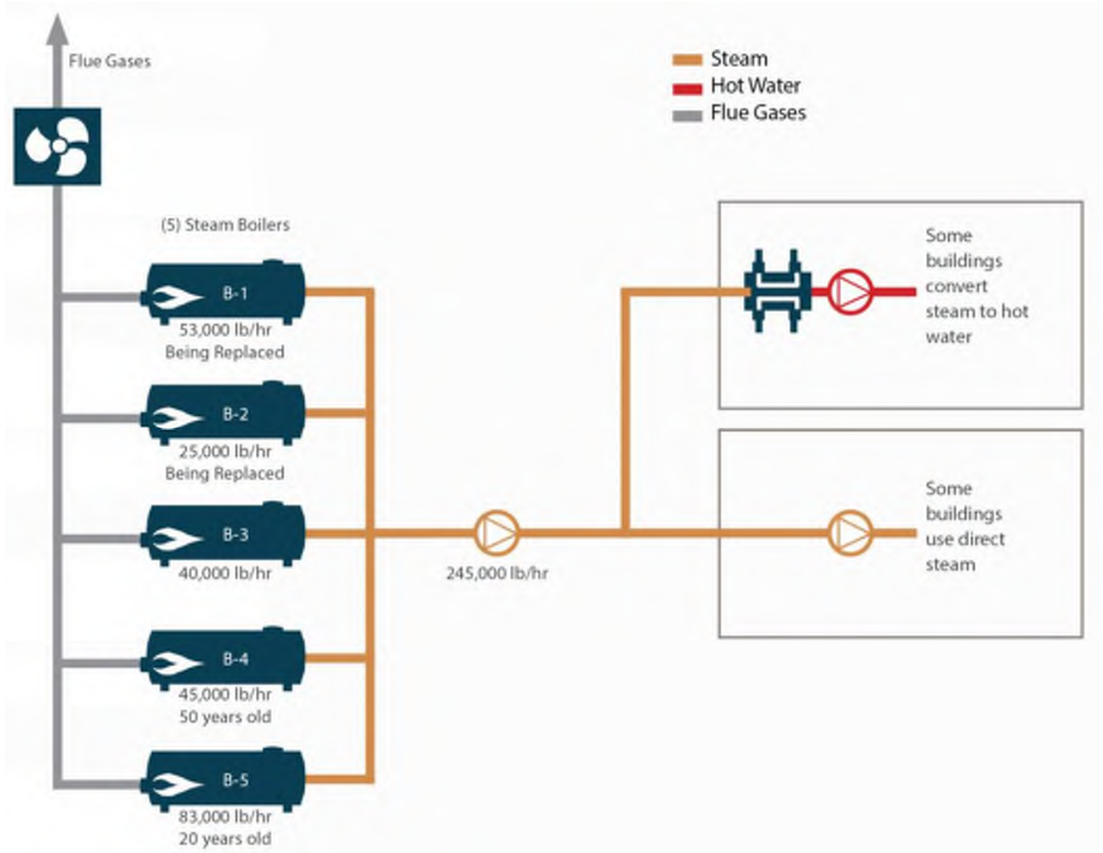


Figure 5: Diagram of Existing Campus Heating System

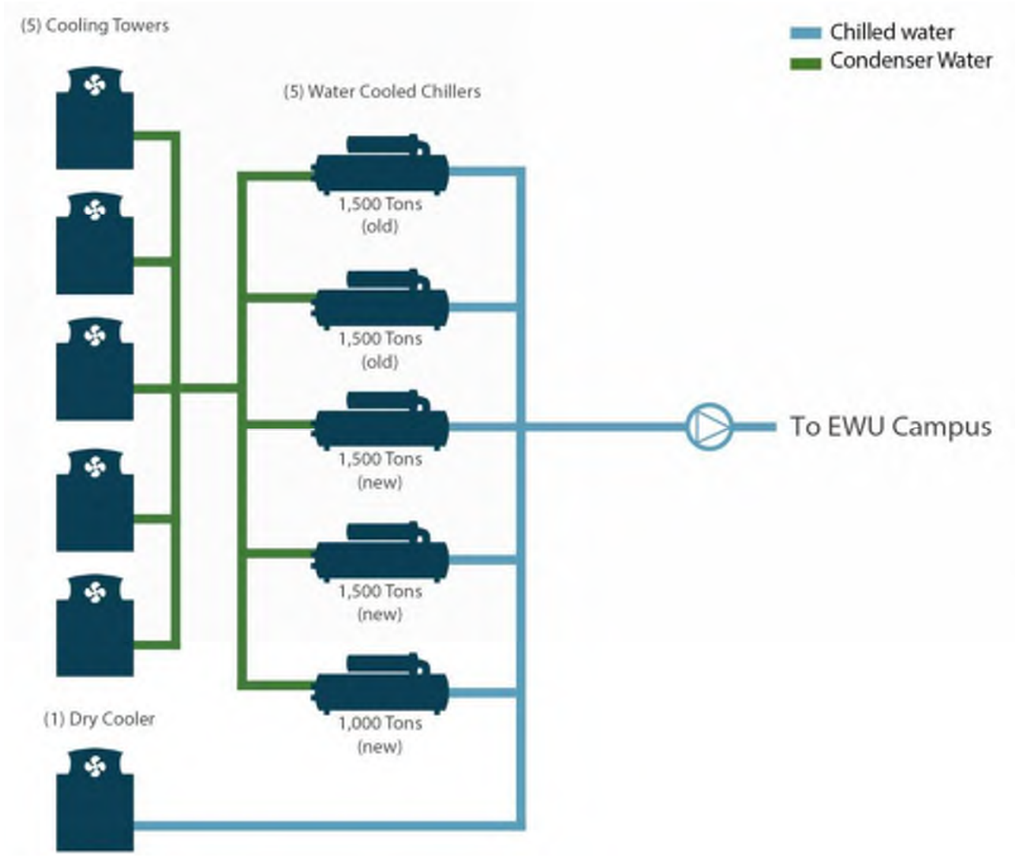


Figure 6: Diagram of Existing Campus Cooling System

Campus Heating

Most of the campus (2.6 million sf) is served by the central steam heating plant at the Central Rozell Energy Plant. This plant consists of five (5) high-pressure steam boilers with a total capacity of 245,000 lb/hr. The boiler ages vary, and boilers 1 and 2 are in the process of being replaced with new gas-fired boilers. The highest observed steam load on campus was approximately 75,000 lb/hr. Steam is distributed to campus via the utilidor system. While some buildings have hydronic heating via steam to hot water converters, many buildings receive heating via direct steam coils. Steam condensate is pumped back to the central plant for collection, at an estimated return rate of 92%.

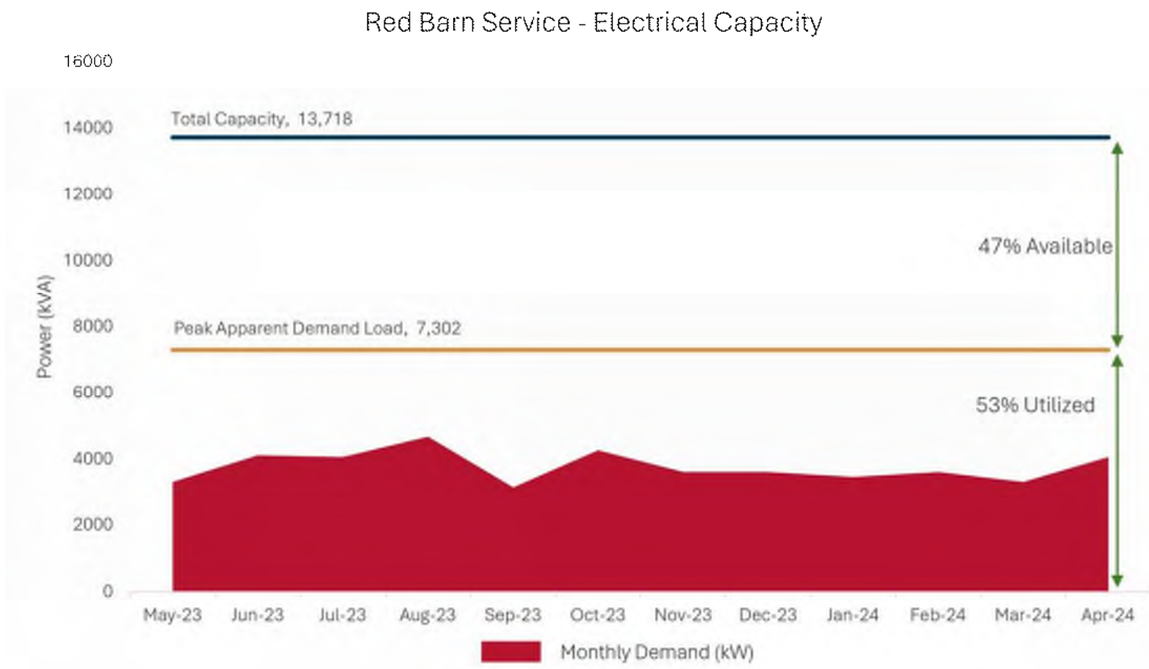
Campus Cooling

Most of the campus (2.1 million sf) is served by the central chilled water system at the Central Rozell Energy Plant. Residence halls are the main exception, as most do not have cooling. This plant consists of five (5) water-cooled chillers and open draw-thru cooling towers for a total capacity of 7,000 tons. The chiller plant is in the process of several modernization and energy upgrades, including water-side economizers and variable speed chillers and pumps. The chillers are turned off October thru April, and winter cooling is provided by a separate dry-cooler unit, with glycol anti-freeze protection. The connected buildings do not have heat exchangers for isolation, and chilled water is typically fed directly into the building's HVAC systems.

Summary of Campus Electrical Infrastructure

The existing campus electrical infrastructure at Eastern Washington University is powered via two service entrance points from two different City of Cheney Substations. Each service consists of a 600A, 13.2kV metal enclosed switchgear . The first service is located at Red Barn and powered from the Turnbull Substation. The second is located at Rozell and powered from the 4 Lakes Substation. Each of the two services feeds either of the two busses within a double-ended 1200A 13.2kV switchgear. This switchgear provides distribution to the remainder of the campus. In addition to powering this switchgear, the Rozell services also provides a 4000KVA feeder to the Rozell Chiller Plant.

Each service has the capacity to deliver up to 13.7MVA to the campus, for a total combined capacity of 27.4 MVA. Utility metering data was reviewed over the course of the year from May 2023 to April 2024 and the peak electrical demand was observed for both services. These values helped to determine the existing utilization of each of the electrical services. Significant capacity exists on both services to accommodate additional electrical load, and the campus loop is designed to allow for physical expansion on either end of the service switchgear busses. Further study will be conducted to calculate the total added electrical load from decarbonization, and will determine if the existing campus infrastructure is sufficiently sized to accommodate the new load



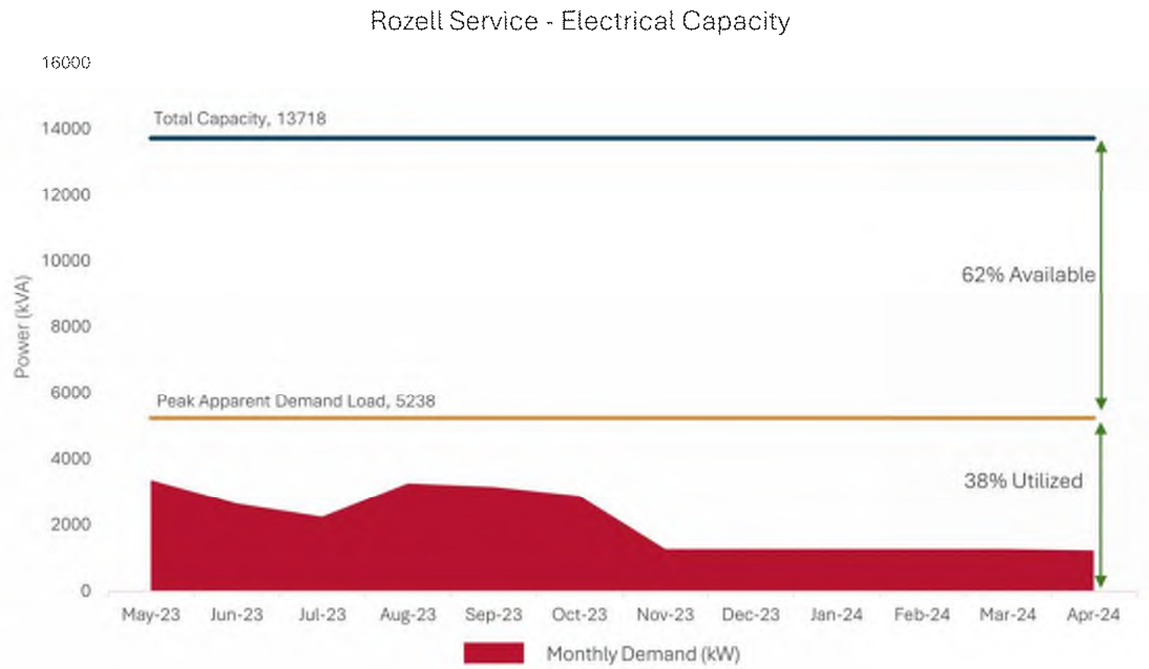


Figure 7: Red Barn and Rozell Plant Capacity Analyses

Section 3

Decarbonization Solution – Energy Plant

Key Takeaways

- The preferred system is an open-loop geothermal system with nodal plants.
- A wide variety of heat sources and sinks were considered, and a qualitative comparison was performed for three options to determine the preferred option.
- The added electrical load to the campus infrastructure has not yet been evaluated. This will be analyzed later in this project.

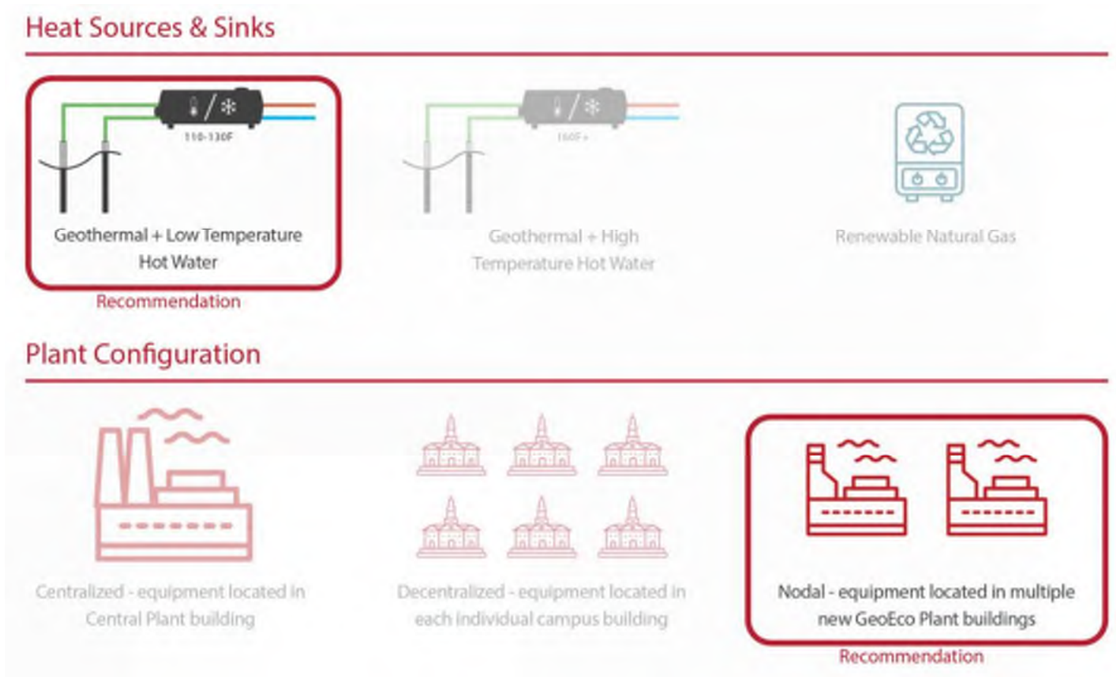
System Scoring Summary

As described in the following pages, several system options were considered for heat sources/sinks and plant configuration. For each system component, the options analysis answered the following key questions:

Heat Sources and Sinks: How will EWU generate heating and cooling?

Plant Configuration: Will the decarbonized system have a central location, or will it be dispersed across campus?

Based on this exercise, and with the approval of EWU, the preferred system is a nodal open-loop geothermal system.



System Scoring Criteria

Table 2 presents the scoring criteria and weightings used to determine the preferred system. These criteria were developed with EWU Construction, Planning, and Facilities groups input and considers the University's priorities and preferences.

Table 2: Relative Weights for Scoring Criteria

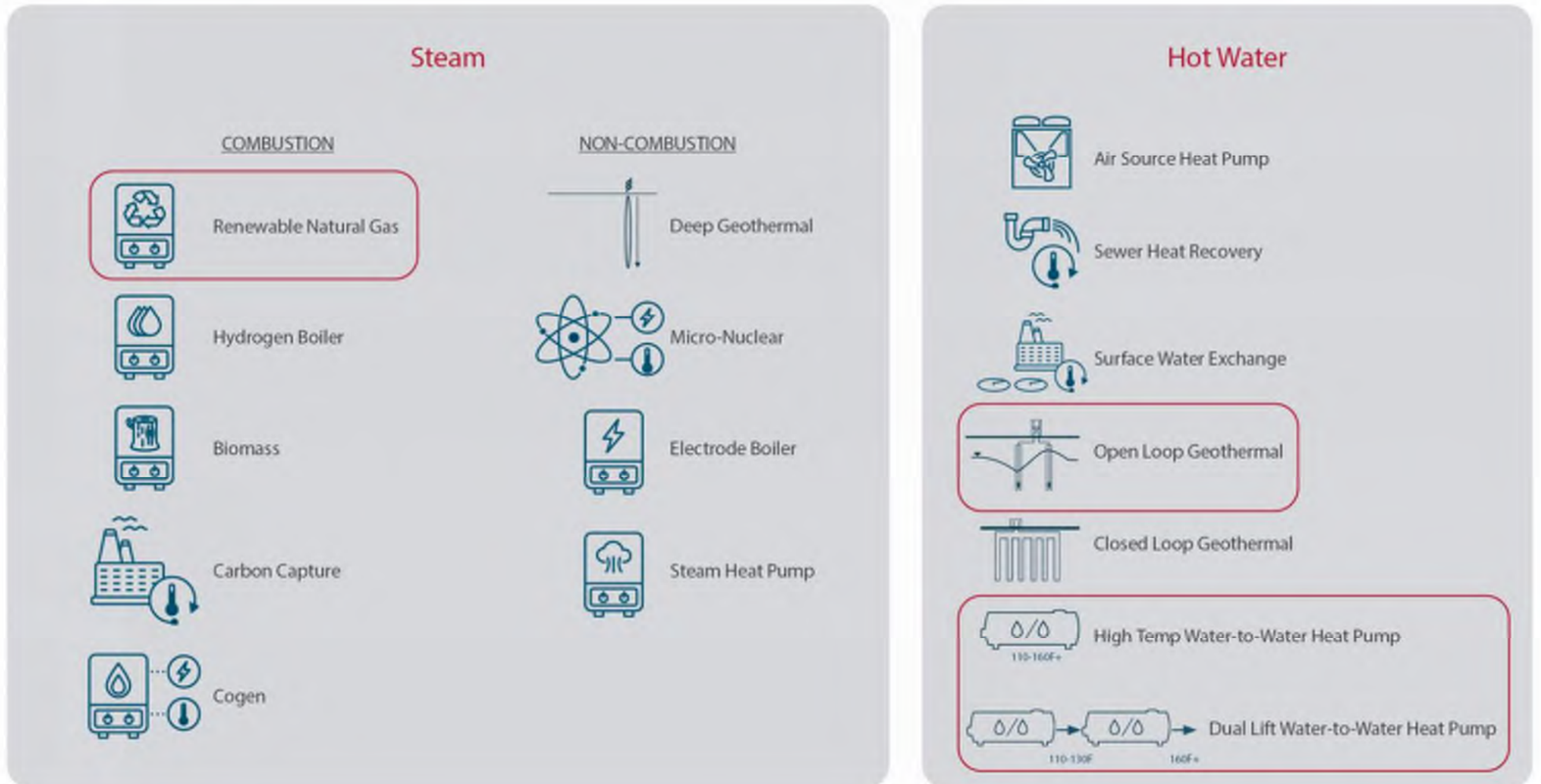
Scoring Variable	Weighting
First Cost	**30%**
Utility Cost	**20%**
Maintenance Cost	**20%**
Carbon Cost Effectiveness	**10%**
Teaching / Curriculum Opportunity	**20%**

System Considerations

Heating is currently provided by fossil fuel-fired steam boilers, which are a prime source of scope 1 carbon emissions. Transitioning that fossil fuel-based system to one not requiring natural gas is a primary piece in driving decarbonization on campus. Since EWU receives electricity from a utility that is powered predominantly by hydropower, transitioning the gas-based system to an electrified system is a key strategy for decarbonization. The system options list below summarizes the systems considered for electrification of the EWU heating system. Qualitative scoring for three options is included on the next page, followed by a complete list of options with further context. **Based on this analysis, open-loop geothermal is the preferred electrified system. Note: this recommendation must be validated by favorable results from a geothermal test well.**

System Options

Systems that would maintain the steam distribution system, as well as those that would transition heating from steam to hot water were considered. In addition, the temperature of the hot water was considered, as different technologies have different capabilities. Based on guidance from EWU, the systems in red boxes in the figure below were compared qualitatively, as shown on the next page.



Low Temperature vs High Temperature Hot Water

When switching from steam to hot water the temperature of that water is a critical consideration. Many of EWU's buildings currently have mechanical systems with direct steam heating. These buildings will require more invasive mechanical system retrofits to switch from steam to hot water. The retrofitted hot water system should be low temperature. Other scenarios will need to be considered on a case-by-case basis. The first nine buildings for conversion are described in the next section of this report.

Low Temperature Hot Water (LTHW)

- Least amount of mechanical plant equipment needed.
- Some existing hot water systems may be able to operate on lower temperatures, requiring minimal in-building upgrade. For those that can't, and for existing steam systems, LTHW may require significant in-building retrofits.
- Mandated for new construction buildings in Washington State.

High Temperature Hot Water (HTHW)

- Requires either two-stage heating systems (with two pieces of equipment), or high temperature heat pumps, which are an emerging technology.
- Does not usually require invasive retrofits to existing in-building mechanical systems.
- Of the buildings that currently have hot water, most operate with HTHW.

Decarbonization Solution | Heat Sources & Sinks Scoring

The heat source/sink analysis compared the relative merits of three systems qualitatively and scored them against performance criteria identified in collaboration with EWU stakeholders. Table 3 presents the results of the scoring analysis.

Table 3: Relative Scoring of Decarbonization Strategies

Geo + Low Temperature Hot Water (LTHW)	Geo + High Temperature Hot Water (HTHW)	Steam via Renewable Natural Gas
Recommendation		
While low temperature hot water is the best-scoring option, most likely the solution will use a mix of low temperature and high temperature hot water, depending on existing building systems. A low temperature hot water system depends on the operating conditions of in-building heating systems, as some buildings may need extensive retrofit to accommodate a low temperature heating system.		
Description		
Open loop geothermal with water-to-water heat pumps providing 110-130F hot water.	Open loop geothermal with water-to-water heat pump(s) providing 160F+ hot water. Bringing hot water up to high temperatures may be achievable with a single heat pump or may require two heat pumps in a dual-lift configuration.	Renewable natural gas (RNG) boilers to provide steam to existing systems. As it is currently written, HB 1390 only allows for 10% of annual heating to be provided by gas or electric resistance. Commerce has not yet provided guidance on alternative fuels.
First Cost		
$$$$	$$$$	$
Utility Cost		
$	$$	$$$$$
Maintenance Cost		
$$$	$$$$	$$$$$
Carbon Cost Effectiveness		
High	Medium	Low
Teaching / Curriculum Opportunity		
High	High	Low
Overall Score		
3.70	**3.10**	**2.20**
Advantages		
- More efficient - Less electrical load - Fewer pieces of equipment - Provides cooling and heat recovery	- Fewer pieces of equipment - Avoids potentially expensive in-building retrofits - Provides cooling and heat recovery	- Familiar Technology - Avoids potentially expensive in-building retrofits
Disadvantages		
- Will require some substantial/significant building retrofits to convert to LTHW - Assuming new pipes can't fit in existing tunnel, will require sitework to install new distribution piping.	- High temperature heat pumps are an emerging technology - Higher equipment first cost - Higher O&M costs - Dual-lift systems would need additional space - Assuming new pipes can't fit in existing tunnel, will require sitework to install new distribution piping.	- Current RNG price 5 to 7 times higher than natural gas. Price needs to come down significantly. - RNG supply is not currently mature. System is reliant on utility's ability to provide sufficient RNG. - Boiler System is a heating-only solution that offers no benefit to the central chilled systems. Does not allow for heat recovery. - High maintenance costs in the plant, distribution piping, and in building systems.

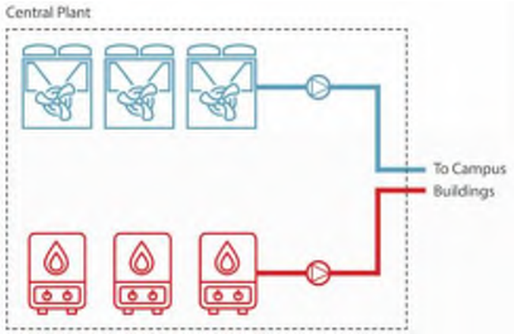
Decarbonization Solution | Heat Sources & Sinks Technology Options

Heat can be introduced to the campus from a wide variety of possible sources via a wide variety of technology. Table 4 presents the options considered for the EWU campus and considerations for their applicability.

Table 4: Heating Technology Options

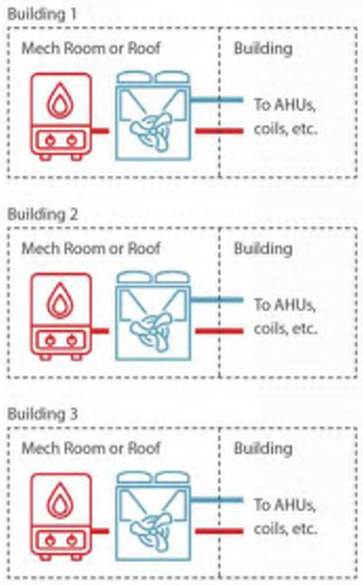
		Concept	Heating?	Cooling?	Suggested Action	Notes
Steam	Combustion	**Renewable Natural Gas Boilers**	Yes	No	Evaluate Qualitatively	Currently utility RNG market is not mature in local market. With HB 1589 passed, gas utilities may evolve in the near future. Limitation of current options puts resiliency at risk. Additionally, HB 1390 has not ruled on validity of alternative fuels that use combustion. Gasification of biomass is possible, but will be space intensive and have similar challenges as biomass boilers.
		Biomass Boilers	Yes	No	Fast Fail	Requires consistent supply, is labor-intensive, and requires large footprint for boiler feed. There is also debate as to whether biomass is carbon-free. Additionally, HB 1390 has not ruled on validity of alternative fuels that use combustion.
		Hydrogen Boilers	Yes	No	Fast Fail - Not At Scale Yet	Provides resiliency through hydrogen storage, but is not commercially viable at scale yet. CU Boulder is currently undertaking a pilot program for research purposes. Additionally, HB1390 has not ruled on validity of alternative fuels that use combustion.
		Cogeneration Boilers	Yes	No	Fast Fail	Provides campus resiliency though on-site power generation, and also reduces electrical load on City Utility. Burns fossil fuels to create heating, so cannot be used for HB 1390 compliance
		Carbon Capture	Yes	No	Pilot Project Underway	EWU was recently awarded grant funding to design and construct a carbon capture system for the existing fossil fuel-based steam boilers.
	Non-Combustion	**Deep Geothermal**	Yes	No	Fast Fail	Deep geothermal is possibly feasible, but requires further study and would most likely have a large first cost. It is currently more suited for utility scale.
		Micro-Nuclear	Yes	No	Fast Fail	Microreactors (5-10 MW) are currently in early stage of design/development. Won't be available until late 2020's/early 2030's at the earliest
		Electrode Boiler	Yes	No	Fast Fail - Not Allowed by 1390	Can only contribute 10% of annual heat input per HB 1390 requirements, not a solution on its own. Likely improves overall plant heating efficiency ~15-20%. EWU already evaluated this (before 1390) and found it too expensive.
Hot Water	High Temp	**Heat Exchange Source + High Temp Heat Pump (Single Lift)**	Yes	Yes	Evaluate Qualitatively	High-temperature heat pumps are a quickly emerging technology. While typically used for industrial applications, manufacturers are quickly providing new models with better performance for higher education applications.
		Low Temp HW (LTHW) + Secondary Heat Pump (Dual Lift)	Yes	Yes		1st step heating can be any LTHW concept (e.g. geothermal). 2nd step heat from LTHW to HTHW achieved via water-to-water heat pumps (WWHP) in each building or at certain nodes. In-building WWHPs limited by available mech room space and electrical capacity.
		Steam Heat Pump (Single Lift)	Yes	No	Future Consideration	Similar to High Temp heat pump, these are being seen first in industrial applications and emerging quickly. Development for commercial applications is slightly lagging behind high temp heat pumps.
		Low Temp HW + In-Building Elec Boiler (Dual Lift)	Yes	No	Future Consideration	In-building electric heating is not limited by HB 1390. 1st step heating can be any LTHW concept (e.g. geothermal). 2nd step heat from LTHW to HTHW achieved via electric boiler/heating in each building or at certain nodes. In-building electric heating limited by available mech room space and electrical capacity. Electric boilers are significantly less efficient than WWHPs and aren't ideal for two-step controllability. Could be considered in future phase if mechanical room space becomes a limiting factor for the WWHP option.
	Low Temp	**Open Loop Geo-Exchange**	Yes	Yes	Evaluate Qualitatively	EWU conducted a geothermal evaluation with system options, which found the aquifer beneath campus could have capacity to meet campus heating/cooling needs. The findings of the evaluation are based on computer modeling and available data, and need to be validated via geothermal test well.
		Closed Loop Geo-Exchange	Yes	Yes	Fast Fail - Open Loop is More Viable	More costly per unit capacity than open loop and requires significantly more site area. Viable option for sites that don't have a viable open loop aquifer.
		Air-to-Water Heat Pump	Yes	Yes	Future Consideration	Could be included for peaking heating/cooling loads in campus system, depending on aquifer viability and total system cost. Viable option for standalone buildings not connected to campus system.
		Surface Water Exchange	No	Yes	Fast Fail	EWU campus is not directly adjacent to a significant body of water.
		Campus Sewer Heat Recovery	Yes	Yes	Fast Fail	Campus sewer line would have insufficient flow to make a meaningful impact. Makes more sense for sites that are near very large citywide sewer lines. Otherwise, the added maintenance and cost are not worth the energy recovered.

The plant configuration dictates where the heating/cooling equipment is located and the general quantity of pieces of equipment. The existing heating/cooling system is centralized, with all the main equipment located in the Rozell Energy Plant. The main tradeoffs between a centralized plant and several smaller distributed plants include maintenance, phasing, and space requirements. **The nodal system is preferred, largely due to its flexibility and phase-ability, as well as the opportunity to showcase decarbonization to the campus.**



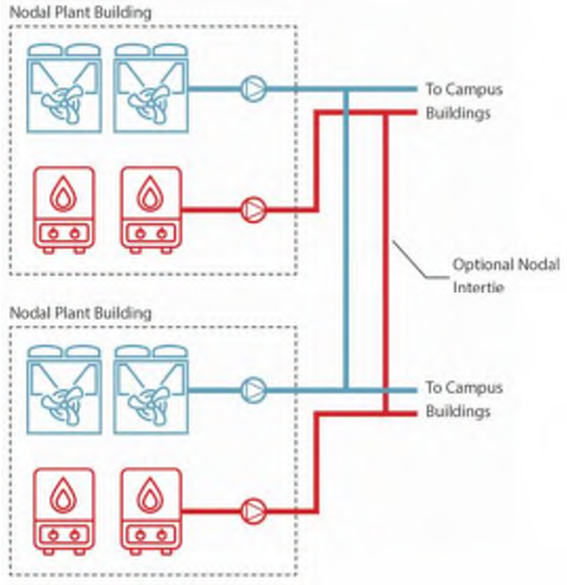
Centralized

A centralized system houses all heating and cooling equipment in a single location. This allows for larger equipment with less maintenance but is not ideal for phasing and flexibility.



Decentralized

A decentralized system houses all heating and cooling equipment in individual buildings. All buildings are independent of a central loop and mechanical equipment is standalone. In essence, the existing central heating/cooling loop would be abandoned. While this reduces overall pumping energy, it also significantly increases maintenance costs. It is also difficult from a constructability perspective since existing buildings don't typically have extra space or electrical capacity for large new equipment. This approach is also challenging to integrate with geothermal as it is impractical for each building to have its own wells.



Nodal

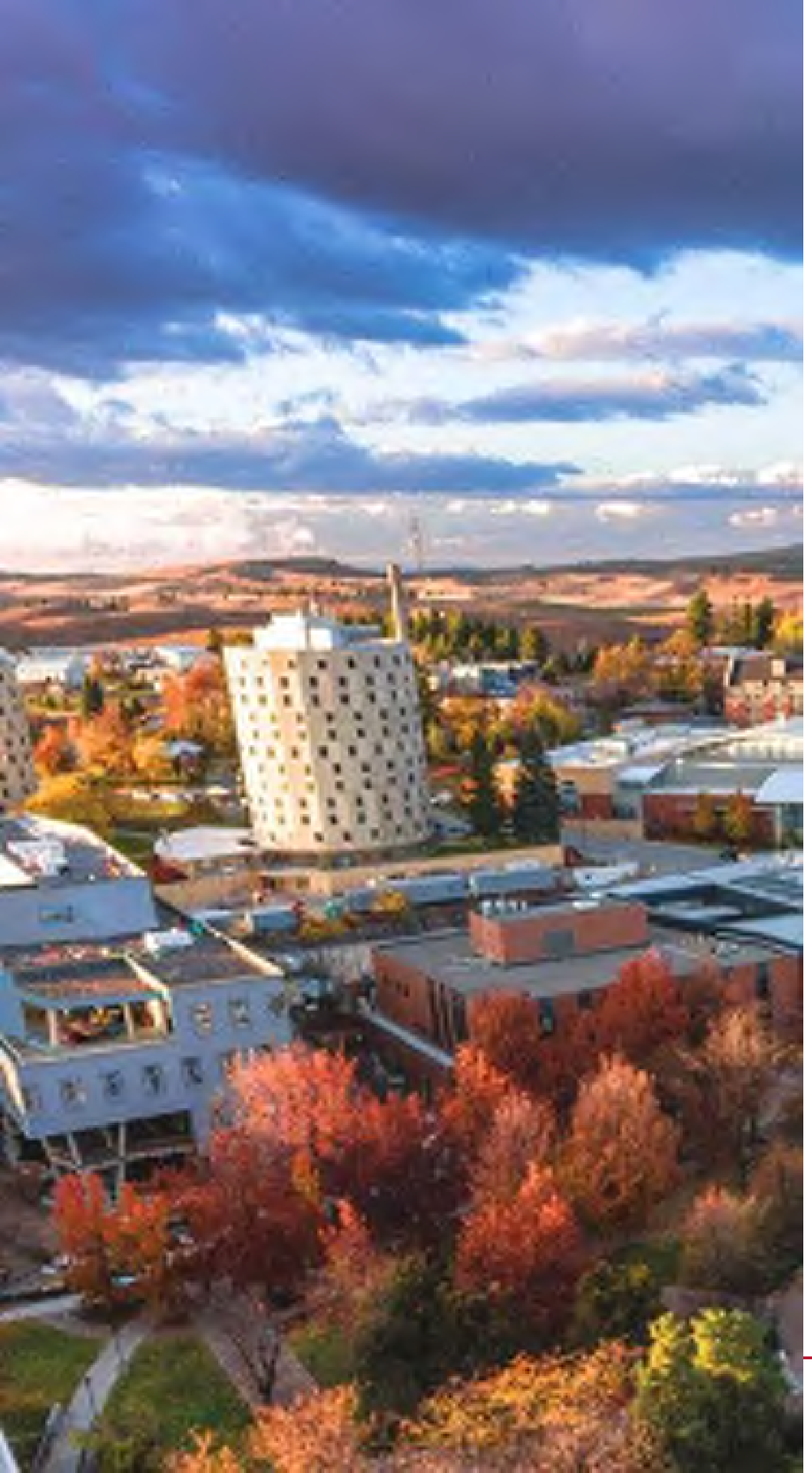
A nodal system houses all heating and cooling equipment in several smaller distributed plant buildings, meaning new plant buildings would be built across campus. This approach is a blend of centralized and decentralized, and each plant building would house mid-size mechanical equipment.

Decarbonization Solution | Plant Configuration Scoring

The plant configuration analysis compared three options for the distribution of central plant equipment and distribution of thermal energy across the campus. These options were scored against performance criteria identified in collaboration with EWU stakeholders, and the results are shown in Table 5.

Table 5: Relative Scoring for Plant Distribution Strategies

Centralized	Decentralized	Nodal
Recommendation		
The nodal configuration is recommended as it has many of the benefits of the centralized system while being flexible and well-suited to phasing.		
Description		
This option is most similar to the existing central plant configuration, with all major mechanical equipment located in one central location.	This option would employ major pieces of mechanical equipment (i.e. water-to-water heat pumps, air-source heat pumps) at each building to produce heating and cooling at the building level.	This option would utilize multiple "nodal" plants, each with major mechanical equipment, spread across campus.
First Cost		
$$	$$$$$	$$$
Utility Cost		
$	$$	$
Maintenance Cost		
$	$$$$	$$
Carbon Cost Effectiveness		
High	Medium	High
Teaching / Curriculum Opportunity		
Medium	Low	High
Overall Score		
4.10	2.00	4.20
Advantages		
- Fewer pieces of major mechanical equipment mean less maintenance - Fewer wells - Reduced well maintenance - Reduced infrastructure costs - Doesn't require new buildings across campus	- Doesn't require new or modified distribution piping - Buildings can be built and operated independently of each other - No new dedicated building for plant equipment needed	- Better for phasing than central plant - Flexible to evolving campus plans - Lower conveyance piping costs for geothermal - Lower likelihood of overdesigning wellfields - Provides opportunity to showcase decarbonization
Disadvantages		
- Higher conveyance piping costs for geothermal - Fewer pieces of equipment mean less redundancy/resiliency - Harder to phase, resulting in larger capital requests - New hot water distribution piping across campus has high campus impact	- Higher O&M costs from increased quantity of equipment - Reduced Space/roof area in buildings to fit mechanical equipment - Most likely requires substantial electrical upgrades at most buildings - Abandons existing infrastructure - No heat sharing	- More maintenance than central system - Requires small new plant buildings and new hot water distribution piping



Section 4

Decarbonization Solution – Building Conversions

Key Takeaways

- The nine buildings were scoped for decarbonized space heating and water heating based on their existing systems.
- No electrical service upgrades are required at any of the nine buildings.
- The total ROM cost to convert these nine buildings so they can connect to the first geothermal node is ~$20,000,000.

Building Renovations

Achieving decarbonization at EWU hinges on ensuring that the existing buildings can utilize thermal energy from the proposed nodal geothermal plants. Sharing thermal energy is the defining feature of any district energy system. This study has scoped decarbonization renovations to connect nine buildings to the first nodal plant. The district connection is intended to allow the sharing of thermal energy for both space heating and domestic water heating systems. The proposed renovations also dovetail with a variety of efficiency improvements that are outlined in the Energy Upgrades ROM Pricing Report and included in the 2025-2027 capital request. Improving the functionality, efficiency, and control of any system will improve the overall performance of the district. The exact implementation of building renovations is dependent on the funding received. Figure 8 below shows the nine buildings considered for connection to the first nodal central plant. The specific renovations required are discussed in the following pages.

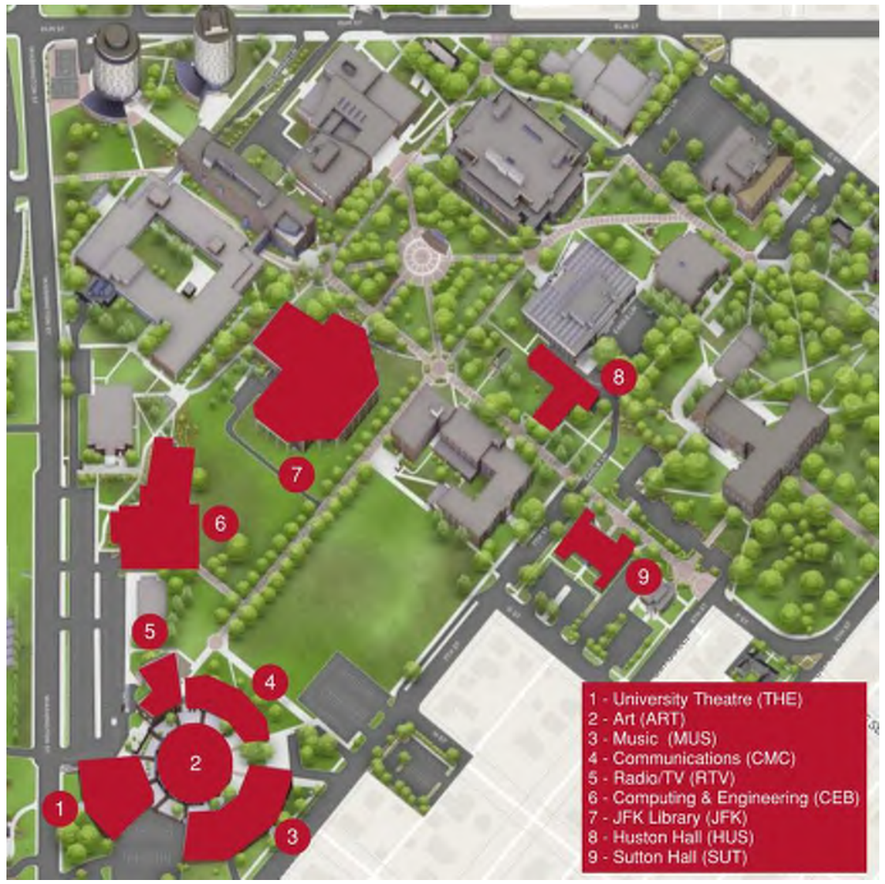


Figure 8: Buildings Studied for District Interconnection

Mechanical Decarbonization Strategies

Table 6 and Table 7 below describe the recommended strategies for decarbonizing the space heating and DHW systems. The proposed in-building solutions assume low temperature hot water (LTHW) is provided to the buildings at approximately 120°F. The appendices include detailed descriptions of the existing systems in each building.

Table 6: Space Heating Decarbonization Strategies

Decarbonization Strategy	Existing Mechanical System	Proposed Mechanical System	Applies To
HHW Strategy 1 **High Temp Hot Water (HTHW) Double Lift**	Many heating coils served by HTHW.	Add in-building water-to-water heat pump to boost district energy LTHW supply up to 180°F to serve existing coils. No coil replacement.	JFK - Kennedy Library SUT - Sutton Hall
HHW Strategy 2 **Coil Replacement**	Relatively few heating coils. All coils are either direct steam OR HTHW.	Replace coils and piping with LTHW. Replace existing fans with new fan walls.	CEB - Computer & Engineering CMC - Communications HUS - Huston Hall MUS - Music Building RTV - Radio & TV
HHW Strategy 3 - **Hybrid Coil Replacement & Double Lift**	Direct steam heating coils AND HTHW coils.	Replace steam coils with LTHW piping and coils. Add in-building water-to-water heat pump to boost district energy LTHW supply up to 180°F to serve existing HTHW coils	ART - Art Building THE - Theater

Table 7:Domestic Hot Water Decarbonization Strategies

Decarbonization Strategy	Strategy Description	Applies To
DHW Strategy 1 **Existing Electric DHW Heater**	Maintain existing electric DHW heater(s), tanks(s) and infrastructure.	CMC - Communications MUS - Music Building RTV - Radio & TV SUT - Sutton Hall THE - Theater
DHW Strategy 2 **DHW Double Lift Heat Pump**	Add an in-building DHW heat pump and storage tank to use district energy LTHW and maintain DHW @ 140°F. Existing steam converter to be left in place for optional backup.	JFK - Kennedy Library CEB - Computer & Engineering HUS - Huston Hall ART - Art Building

Building Decarbonization Strategy 1

Mechanical

Strategy 1 will add an in-building water-to-water heat pump to boost district energy LTHW and supply up to 180°F to serve the existing coils. All existing coils will remain, which will limit the scope of work to the main mechanical room near the existing steam converter. The existing steam converter will be left in place for backup to allow for sizing the booster WWHP for 60-80% of the true building peak load, saving cost, while still delivering ~90-95% of annual building heat. The hot water reset schedule should be optimized to maintain the lowest temperature HW necessary to provide heat to the building.

Domestic Hot Water

If the building currently utilizes electric boilers or electric tank style heaters for domestic hot water, they are to remain in place. If campus steam is used to heat domestic hot water, a new in-building DHW heat pump and storage tank will be added to use district energy LTHW and maintain DHW @ 140°F. The existing steam converter to be left in place for optional backup and can be removed if and when campus steam becomes obsolete.

Application

Strategy 1 is applicable for buildings without steam, where there exists a large quantity of hot water coils requiring High Temperature Hot Water. The Kennedy Library (JFK) is shown in Figure 9, but this strategy can also be applied to Sutton Hall (SUT) which has similar systems.

Additional Considerations

Further study of the actual building loads will impact how this strategy is implemented. The continued use of steam provides flexibility and resiliency while decarbonized systems are implemented and commissioned. In some cases, it may be possible to decommission the steam system once the decarbonized system is operational and demonstrates the ability to meet the building loads. Depending on the timeline for implementation, new technologies in high-temperature heat pumps may reduce cost and

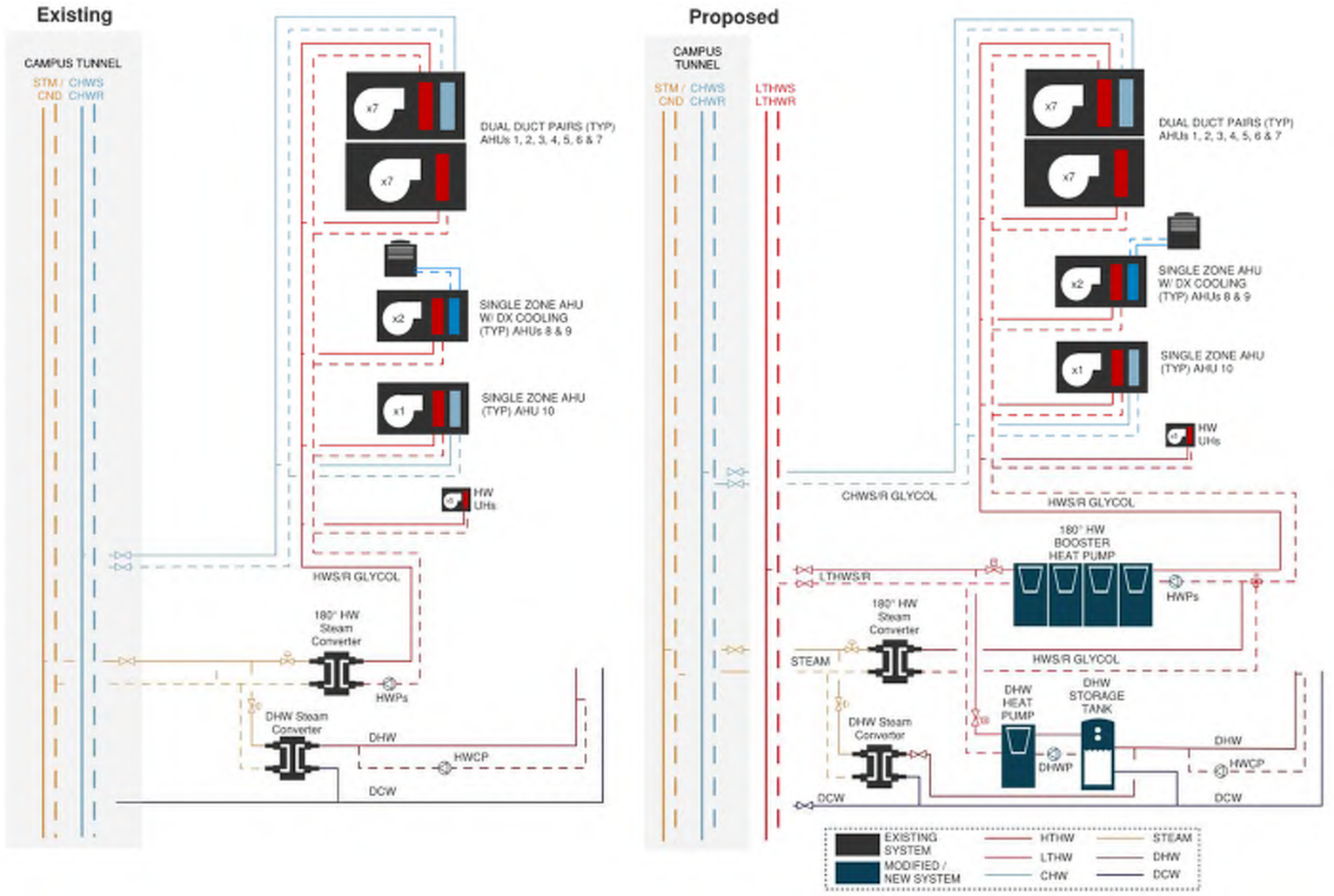


Figure 9: Strategy 1 Mechanical Diagrams

Building Decarbonization Strategy 2

Mechanical

Strategy 2 will replace all steam coils and piping with low temperature hot water (LTHW) coils and piping to utilize district energy LTHW. A new heat exchanger will be necessary to isolate building LTHW loop from district LTHW loop and allow for glycol freeze protection in the building loop. To allow both space and capacity for new LTHW coils, the fans will need to be replaced with new fan walls.

Domestic Hot Water

If the building currently utilizes electric boilers or electric tank style heaters utilizes for domestic hot water, they are to remain in place. If campus steam is used to heat domestic hot water, a new in-building DHW heat pump and storage tank will be added to use district energy LTHW and maintain DHW @ 140°F. The existing steam converter to be left in place for optional backup and can be removed if and when campus steam becomes obsolete.

Application

Strategy 2 applies to buildings that have steam heating and limited or no terminal systems with coils. These systems are ideally suited to change out steam coils and piping and serve with district energy LTHW. The Computer & Engineering Building (CEB) is shown in the diagram below, but this strategy can also be applied to Communications (CMC), Huston Hall (HUS), Music (MUS) and the Radio & TV Building (RTV), which have similar systems.

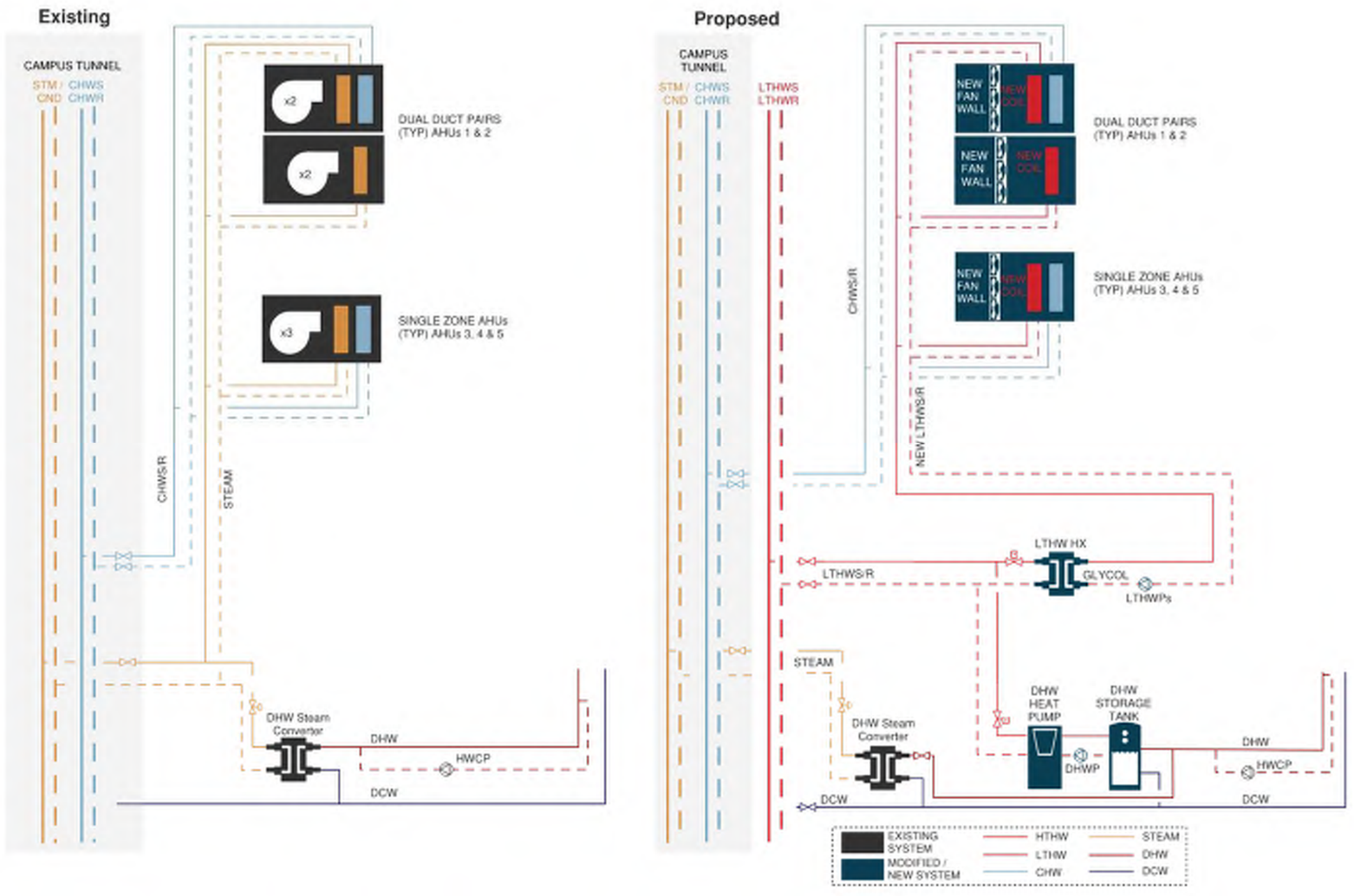


Figure 10: Strategy 2 Mechanical Diagrams

Building Decarbonization Strategy 3

Mechanical

Strategy 3 will replace large steam coils in air handlers with low temperature hot water (LTHW) coils to utilize district energy LTHW. To allow both space and capacity for new LTHW coils, the air handler fans will need to be replaced with new fan walls. A new heat exchanger will be necessary to isolate the building LTHW loop from the district LTHW loop and allow for glycol freeze protection in the building loop.

Terminal heating systems will be served by a new in-building water-to-water heat pump to boost district energy LTHW up to180°F HW. The hot water reset schedule should be optimized to maintain the lowest temperature HW necessary to provide heat to the building. The existing steam converter to be left in place as back up to allow for sizing the booster WWHP for 60-80% of the true building peak load, saving cost, while still delivering ~90-95% of annual building heat.

Domestic Hot Water

If the building currently utilizes electric boilers or electric tank style heaters utilizes for domestic hot water, they are to remain in place. If campus steam is used to heat domestic hot water, a new in-building DHW heat pump and storage tank will be added to use district energy LTHW and maintain DHW @ 140°F. The existing steam converter to be left in place for optional backup and can be removed if and when campus steam becomes obsolete.

Application

Strategy 3 applies to buildings that have steam heating and hot water terminal heating. These systems are ideally suited to change out steam coils and serve directly with district energy LTHW but will also require an in-building heat pump to maintain the terminal heating hot water loop temperature up to 180°F. The Art Building (ART) is shown in the diagram below, but this strategy can also be applied to the Theater Building (THE), which has similar systems.

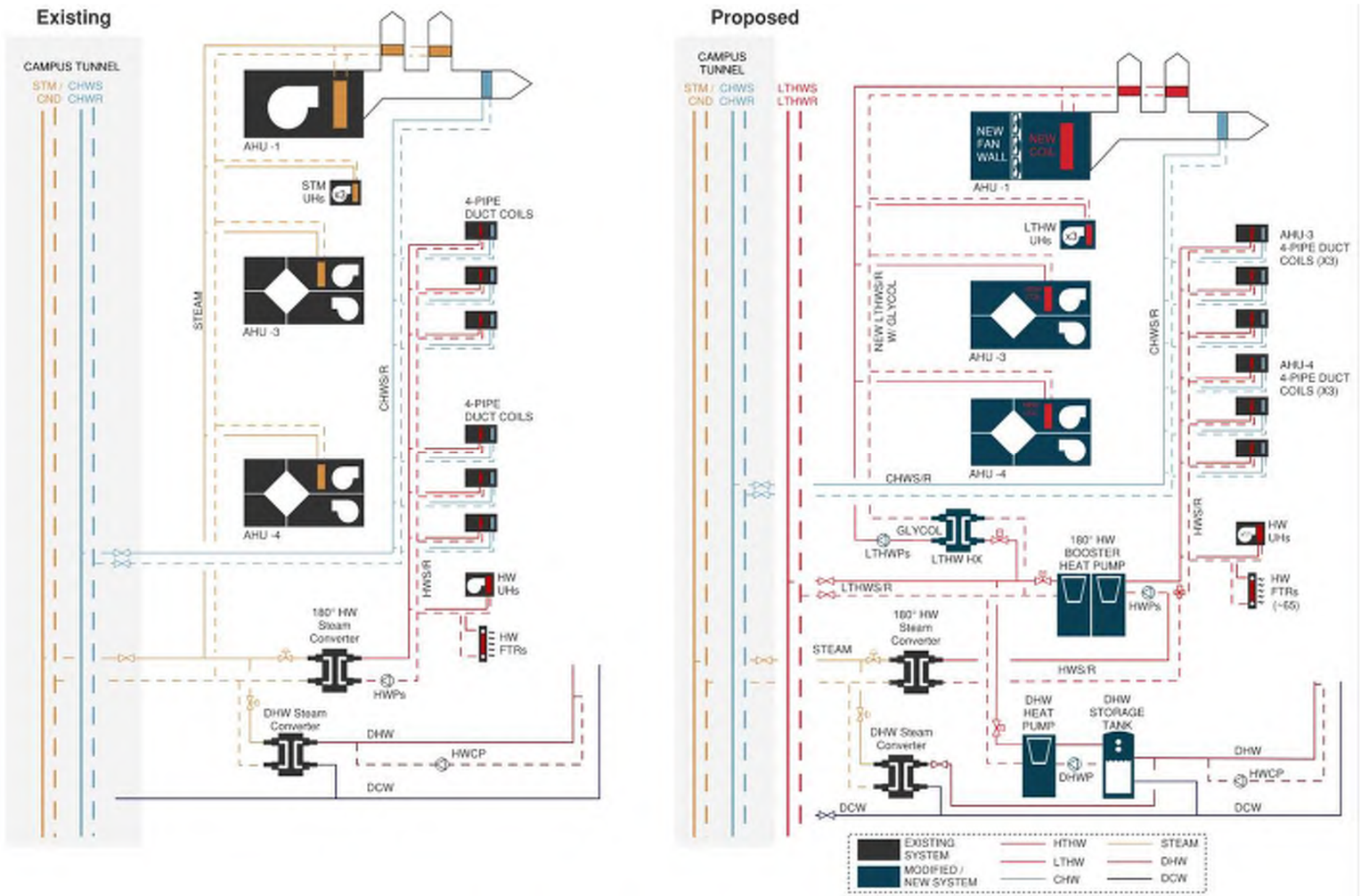


Figure 11: Strategy 3 Mechanical Diagrams

Summary of In-Building Infrastructure

The available electrical capacity and the increased load required to accommodate the proposed upgrades was reviewed at all nine buildings on campus. Metering data was reviewed at each of the buildings, where available, and compared to the capacity as determined from the building service nameplate ratings. **All the buildings reviewed were found to have sufficient electrical capacity available and can accommodate the proposed mechanical revisions without requiring a new electrical service.**

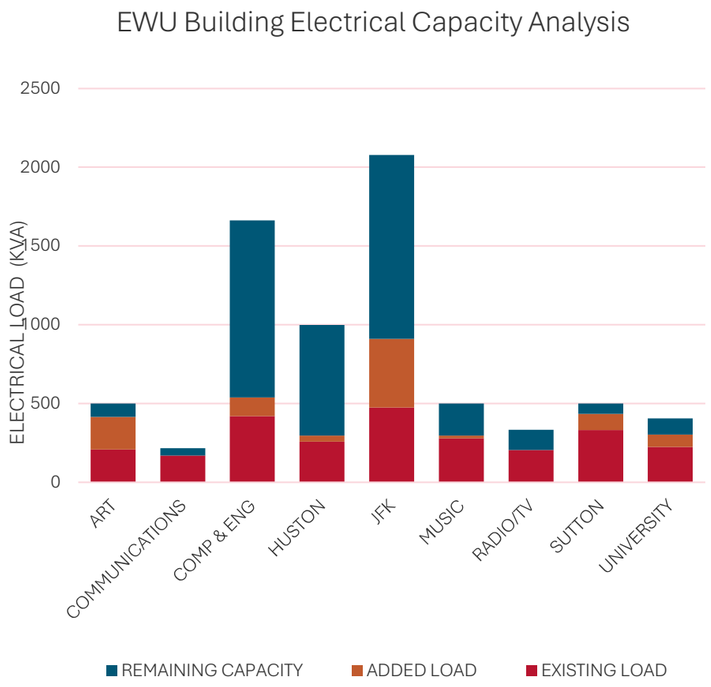


Figure 12: Summary of Existing Electrical Capacity Analysis

Table 8: Summary of Building Electrical Services

Description			Existing Electrical Summary			Decarbonized Electrical Summary			
	Building	Building Area [s.f.]	Existing Electrical Service	Total Electrical Capacity (KVA)	Existing Demand Load (KVA)	Added Electrical Load (KVA)	Total Decarbonized Electrical Load (KVA)	Percentage of Electrical Capacity Utilized	Electrical Service Upgrade Required? (Y/N)
JFK	JFK Library	124,496	2500A, 480Y/277V,3Ø	2078	473	436	910	44%	N
CEB	Computing & Engineering Building	98,476	2000A, 480Y/277V,3Ø	1663	419	119	538	32%	N
MUS	Music Building	47,618	600A, 480Y/277V,3Ø	499	278	18	296	59%	N
THE	University Theater	41,164	1125A, 208Y/120V,3Ø	405	223	79	303	75%	N
ART	Art Building	34,469	600A, 480Y/277V,3Ø	499	208	207	415	83%	N
SUT	Sutton Hall	31,927	600A, 480Y/277V,3Ø	499	331	102	433	87%	N
HUS	Huston Hall	27,424	1200A, 480Y/277V,3Ø	998	258	38	295	30%	N
CMC	Communications Building	19,289	600A, 208Y/120V,3Ø	216	169	0	169	78%	N
RTV	Radio/TV Building	16,980	400A, 480Y/277V,3Ø	333	205	0	205	62%	N

Summary of Energy Efficiency Measures

The energy efficiency measures below are recommended for implementation. While these measures can occur independently of the decarbonization conversions, they should happen concurrently to capture complementary benefits.

Table 9: Energy Efficiency Measures by Building

Energy Efficiency Measure	Strategy Description	Applies to
Lighting Upgrade	Savings is a result of decreased power draw of LED lamps versus fluorescent lamps	JFK - Kennedy Library CEB - Computer & Engineering HUS - Huston Hall SUT - Sutton Hall ART - Art Building MUS - Music Building THE - Theater Building RTV - Radio & TV CMC - Communications Building
Lighting Controls	Room- or luminaire-based occupancy sensors will reduce lighting runtime. Recommend installing in study rooms, conference rooms, restrooms, etc..	JFK - Kennedy Library CEB - Computer & Engineering HUS - Huston Hall SUT - Sutton Hall ART - Art Building MUS - Music Building THE - Theater Building RTV - Radio & TV CMC - Communications Building
Window Upgrade	Energy savings is a result of reduced heat loss through energy efficient windows	ART - Art Building MUS - Music Building
Demand Control Ventilation (DCV)	DCV automatically reduce ventilation intensity during off-peak hours, saving energy. Consists of sensors and controllers that adjust ventilation based on indoor air quality (CO2)	JFK - Kennedy Library MUS - Music Building
Damaged Duct / Coil Connections	Savings will be a result of decreased heat loss from AHU at damaged ductwork as well as water savings from leaking coil(s).	THE - Theater Building CMC - Communications Building
Constant Volume to Variable Volume Fans and Pumps	Savings result from ability to throttle pumps, fans, and valves when viable. Increased ability for zone control and scheduling.	ART - Art Building
Air System Testing and Balancing	Process of measuring, adjusting, and verifying HVAC systems to ensure they are functioning effectively and efficiently.	CEB - Computer & Engineering
Unoccupied Turndown Schedule	Unoccupied turndowns will result in reduced heating/cooling load as well as reduced fan energy.	JFK - Kennedy Library HUS - Huston Hall SUT - Sutton Hall ART - Art Building MUS - Music Building RTV - Radio & TV

Summary of In-Building Renovations

The costs listed below are "all in" costs, reflective of the total cost EWU can expect when implementing these projects. They include the building conversion strategies listed below as well as the energy efficiency measures listed in Table 9. They are ROM costs for budgetary purposes and will need to be refined during the next stage of development/implementation. The appendix provides additional cost information.

Table 10: Building Conversion Summary and ROM Costs.

Building		Building Area [s.f.]	Existing System	Decarbonized System	Decarbonized System Cost
JFK	JFK Library	124,496	HVAC: High Temp Hot Water serving mostly dual duct systems DHW: Electric DHW Heaters & Steam to DHW Converter	HHW Strategy 1 - Booster Heat Pump DHW Strategy 2 - Booster Heat Pump	$2,800,000
CEB	Computing & Engineering Building	98,476	HVAC: Direct steam serving dual duct systems and large single zone AHUs DHW: Steam to DHW converter	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 2 - Booster Heat Pump	$4,600,000
MUS	Music Building	47,618	HVAC: Direct steam serving air handlers and unit heaters DHW: Electric DHW Heaters	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 1 - Existing Electric DHW	$2,400,000
THE	University Theater	41,164	HVAC: Direct steam serving air handlers and HTHW serving terminal heating DHW: Electric DHW Heaters	HHW Strategy 3 - Hybrid Coil Replacement and Dual Lift Heat Pump DHW Strategy 1 - Existing Electric DHW	$1,900,000
ART	Art Building	34,469	HVAC: Direct steam serving air handlers and HTHW serving terminal heating DHW: Electric DHW Heaters & Steam to DHW converter	HHW Strategy 3 - Hybrid Coil Replacement and Dual Lift Heat Pump DHW Strategy 2 - Booster Heat Pump	$3,300,000
SUT	Sutton Hall	31,927	HVAC: HTHW serving air handlers and radiators DHW: Electric DHW Heaters	HHW Strategy 1 - Booster Heat Pump DHW Strategy 1 - Existing Electric DHW	$900,000
HUS	Huston Hall	27,424	HVAC: Direct steam serving air handlers DHW: Steam to DHW converter	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 2 - Booster Heat Pump	$1,700,000
CMC	Communications Building	19,289	HVAC: Direct steam serving air handlers DHW: Electric DHW Heaters	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 1 - Existing Electric DHW	$1,100,000
RTV	Radio/TV Building	16,980	HVAC: Direct steam serving air handlers DHW: Electric DHW Heaters	HHW Strategy 2 - Steam to LTHW Coil Replacement DHW Strategy 1 - Existing Electric DHW	$1,100,000

Appendix

A. Cost Estimate by Category

B. Existing System Description by Building

C. Renovation Scope by Building

Appendix A | Cost Estimate by Category

	Building	Building Area [s.f.]	Mechanical Labor	Electrical Labor	Energy Management & Controls	Complete Lighting	Window Upgrades	Equipment	Other	Complete Plumbing	Contingency	Construction Sub-total	Turnkey Estimate	Turnkey Cost / S.F.
JFK	JFK Library	124,496	$ 193,500	$ 96,750	$ 128,000	$ 596,336	$ -	$ 478,500	$ 50,000	$ 44,000	$ 158,709	$ 1,745,794	$ 2,880,561	$ 23.14
CEB	Computing & Engineering	98,476	$ 849,000	$ 197,501	$ 340,392	$ 262,981	$ -	$ 658,834	$ 50,000	$ 74,000	$ 243,271	$ 2,675,979	$ 4,415,365	$ 80.42
MUS	Music Building	47,618	$ 385,167	$ 92,543	$ 244,680	$ 117,202	$ 114,108	$ 288,791	$ 50,000	$ -	$ 129,249	$ 1,421,740	$ 2,345,872	$ 95.88
THE	University Theater	41,164	$ 362,333	$ 78,508	$ 201,640	$ 96,586	$ -	$ 249,408	$ 50,000	$ -	$ 103,847	$ 1,142,322	$ 1,884,831	$ 93.48
ART	Art Building	34,469	$ 521,113	$ 61,095	$ 243,944	$ 98,161	$ 199,689	$ 442,941	$ 50,000	$ 44,000	$ 166,094	$ 1,827,038	$ 3,014,612	$ 147.10
SUT	Sutton Hall	31,927	$ 65,000	$ 32,500	$ 123,879	$ 60,349	$ -	$ 167,500	$ 25,000	$ -	$ 47,423	$ 521,651	$ 860,723	$ 68.32
HUS	Huston Hall	27,424	$ 378,500	$ 53,748	$ 148,460	$ 72,324	$ -	$ 177,395	$ 25,000	$ 44,000	$ 89,943	$ 989,370	$ 1,632,460	$ 108.12
CMC	Communications Building	19,289	$ 255,042	$ 43,406	$ 97,550	$ 46,726	$ -	$ 119,619	$ 25,000	$ -	$ 58,734	$ 646,078	$ 1,066,028	$ 109.28
RTV	Radio/TV Building	16,980	$ 255,917	$ 38,805	$ 87,210	$ 41,774	$ -	$ 118,435	$ 25,000	$ -	$ 56,714	$ 623,855	$ 1,029,361	$ 118.03

Building		Heating						Cooling				Summary of Existing System
		System Type	Quantity	Coil Type	CFM	Coil MBH	GPM	Type	CFM	Coil MBH	GPM	
John F. Kennedy Library	AHU-1 C	Dual Duct	1	HW 180	8,000	608	60	CHW	22,345	686	130	(7) Dual duct systems with (7) 180° HW heating AHUs and (7) CHW cooling AHUs (14 total). 180° HW is provided from campus steam through a 9,800 MBH 850 GPM steam converter. CHW is provided by campus CHW.
	AHU-1 H	Dual Duct		HW 180	14,120	749	75					
	AHU-2 C	Dual Duct	1	HW 180	6,500	458	35	CHW	16,950	554	110	
	AHU-2 H	Dual Duct		HW 180	11,005	625	65					
	AHU-3 C	Dual Duct	1	HW 180	9,000	680	60	CHW	25,825	994	220	
	AHU-3 H	Dual Duct		HW 180	16,800	906	95					
	AHU-4 C	Dual Duct	1	HW 180	7,000	503	40	CHW	20,440	602	145	
	AHU-4 H	Dual Duct		HW 180	11,580	623	60					
	AHU-5 C	Dual Duct	1	HW 180	7,000	503	40	CHW	16,150	568	125	
	AHU-5 H	Dual Duct		HW 180	10,625	586	50					
	AHU-6 C	Dual Duct	1	HW 180	7,000	518	40	CHW	19,660	638	140	
	AHU-6 H	Dual Duct		HW 180	12,650	672	65					
	AHU-7 C	Dual Duct	1	HW 180	6,500	482	40	CHW	18,250	614	135	
	AHU-7 H	Dual Duct		HW 180	13,420	745	70					
	AHU-8	Single Zone	1	HW 180	2,000	50	5	DX	2,000	55	-	(2) small single zone systems with 180°F HW heating and DX cooling.
	AHU-9	Single Zone	1	HW 180	1,000	24	3	DX	1,000	26	-	
	AHU-10	Single Zone	1	HW 180	1,000	24	3	CHW	1,000	26	-	Small single zone AHU with 180°F HW heating & CHW cooling.
	UHs	UH	5	HW 180		75		-	-	-	-	(5) 180°HW Unit Heaters
	DHW	DHW										DHW is provided by multiple sources, a 800 MBH steam to HW converter, a 50 gallon 2.5 kW electric tank and a 80 gallon 10 kW electric tank.

Building		Heating						Cooling				Summary of Existing System
		System Type	Quantity	Coil Type	CFM	Coil MBH	GPM	Type	CFM	Coil MBH	GPM	
Computer & Engineering Building	AHU-1 C	Dual Duct	1	Steam	16,000	1,042	-	CHW	49,000	1,275	213	(2) Large dual duct systems with separate heating (steam) and cooling (CHW) AHUs.
	AHU-1 H	Dual Duct	1	Steam	27,000	586						
	AHU-2 C	Dual Duct	1	Steam	14,000	907	-	CHW	27,000	1,180	197	
	AHU-2 H	Dual Duct	1	Steam	51,000	1,102						
	AHU-3	Single Zone	1	Steam	20,000	432	-	CHW	20,000	475	79	(3) Large single zone AHUs with steam and CHW coils.
	AHU-4	Single Zone	1	Steam	10,000	216	-	CHW	10,000	270	45	
	AHU-5	Single Zone	1	Steam	15,000	324	-	CHW	15,000	540	90	
	DHW	DHW										(1) Steam to DHW Converter 1500 lbs./hr
Music Building	AH-1	Dual Duct	1	Steam	*30000*	1552	-	CHW	*40000*	*864*	*156*	(1) Large dual duct system with a single fan and separate (steam) heating and (CHW) cooling decks.
	AH-2	Single Zone	1	Steam	*18000*	597	-	CHW	*18000*	*389*	*115*	(1) Large single zone AHU with steam and CHW coils.
	UHs	Unit Heater	1	Steam								(1) Steam UHs in Mechanical Space
	DHW	DHW										Existing 12 kW 50 Gal Tank & 24 kW 80 Gal Tank

Building		Heating						Cooling				Summary of Existing System
		System Type	Quantity	Coil Type	CFM	Coil MBH	GPM	Type	CFM	Coil MBH	GPM	
University Theater	AHU-1	Dual Duct	1	Steam	21000	1009		CHW	21000	453.6	60.48	AHU-1 is a large dual duct system with a steam heating coil and chilled water coil.
	AHU-2	Single Zone	1	-	-	-	-	CHW	13860	299.38	39.917	AHU-2 appears to only have cooling and rely on terminal heating for heat.
	Steam Converter		Unavailable	180° HW	-	620	62	-				An existing steam to HW converter provides heat from campus steam as 180°F HW to a multiple terminal units and fin tube radiators. Steam UH's serve mechanical spaces.
	Reheat Terminals	Duct Coils	Unavailable	Unavailable	Unavailable							
	Radiators	FTR	Unavailable	Unavailable	-			-				
	CUHs	Cabinet Heater	1	Unavailable	-			-				
	UHs	Unit Heater	3	Steam	-			-				(3) Steam UHs in Mechanical Spaces
	DHW	DHW										DHW is provided by an existing 60 kW electric boiler and an existing 18 kW 50 Gal Tank.
Art Building	AHU-1	Dual Duct	1	Steam Preheat	36085	3106	-	CHW	32000	1554	212	AHU-1 is a large (~36,000 CFM) Dual Duct AHU w/ steam preheat coil, (2) steam duct coils and a CHW coil serving ~62 Zones
	AHU 1 - Duct Coil 7	Duct Coil	1	Steam	6000	382.08	-	-	-	-	-	
	AHU 1 - Duct Coil 8	Duct Coil	1	Steam	21000	656.7	-	-	-	-	-	
	AHU-3	RTU	1	Steam Preheat	8950	782	-	-	-	-	-	AHUs 3 & 4 are Large RTUs (~10,000 CFM) with steam preheat serving (3 each, 6 total) Duct Coil Zones with HW & CHW coils. A Steam to HW Converter serves perimeter radiators, unit heaters & convectors.
	AHU 3 - Duct Coil 1	Duct Coil	1	180° HW	2800	100.5	6.7	CHW	2800	107.25	14.3	
	AHU 3 - Duct Coil 2	Duct Coil	1	180° HW	3350	87	5.8	CHW	3350	116.25	15.5	
	AHU 3 - Duct Coil 3	Duct Coil	1	180° HW	2800	100.5	6.7	CHW	2800	107.25	14.3	
	AHU-4	RTU	1	Steam Preheat	8550	767	-	-	-	-	-	
	AHU 4 - Duct Coil 4	Duct Coil	1	180° HW	2950	106.5	7.1	CHW	2950	114.75	15.3	
	AHU 4 - Duct Coil 5	Duct Coil	1	180° HW	2800	100.5	6.7	CHW	2800	107.25	14.3	
	AHU 4 - Duct Coil 6	Duct Coil	1	180° HW	2800	100.5	6.7	CHW	2800	107.25	14.3	
	Steam UHs	Unit Heaters	3	Steam	-	235.6	-	-	-	-	-	(3) Steam Unit Heaters
	Perimeter Steam to HW Converter					1397.5	140					A Steam to HW Converter serves perimeter radiators, unit heaters & convectors.
	HW Convectors	Convectors	15	180° HW	-	73.7	7	-	-	-	-	
	HW UHs	Unit Heaters	11	180° HW	-	170.8	17	-	-	-	-	
	HW Wall Fin	Wall Fintube	49	180° HW	-	1153	115	-	-	-	-	
	DHW	DHW										DHW is provided by a steam converter connected to campus steam.

Building		Heating						Cooling				Summary of Existing System
		System Type	Quantity	Coil Type	CFM	Coil MBH	GPM	Type	CFM	Coil MBH	GPM	
Sutton Hall	AHU-1	VAV AHU	1	HW	11140	600	40		26000	950	200	An existing steam to HW converter provides heat from campus steam as 180°F HW to a single AHU and large array of fin tube radiators.
	Steam to HW HX	Steam HX	1	Steam		891	242					
	VAV RH Coil	Reheat Coil	1	HW		42	5					
	FTR	Fin Tube Radiator	195	HW		540						
	FCU-1	Fan Coil Unit	1	HW	145	11.5	1					
	DHW	DHW										DHW is provided by an existing 9 kW 50 Gal Tank.
Huston Hall	AHU-1	Multizone	1	Steam	16000	864	-	CHW	16000	345.6	57.6	(1) ~20,000 CFM 2 Zone Multizone AHU with Steam & CHW Coils for each zone. - Zone 2 appears capped off. Fan @ 80% or ~16,000 CFM remaining on Zone 1.
	AHU-2	Dual Duct	1	Steam	9000	450	-	-	-	-	-	
	AHU-3	Dual Duct	1	-	-	-	-	CHW	15000	345	60	(1) Dual Duct System with a ~15,000 CFM ~350 MBH CHW Cold Deck AHU & ~9,000 CFM ~ 450 MBH Steam Hot Deck AHU ~ 50 Zones
	SF-5	Fan Coil?	1	-	-	-	-	CHW	1500	36	6	(1) Small FCU with 36 MBH CHW
	CRAC-1	CRAC	4	-	-	-	-	DX				(4) DX CRAC Units (Assume replace former AHU1-Zn2)
	DHW	DHW										DHW is provided by a steam converter connected to campus steam.
Communications	AHU	Dual Duct	1	Steam	10150	384		CHW		219	29	Information included on Music Building drawing set. A single dual duct AHU with a steam coil and campus CHW provides heating and cooling to 28 dual duct zones.
	DHW	DHW										Existing 50 Gal 4.5 kW Electric DHW
Radio / TV	AHU-1	Dual Duct	1	Steam	*10,500*	397	-	CHW	*10,500*	*284*	38	Dual Duct AHU with steam heating coil and CHW cooling coil.
	DHW	DHW										Existing 30 kW Electric Boiler

Appendix C | Renovation Scope by Building

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
John F. Kennedy Library	AHU-1 C AHU-1 H AHU-2 C AHU-2 H AHU-3 C AHU-3 H AHU-4 C AHU-4 H AHU-5 C AHU-5 H AHU-6 C AHU-6 H AHU-7 C AHU-7 H AHU-8 AHU-9 AHU-10 UHs	Deploy a high temperature booster heat pump using the proposed campus LTHW as a source, and creating HTHW for the building. The existing steam converter and pump infrastructure shall remain in place as backup. HW & CHW piping infrastructure and coils will remain unchanged.	N/A	N/A	N/A	Provide a (4x)SBH300 90 ton modular water to water heat pump located in the existing mechanical room. The combined total is 4,420 MBH which will provide for the system load the majority of the year. The existing steam converter will be left in place as a supplemental and backup source. Connect in sidecar configuration to existing building piping loop. Provide new controls for WWHP and accessories, tie into existing building BAS. Assume (20) physical points & (80) virtual points.	Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Install (2) x 500 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances. Pipe in parallel and tie into existing hydronic piping loop.	337.2 kW new total load for (4x)SBH300 Modular WSHP (2) New 10 HP Pumps
	DHW	Electric tank type heater are to remain. Add a new WSHP DHW heater to offset the DHW capacity from the steam converter. The steam converter should be left in place as back up.	New supply and return piping from campus LTHW to new DHW Heat Pump. New DHW piping to integrate storage tank.			Provide new Transom SWH200 WSHPs using the proposed campus LTHW to provide DHW to facility. Provide 100 gallon storage tank. Provide new 20 GPM B&G EcoCirc Pump. Tie into existing DHW system. Existing to remain in place as back up.			33.7 kW power for new Transom SWH150 WSHP. New 1/2 HP Circ Pump

Appendix C | Renovation Scope by Building

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Computer & Engineering Building	AHU-1 C	Replace (7) existing AHU steam coils with new LTHW coils. Provide (7) new fan wall sections for AHUs. Provide new hydronic heat exchanger, new hydronic pumps, new piping to all existing AHUs. Retain steam connection at building, provide new steam-HW converter and pipe into new hydronic piping.	Route approximately 1500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 5" at the pump header to 2" at the coil connection. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 1100 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 49000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 3000MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2)x400gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances. Pipe in parallel and tie into new construction hydronic piping loop. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.)	(2) New 10 HP Building HW Pumps (7) New Fan Wall arrays, expected to remain with existing electrical capacity.
	AHU-1 H			Retrofit new 600 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 14000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-2 C			Retrofit new 1000 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 51000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-2 H			Retrofit new 1200 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 20000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-3			Retrofit new 500 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 20000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-4			Retrofit new 300 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 10000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-5			Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 15000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	DHW	Add a new WSHP DHW heater to offset the DHW capacity from the steam converter. The steam converter should be left in place as back up.	New supply and return piping from campus LTHW to new DHW Heat Pump. New DHW piping to integrate storage tank.			Provide (2) new Transom SWH250 WSHPs using the proposed campus LTHW to provide DHW to facility. Provide 100 gallon storage tank. Provide new 20 GPM B&G EcoCirc Pump. Tie into existing DHW system. Existing steam converter to remain in place as back up.			85.4 kW power for new Transom SWH150 WSHP. New 1/2 HP Circ Pump

Appendix C | Renovation Scope by Building

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Music Building	AH-1	Replace existing AHU steam coils with new LTHW coils. Provide new fan wall sections for all AHUs. Provide new hydronic heat exchanger, new hydronic pumps, new piping to all existing AHUs. Retain steam connection at building, provide new steam-HW converter and pipe into new hydronic piping.	Route approximately 1000ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 4" at the pump header to 2" at the coil connection. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 1600 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 40000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 2000MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2)x220 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances. Pipe in parallel and tie into new construction hydronic piping loop. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.)	(2) New 7.5 HP Building HW Pumps (2) New Fan Wall arrays, expected to remain with existing electrical capacity.
	AH-2			Retrofit new 600 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 18000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	UHs			Replace existing UH with new LTHW UH. Provide new control valve.	Provide new LTHW UH.				
	DHW	Existing electric DHW to remain in place.							N/A

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
University Theater	AHU-1	1) Replace existing AHU steam coils with new LTHW coils. Provide new fan wall sections for all AHUs. Provide new hydronic heat exchanger, new hydronic pumps, new piping to all existing AHUs. 2) Deploy a high temperature booster heat pump using the proposed campus LTHW as a source, and creating HTHW for the existing terminal HW loop. The existing steam converter and pump infrastructure shall remain in place as backup. HW & CHW piping infrastructure and coils will remain unchanged. Replace steam UH with LTHW	Route approximately 1000ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 4" at the pump header to 2" at the coil connection. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc) and fill with 30% glycol solution. New piping for LTHW loop to existing terminal HWR for back up heating to AHU coils.	Retrofit new 1100 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 21000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	The existing steam converter will be left in place as a supplemental and backup source. Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2) x 5 HP 60 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances.	(2) New 5 HP Building HW Pumps (1) New Fan Wall arrays, expected to remain within existing electrical capacity.
	AHU-2			N/A Cooling Only	N/A Cooling Only				
	Steam Converter								
	Reheat Terminals			N/A All terminal device coils remain.	N/A All terminal device coils remain.	Provide a (2) SBH100 30 ton modular water to water heat pump located in the existing mechanical room. The combined total is 750 MBH which will provide for the system load the majority of the year. Connect in sidecar configuration to existing building piping loop. Provide new controls for WWHP and accessories, tie into existing building BAS. Assume (20) physical points & (40) virtual points.		Provide new duplex ECM circulator pump array serving the WWHP, B&G EcoCirc 375XL or similar. Pipe in parallel and tie into existing hydronic piping loop.	53 kW new (2x)SBH100 Modular WSHP (2) 3 HP B&G EcoCirc 375XL or similar.
	Radiators								
	CUHs								
	UHs		Route 100ft of new copper HW piping to branch to new UHs in Mechanical spaces. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.)	Replace existing UH with new LTHW UH. Provide new control valve.	Provide new LTHW UH.	N/A			(3) New UHs expected to remain within existing electrical capacity.
	DHW	Existing electric DHW to remain in place.							N/A

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Art Building	AHU-1	1) Replace existing AHU steam coils with new LTHW coils. AHU-1 Preheat, AHU 1 Duct Coils 7 & 8, AHU 3 & 4 Preheat Coils. Provide new fan wall sections for AHUs 1, 3 & 4. ***(New AHU preheat coils are downsized to reflect realistic loads that account for heat recovery & 4°F OSA design temp.)*** 2) Replace (6) 180°F duct coils with 120°F duct coils served by LTHW. Provide new hydronic heat exchanger, new hydronic pumps, new piping to all existing AHUs.	Route approximately 500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 3" at the pump header to 2.5" & 2" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 1800 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 36085 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	The existing steam converter will be left in place as a supplemental and backup source. Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2) x 20 HP 450 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances.	(2) New 20 HP Building HW Pumps (3) New Fan Walls expected to remain within existing electrical capacity.
	AHU 1 - Duct Coil 7			Retrofit new 400 MBH LTHW coil into existing duct.	N/A - No Fan				
	AHU 1 - Duct Coil 8			Retrofit new 700 MBH LTHW coil into existing duct.					
	AHU-3		Route approximately 500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 3" at the pump header to 2" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 8950 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU 3 - Duct Coil 1		N/A maintain HWS/R piping.	Retrofit new 200 MBH LTHW coil into existing duct.	N/A - No Fan				
	AHU 3 - Duct Coil 2			Retrofit new 100 MBH LTHW coil into existing duct.					
	AHU 3 - Duct Coil 3			Retrofit new 200 MBH LTHW coil into existing duct.					
	AHU-4		Route approximately 500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 3" at the pump header to 2" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 8550 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU 4 - Duct Coil 4		N/A maintain HWS/R piping.	Retrofit new 200 MBH LTHW coil into existing duct.	N/A - No Fan				
	AHU 4 - Duct Coil 5			Retrofit new 200 MBH LTHW coil into existing duct.					
	AHU 4 - Duct Coil 6			Retrofit new 200 MBH LTHW coil into existing duct.					

	Building	Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Art Building (continued)	Steam UHs	Replace (3) steam UHs with new LTHW UHs.	Route approximately 100ft of new copper HW piping to each UH, with sizes ranging from 1 1/2" 1" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Replace existing UH with new LTHW UH. Provide new control valve.	Provide new LTHW UH.	N/A	The existing steam converter will be left in place as a supplemental and backup source. Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install (2) x 20 HP 450 gpm end suction pumps with VFDs, fully grouted isolation bases, suction diffusers and other appurtenances.	(3) New UH's expected to remain within existing electrical capacity.
	Perimeter Steam to HW Converter HW Convectors HW UHs HW Wall Fin	Deploy a high temperature booster heat pump using the proposed campus LTHW as a source, and creating HTHW for the existing perimeter HW loop. The existing steam converter and pump infrastructure shall remain in place as backup. HW & CHW piping infrastructure and coils will remain unchanged.	N/A maintain HWS/R piping.	N/A	N/A	Provide a (2) SBH200 60 ton modular water to water heat pump located in the existing mechanical room. The combined total is 1450 MBH which will provide for the system load the majority of the year. Connect in sidecar configuration to existing building piping loop. Provide new controls for WWHP and accessories, tie into existing building BAS. Assume (20) physical points & (40) virtual points.		Provide new duplex ECM circulator pump array serving the WWHP, B&G EcoCirc 375XL or similar. Provide dedicated magnetic filter on header. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.)	112 kW new (2x)SBH200 Modular WSHP (2) 3 HP B&G EcoCirc 375XL or similar.
	DHW	Add a new WSHP DHW heater to offset the DHW capacity from the steam converter. The steam converter should be left in place as back up.	New supply and return piping from campus LTHW to new DHW Heat Pump. New DHW piping to integrate storage tank.			Provide new Transom SWH150 WSHPs using the proposed campus LTHW to provide DHW to facility. Provide 100 gallon storage tank. Provide new 20 GPM B&G EcoCirc Pump. Tie into existing DHW system. Existing to remain in place as back up.			25.8 kW power for new Transom SWH150 WSHP. New 1/2 HP Circ Pump

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Sutton Hall	AHU-1 Steam to HW HX VAV RH Coil FTR FCU-1	Deploy a high temperature booster heat pump using the proposed campus LTHW as a source, and creating HTHW for the building. The existing steam converter and pump infrastructure shall remain in place as backup.	N/A	N/A	N/A	Provide a (2) SBH150 45 ton modular water to water heat pump located in the existing mechanical room. The combined total is 1115 MBH which will provide for the system load the majority of the year. Connect in sidecar configuration to existing building piping loop. Provide new controls for WWHP and accessories, tie into existing building BAS. Assume (20) physical points & (40) virtual points.	The existing steam converter will be left in place as a supplemental and backup source. Existing convertor, associated pumps and accessories to remain. Reconfigure piping to tie into the building HWS/R loop downstream of the proposed new WWHP in a sidecar configuration.	Provide new duplex ECM circulator pump array serving the WWHP, B&G EcoCirc 375XL or similar. Provide dedicated magnetic filter on header. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.)	85 kW new (2x)SBH150 Modular WSHP (2) New 3HP Pumps
	DHW	Existing electric DHW to remain in place.				N/A			N/A
Huston Hall	AHU-1	Demolish existing steam piping at AHUs Add steam to HW converter for backup? For AHU 1 & 2 Add (2) new AHU LTHW coils Add (2) new fan walls	Route approximately 1500ft of new cast iron & copper HW piping to each AHU, with sizes ranging from 4" at the pump header to 3" & 2.5" at the coil connections. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 900 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 16000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 3000MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. (2) New 130 GPM LTHW Pumps	(2) New 7.5 HP Pumps (2) New Fan Walls expected to remain within existing electrical capacity.
	AHU-2			Retrofit new 500 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 9000 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories				
	AHU-3			N/A Cooing Only	N/A Cooing Only				
	SF-5			N/A Cooing Only	N/A Cooing Only				
	CRAC-1			N/A Cooing Only	N/A Cooing Only				
	DHW	Add a new WSHP DHW heater to offset the DHW capacity from the steam converter. The steam converter should be left in place as back up.	New supply and return piping from campus LTHW to new DHW Heat Pump. New DHW piping to integrate storage tank.			Provide new Transom SWH100 WSHPs using the proposed campus LTHW to provide DHW to facility. Provide 100 gallon storage tank. Provide new 20 GPM B&G EcoCirc Pump. Tie into existing DHW system. Existing to remain in place as back up.			16.7 kW power for new Transom SWH100 WSHP. New 1/2 HP Circ Pump

Appendix C | Renovation Scope by Building

Building		Summary of Retrofit	Pipe Replacement	Coil Replacement	Fan Replacement	Booster Heat pump	Steam Converter	HX & Hydronic Pump(s)	Electrical Impacts
Communications	AHU	Demolish existing steam piping at AHU Add steam to HW converter for backup? New AHU LTHW coil New fan wall	Route approximately 1000ft of new cast iron & copper 2.5" HW piping to the AHU, with sizes. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 10150 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 400MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Install new duplex ECM circulator pump array, with peak design flow of 60gpm. Provide dedicated magnetic filter on header. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.) Pipe in parallel and tie into existing hydronic piping loop.	(2) x 2HP motors with ECM drives New Fan Wall expected to remain within existing electrical capacity.
	DHW	Existing electric DHW to remain in place.				N/A			N/A
Radio / TV Building	AHU-1	Demolish existing steam piping at AHU Add steam to HW converter for backup. New AHU LTHW coil New fan wall	Route approximately 1000ft of new cast iron & copper 2.5" HW piping to the AHU, with sizes. Provide all new coil appurtenances (shutoffs, P/T ports, strainers, etc.) and fill with 30% glycol solution.	Retrofit new 400 MBH LTHW coil into existing AHU cabinet and provide new control valve.	Retrofit new 10500 cfm fan wall array into existing AHU cabinet, including new flow sensors, VFDs, and control accessories	N/A	Provide new 400MBH shell & tube steam to HW converter, pipe in sidecar configuration to building primary variable LTHW loop.	Install new plate & frame HX between campus LTHW and new building LTHW loops. Provide new duplex ECM circulator pump array serving the WWHP, B&G EcoCirc 375XL or similar .Provide dedicated magnetic filter on header. Provide typical pump appurtenances (shutoff valves, strainers, P/T ports, etc.) Pipe in parallel and tie into existing hydronic piping loop.	(2) x 2HP motors with ECM drives New Fan Wall expected to remain within existing electrical capacity.
	DHW	Existing electric DHW to remain in place.				N/A			N/A

370 – Eastern Washington University

2025-23 Biennial Capital Budget Request

Attachments for Reference – Ref 4

EWU Civil Engineering Building – Applied Engineering Predesign Report

EWU Lucy Covington Center Predesign Report

ENGINEERING BUILDING

PREDESIGN STUDY
EASTERN WASHINGTON UNIVERSITY
PROJECT 30000556

JULY 1 , 2024

PREPARED FOR:
STATE OF WASHINGTON OFFICE OF FINANCIAL MANAGEMENT

BY:
EASTERN WASHINGTON UNIVERSITY
CONSTRUCTION AND PLANNING SERVICES

IN COOPERATION WITH LMN ARCHITECTS

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0.0 EXECUTIVE SUMMARY

0.1 PROBLEM STATEMENT

EWU's high-tech, hands-on engineering pedagogy has evolved beyond its existing substandard teaching laboratory facilities, originally designed to develop high school shop teachers. This lack of suitable space for contemporary engineering education also restricts EWU from offering a Civil Engineering program which would address the critical shortage of civil engineers across Washington State and leverage EWU's existing complementary strengths in geosciences and construction management.

EWU's Department of Mechanical Engineering & Technology (MENT) offers rigorous and pragmatic Mechanical Engineering, Mechanical Engineering Technology, Manufacturing, Applied Technology, and Construction Management degrees that prioritize hands-on training and applied learning that lead to high-paying, non-gig jobs. EWU's engineering classes are taught by faculty with industry experience. The department is housed in the 30-year-old Computing and Education Building (CEB).

MENT graduates are highly sought after in the growing Spokane and West Plains mechanical engineering marketplace—in the most recent survey, 86% of MENT graduates were employed in a job related to their degree within a year of graduation. Regional civil engineering firms often hire students from both MENT and EWU's Geosciences department due to the state-wide lack of qualified graduates in civil engineering. Given EWU's existing strengths in MENT and geosciences and the strong demand for civil engineers, EWU would like to expand its hands-on, career-oriented engineering degrees to include Civil Engineering (CE).

The high-tech, hands-on laboratory training which makes up a significant portion of MENT education currently takes place in substandard spaces with serious deficiencies consistently documented in accreditation visits. These include student safety concerns due to poor instructor sightlines, reduced overhead clearances and limited overhead services which restrict evolution with changing machine technology, aging technological infrastructure, ADA accessibility concerns, and lack of student interaction spaces. Lack of suitable space also restricts both the hiring of additional MENT faculty and the development of a CE program. Finally, the existing inadequate space has severely limited engineering research and on-campus industry collaboration.

0.2 PROPOSED SOLUTION

A new Engineering Building connected to the existing Computing and Engineering Building (CEB) is the best alternative to providing the contemporary, pedagogically appropriate facilities needed to flexibly serve multiple hands-on degree programs including the existing Mechanical Engineering and Technology and prospective Civil Engineering programs.

The 82,522 GSF building will house hands-on teaching and research laboratories, lab support facilities, and student meeting and study areas. 42,411 GSF of CEB and nearby Cheney Hall will be modified to create physical connections to the new building, take better advantage of existing spaces that are suited to non-lab MENT and CE courses, and optimize instructional and operational efficiencies. The construction of the Engineering Building will allow MENT program growth and degree production and allow EWU to offer a CE degree program, with conservative forecasting showing enrollment increasing 76% in the first five years of building occupancy.

Enabling engineering enrollment growth at EWU will not only change students' lifelong potential but lead Washington State in solving some of the 21st century's biggest challenges.

0.3 PROJECT CONTEXT

State and Regional Context

Engineering is one of the top three STEM occupations in Washington State and the Northeast Washington region. State reports indicate a 65% gap in supply of engineering bachelor's degrees needed to meet workforce demand in Washington State in the next five years. All bachelors degrees and certificate programs offered by EWU's Engineering Department are designated STEM/High Demand by the State of Washington and prepare students for entry into cutting-edge engineering and related professions.

Institutional Context

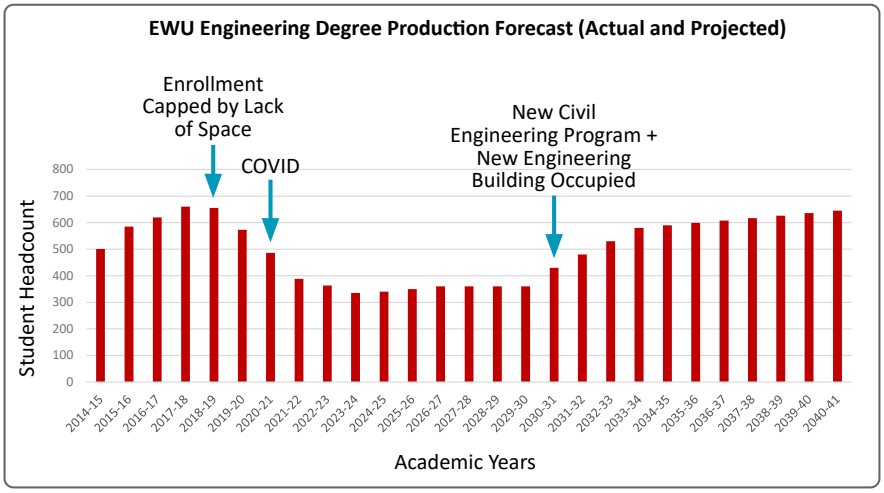
EWU's mission is to provide an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence.

EWU is in the implementation phase of a Strategic Resource Allocation project to better understand which programs (both academic and administrative) are thriving, which require additional support, and which should be eliminated or re-envisioned. From this analysis, engineering emerged as an area for further investment. EWU is also developing a strategic plan and examining its institutional branding and identity. An emerging theme of both efforts is a stronger institutional commitment to emphasize applied learning through serving the needs of the region.

The proposed Engineering Building will support EWU's mission by providing facilities which will encourage enrollment in high-demand degree programs, create spaces that foster inclusive practices, support community and prospective student outreach activities with rural and underserved populations, improve the quality and safety of laboratories, be a living laboratory for sustainability, fully inspire and support students' unique interests through degree completion, and encourage student engagement with each other, the engineering programs and the regional engineering industry.

Enrollment Growth

From 2010 through 2020, EWU's Mechanical Engineering and Technology program experienced strong and sustained enrollment growth. Rebuilding post-Covid requires contemporary, inspiring, pedagogically appropriate facilities that can flexibly serve multiple hands-on degree programs in the future. The Engineering Department has built highly successful outreach programs to rural and underserved prospective student populations and continuation programs with community colleges, which have created a strong pipeline for future MENT & CE students. With the introduction of a new Civil Engineering degree, conservative forecasting shows enrollment increasing 76% in the first four years of building occupancy.



0.4 SPACE NEEDS ASSESSMENT

The program requirements for the Engineering Building and renovation of CEB were developed with campus and engineering faculty and summarized below:

PROGRAM ELEMENT	AREA (ASF)	
ENGINEERING BUILDING		
Teaching Labs	31,400	
Research Labs	3,267	
Lab Support	1,800	
Offices & Office Support	1,740	
Collaboration	7,180	
Total Engineering Building (ASF)	45,387	
Estimated Net/Gross Ratio	55%	Ratio consistent with other science buildings
Estimated Engineering Building Area (GSF)	**82,522**	
CEB Renovated Spaces		
Teaching Labs	14,406	
Research Labs	2,863	
Classrooms	1,296	
Offices & Office Support	8,809	
Collaboration	4,051	
Total CEB Renovated Space (ASF)	31,425	
Estimated Net/Gross Ratio	80%	
Estimated CEB Renovated Area (GSF)	**39,281**	
Cheney Hall Renovated Spaces		
Teaching Labs	981	
Research Labs	1,836	
Total CEB Renovated Space (ASF)	2,817	
Estimated Net/Gross Ratio	90%	
Estimated CEB Renovated Area (GSF)	**3,130**	

EWU aspires to at minimum achieve the mandatory LEED® Silver certification; higher certification levels and other methods to reduce greenhouse gas emissions will be explored in future phases.

0.5 ANALYSIS OF ALTERNATIVES

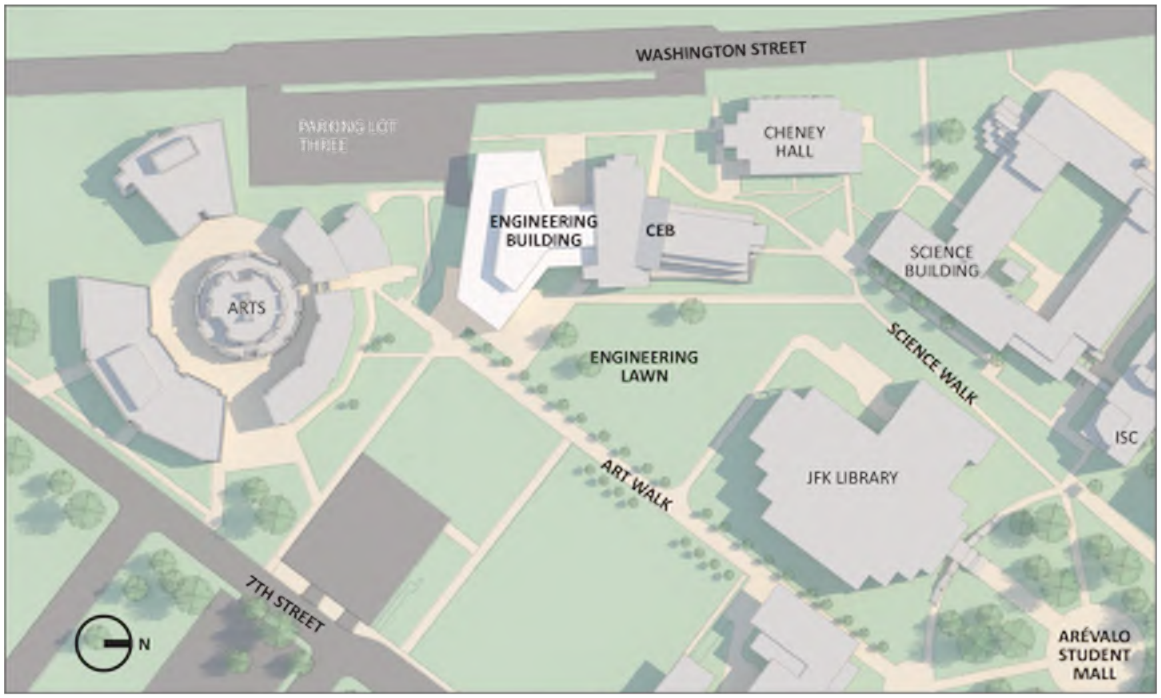
Three alternatives were considered for addressing the identified needs:

- No action
- Full renovation of the existing CEB and Cheney Hall facilities
- A new building on the existing campus connected to CEB

No action would maintain substandard, pedagogically inappropriate facilities and makes it impossible for EWU to offer new, high-demand STEM degree programs such as civil engineering. A full renovation of the existing CEB is not prudent given that most spaces are good condition for their intended use as classrooms, and the resulting laboratories would still be substandard in size and quality due to restricted dimensions and existing low ceiling heights.

0.6 SITE ANALYSIS

Five candidate sites on the Cheney campus were identified and evaluated to determine a preferred site for the a new Engineering Building. Key factors in the site selection were appropriate area available, proximity and possible connections to the existing CEB, increasing proximity to Washington Street for greater visibility to industry and community, connections to campus pedestrian and ADA circulation, and disruption to existing buildings and landscape. Topography, solar orientation, access to utilities, service access, parking impact, and future campus expansion were also considered.



EWU Engineering Building Site Plan

The site selected is Site C: Cadet Hall, which is located immediately south of the existing CEB and east of Washington Street. The site best meets the factors above and responds to EWU's 2014 Master Plan Goals of connecting to the larger community and enhancing open space. Another benefit is this site's proximity to the newly proposed all-electric geothermal heating and cooling plant that will service this building, removing it from the existing fossil fuel fired steam plant.

0.7 PREFERRED ALTERNATIVE

Satisfaction of the identified needs can best be achieved through construction of a new building on EWU's Cheney campus integrally connected to the adjacent existing CEB. The preferred alternative will provide existing and planned Engineering programs with the contemporary, hands-on, safe teaching laboratories they need to flexibly serve existing and future engineering degrees. The new facilities will increase faculty and industry research opportunities, support community and prospective student outreach, and encourage student engagement with each other, the Engineering programs and the regional engineering industry.

The preferred alternative will construct a new four-story, 82,522 GSF facility housing engineering teaching laboratories, research laboratories, lab support facilities, work areas, and student collaboration and study areas. Square footage in the new Engineering Building is reduced by taking advantage of CEB's strengths as a traditional classroom and office building; 39,281 GSF will be renovated where suitable for the project program. The direct connection with CEB takes advantage of offering many efficiencies such as shared departmental and instructional resources, direct access to faculty and administrative offices, shared student amenities, and reduced building envelope. 3,130 GSF of suitable space in nearby Cheney Hall will also be renovated to complete the project program.

The demolition of Cadet Hall is also included in the project scope. See Section 4.0 Site Analysis for more detailed discussion of Cadet Hall and relocation of its current program.

0.8 PROJECT SCHEDULE SUMMARY

Predesign	March 2024 – June 2024
Design	November 2025 – January 2027
Building Permit	November 2026 – February 2027
Bidding	March 2027 – June 2027
Construction	July 2027 – February 2030
Closeout & Commissioning	March 2030 – May 2030
Move In	June 2030 – July 2030
Classes begin in Engineering Building	September 2030

0.9 BUDGET ANALYSIS

Escalated project costs for the Engineering Building are summarized as follows:

Acquisition Costs	$0
Consultant Services	$9,569,384
Construction Contracts	$106,942,195
Equipment	$6,403,647
Art Work	$636,743
Other Costs	$0
Project Management	$4,433,304
Total Project Request	**$127,985,272**

Detailed project costs have been submitted to OFM through the online Capital Budgeting System.

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1.0 PROBLEM STATEMENT

1.1 PROBLEM STATEMENT

EWU's high-tech, hands-on engineering pedagogy has evolved beyond its existing substandard teaching laboratory facilities, originally designed to develop high school shop teachers. This lack of suitable space for contemporary engineering education also restricts EWU from offering a Civil Engineering program which would address the critical shortage of civil engineers across Washington State and leverage EWU's existing complementary strengths in geosciences and construction management.

EWU's Department of Mechanical Engineering & Technology (MENT) offers rigorous and pragmatic Mechanical Engineering, Mechanical Engineering Technology, Manufacturing, Applied Technology, and Construction Management degrees that prioritize hands-on training and applied learning that lead to high-paying, non-gig jobs. EWU's engineering classes are taught by faculty with industry experience. The department is housed in the 30-year-old Computing and Education Building (CEB).

MENT graduates are highly sought after in the growing Spokane and West Plains mechanical engineering marketplace—in the most recent survey, 86% of MENT graduates were employed in a job related to their degree within a year of graduation. Regional civil engineering firms often hire students from both MENT and EWU's Geosciences department due to the state-wide lack of qualified graduates in civil engineering. Given EWU's existing strengths in MENT and geosciences and the strong demand for civil engineers, EWU would like to expand its hands-on, career-oriented engineering degrees to include Civil Engineering (CE).

The high-tech, hands-on laboratory training which makes up a significant portion of MENT education currently takes place in substandard spaces with serious deficiencies consistently documented in accreditation visits. These include student safety concerns due to poor instructor sightlines, reduced overhead clearances and limited overhead services which restrict evolution with changing machine technology, aging technological infrastructure, ADA accessibility concerns, and lack of student interaction spaces. Lack of suitable space also restricts both the hiring of additional MENT faculty and the development of a CE program. Finally, the existing inadequate space has severely limited engineering research and on-campus industry collaboration.

1.2 PROPOSED SOLUTION

A new Engineering Building connected to the existing Computing and Engineering Building (CEB) is the best alternative to providing the contemporary, pedagogically appropriate facilities needed to flexibly serve multiple hands-on degree programs including the existing Mechanical Engineering and Technology and prospective Civil Engineering programs.

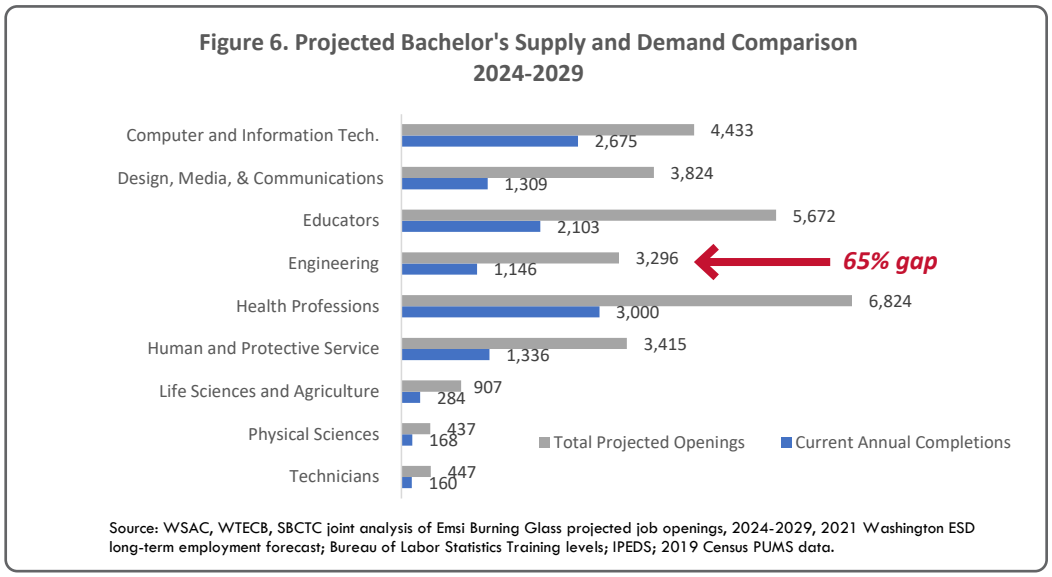
The 82,522 GSF building will house hands-on teaching and research laboratories, lab support facilities, and student meeting and study areas. 42,411 GSF of CEB and nearby Cheney Hall will be modified to create physical connections to the new building, take better advantage of existing spaces that are suited to non-lab MENT and CE courses, and optimize instructional and operational efficiencies. The construction of the Engineering Building will allow MENT program growth and degree production and allow EWU to offer a CE degree program, with conservative forecasting showing enrollment increasing 76% in the first ten years of building occupancy.

Enabling engineering enrollment growth at EWU will not only change students' lifelong potential but lead Washington State in solving some of the 21st century's biggest challenges.

1.3 STATE OF WASHINGTON CONTEXT

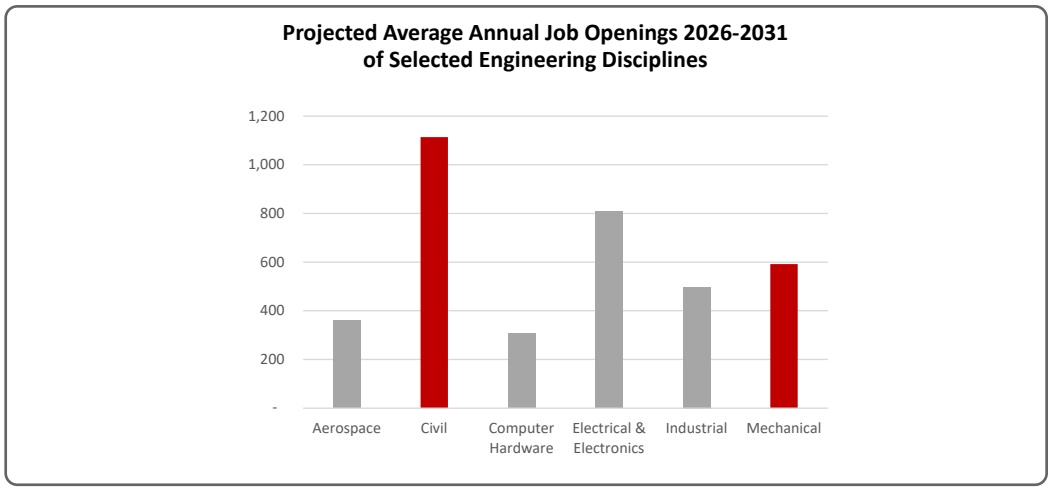
Higher Education Objectives

The Education and Research Data Center [ERDC] of the Washington Office of Financial Management has identified engineering as a STEM/High Demand field. "A Skilled and Educated Workforce 2021-22" issued jointly by the Washington Student Achievement Council, the State Board for Community and Technical Colleges and the Workforce Training and Education Coordinating Board forecasts a ***65% gap in supply of engineering bachelor's degrees*** needed to meet workforce demand in Washington State in the next five years. All bachelors engineering degrees awarded by EWU apply toward filling this gap.



Source: A Skilled and Dedicated Workforce 2021-22

The same report notes that ***demand for civil engineers tops the list*** of the number of annual openings in top engineering jobs at a bachelor's level. The 2023 WSAC HELM Report notes that civil engineering is and is predicted to continue to be one Washington State's top twelve occupations for at least the next ten years at a bachelor's and above level. 2023 WA Employment Security data predicts that ***mechanical engineers ranks in the top three*** in demand in engineering jobs. The Mechanical Engineering and Technology (MENT) and prospective Civil Engineering (CE) programs offered by EWU are focused on training graduates who can serve these regional needs.



Source: WA Employment Security, 2023

EWU Engineering Degree Production

EWU's engineering programs are focused on educating students who seek degrees in STEM, high demand engineering professions. From 2010 through 2020, EWU's MENT program experienced strong and sustained enrollment growth. As described further in Section 1.3 Operational Context, rebuilding growth post-Covid requires contemporary, inspiring, pedagogically appropriate facilities that can flexibly serve multiple hands-on degree programs in the future. With the introduction of a new Civil Engineering degree, conservative forecasting shows enrollment increasing 53% in the first ten years of building occupancy.

1.4 INSTITUTIONAL CONTEXT

EWU is in the implementation phase of a Strategic Resource Allocation project to better understand which programs (both academic and administrative) are thriving, which require additional support, and which should be eliminated or re-envisioned. From this analysis, **engineering emerged as an area for further investment**. EWU is also developing a strategic plan and examining its institutional branding and identity. An emerging theme of both efforts is a stronger institutional commitment to emphasize applied learning through serving the needs of the region. In Spring 2024, EWU adopted a revised Mission, Vision, and Statement of Values for the university.

EWU's Mission & Vision:

The proposed Engineering Building will support EWU's mission and vision by providing facilities which will encourage enrollment, support community and prospective student outreach activities with rural and underserved populations, improve the quality and safety of laboratories, and encourage student engagement with each other, the engineering programs and the regional engineering industry.

EWU Mission: Eastern Washington University provides an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence.

EWU Vision: Eastern Washington University provides an education rooted in the liberal arts, designed to address the unique challenges and opportunities facing the region. Characterized by a student-centered focus and opportunities for applied learning in high demand fields, this education creates upward social mobility and intellectual growth for our students that supports a healthy, sustainable, and economically successful region.

EWU MENT student in the Robotics Lab

EWU's Strategic Plan

EWU's developing strategic plan (2024-2029) will be supported by the Engineering Building as described below:

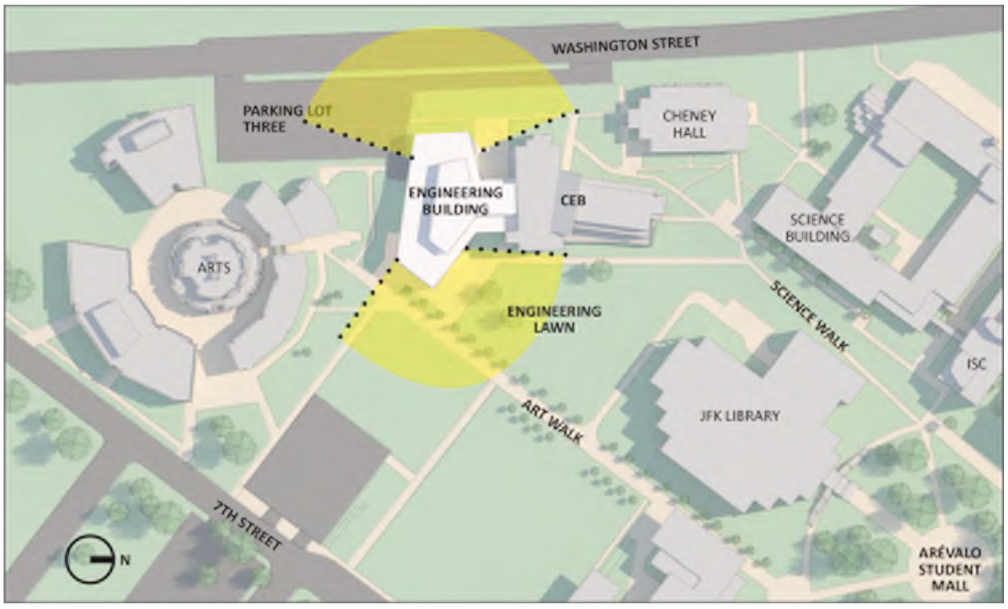
EWU Strategic Plan Pillars	Engineering Building's Role In Pillars
Accessibility. Eastern Washington University strives to create a more inclusive, obtainable, and equitable college education.	The Engineering Building will increase access to high demand degrees and provide critical space for community engagement with prospective rural and underserved students.
Academic Excellence. As a community of learners, we pursue truth and advance knowledge through creative works, research, and scholarship. Our student-centered education provides excellent teaching, dynamic conversations, and a robust intellectual experience both inside and outside the classroom. We provide applied learning opportunities to prepare students for future success, invest in our workforce and create opportunities for professional growth for students, faculty, and staff.	The Engineering Building's contemporary, hands-on teaching laboratories and collaboration spaces will support innovative instruction and exchange of ideas. Increased enrollment through a contemporary facility that celebrates applied learning will allow the department to add a civil engineering degree and graduate programs which will result in additional FTE faculty hires.
Belonging through Justice, Equity, Diversity and Inclusion. We are committed to building an inclusive, supportive, and equitable university community. We strive to integrate the principles of justice, equity, diversity, and inclusion into all university operations, fostering an environment that nurtures a sense of belonging among all members of the community. Students, staff, and faculty are seen, understood, and appreciated for the talents they bring to our educational community.	The Engineering Building will be a place to practice inclusive practices through the hands-on nature of the teaching laboratories, the transparency into student project laboratories, ample space to assemble and display student work, and visible spaces for team collaboration and student clubs. A central space for internal and outreach events and celebrations welcomes and invites students and faculty to participate in the larger engineering community.
Regional Impact and Regional Contribution. We promote economic vitality and regional success through scholarly research, dedicated service, and educational programs that meet regional workforce needs in high demand fields. When combined with our commitment to a liberal arts education, we enhance social mobility, inclusivity, and the well-being of our community while remaining nimble to its ever-changing demands.	Not only will the Engineering Building contribute meaningfully to the regional engineering workforce demand through increased enrollment, it will increase student and faculty interaction with the cutting-edge mechanical and civil engineering industries in the region through contemporary research laboratories and flexible space for departmental outreach.
Student Success. We embrace all students. Students' needs are complex, and student success requires student engagement and positive outcomes. We are committed to supporting all our students with a focus on creating conditions informed by the needs of our first-generation, low-income, and other structurally marginalized students	The Engineering Building will be a student-centered environment. Its high quality, hands-on teaching and project laboratories, flexible work areas and student interaction spaces will inspire and fully support their unique engineering interests and ideas through degree completion.
Sustainability. We are leaders committed to sustainability as a balance between the needs of the environment, the needs of the economy, and equitable outcomes for current and future generations.	The Engineering Building will be a living laboratory for sustainable facility design, with building systems on display for faculty and students. A civil engineering program helps to sustain the local economy and infrastructure.

EWU's Master Plan

In 2014, the university updated the Cheney Campus Comprehensive Master Plan. In Horizon 1 (2013 to 2023) 1.4.5, the plan states: *Construct addition to the Computer and Engineering Sciences Building*. EWU's planning process integrates comprehensive campus planning with its facilities master plan and ten-year capital plan. This process provides short and long-range planning that is thoughtful and targeted but still dynamic and flexible enough to meet current and future campus needs.

The Master Plan describes five planning principles which the Engineering Building follows:

- *Carefully evaluate each project with regard to renovation vs. replacement opportunities*
  See Section 3.0 for renovation vs. replacement studies.
- *Locate and size all new or replacement buildings to optimize site utilization*
  See Section 4.0 for site optimization studies.
- *Improve the overall character of the campus with the implementation of each project*
  The Engineering Building will have two front doors to engage students on campus at the Engineering Lawn and the regional community on Washington Street. It will be visible from the southeast corner of Arévalo Student Mall at the entry to the Art Walk.
- *Create and follow a framework that welcomes EWU's neighbors and accommodates future campus expansion beyond existing boundaries*
  The building has been intentionally sited on Washington Street to present a new, dynamic front door for the Engineering Department and EWU that is highly visible and accessible to the surrounding community. Space for community outreach programs and events will be located just inside the Washington entrance.
- *Reinforce and improve the overall cohesion of campus, specifically linkages across Washington Street, whenever possible*
  Extending the Engineering Building to the East from Washington Street introduces a strong edge to the existing Engineering Lawn, complementing the edge created by JFK Library. The Engineering Building's student entrance on the Engineering Lawn and a new pathway to this entrance from Science Walk will further activate the Engineering Lawn. The building will improve and the pedestrian experiences of the Art Walk and 7th Street.



Engineering Building Site Plan: Dual Orientation Toward Washington & the Engineering Lawn

1.5 OPERATIONAL CONTEXT

Background

The Computing and Engineering Building (CEB) was built as a traditional classroom and office building in 2005 to house the then intertwined departments of computer science and engineering. In the years since, the disciplines have grown into three distinct departments, each of which has seen dramatic growth in employer demand for bachelor degree graduates.

Since their creation, the disciplines have also seen significant shifts in the greater Spokane region. The regional computer science industry has grown and consolidated in the Spokane City Center and mechanical engineering has taken center stage as Spokane and West Plains mechanical engineering companies have emerged as major players in their markets. EWU has been a long-time leader in regional bachelor degree production for the engineering disciplines; the Computer Science BS was accredited in 1986, the Mechanical Engineering Technology BS in 1990, the Electrical Engineering BS in 2005, and the Mechanical Engineering BS in 2011.

To reflect these regional shifts and to keep up with demand for graduates, EWU's Computer Science and Electrical Engineering programs relocated to EWU's Catalyst Building in downtown Spokane in fall 2020, allowing engineering facilities on EWU's Cheney campus to focus on the Mechanical Engineering, Mechanical Engineering Technology, Manufacturing, Construction Management, and Technology degree programs.

Mechanical Engineering and Technology

EWU's Department of Mechanical Engineering and Technology (MENT) offers rigorous and pragmatic degrees that prioritize hands-on training and applied learning. The majority of students are enrolled in Mechanical Engineering, Mechanical Engineering Technology, Applied Technology, Construction Management Technology, and Manufacturing Technology. The majority of faculty in MENT have extensive industry experience. Majors in the MENT department make up approximately 5.5% of EWU's total undergraduate enrollment, while majors in all of the engineering and computer science disciplines constitute approximately 12.5% of the total undergraduate enrollment.

A unique aspect of EWU's engineering programs is that the robotics and automation curricula are housed within MENT, rather than the more conventional home in Electrical Engineering. This gives an inherently more interdisciplinary approach to training students with an interest in moving directly to the workforce. By training students with a mechanical engineering background how to program and operate industrial robots and Programmable Logic Controllers (PLCs), EWU's

EWU MENT student in the Robotics Lab

MENT graduates enter the workforce with an unusually holistic understanding of advanced manufacturing processes. MENT students combine experience programming an industrial robot or manufacturing line with a deep understanding of the physical systems themselves (e.g. manipulators, grippers, material strength, etc). The curriculum is built specifically to address the needs of regional industry that focuses on advanced manufacturing, large scale mechanics, and heavy industry robotics. EWU's degree programs involve classroom, laboratory and project work that results in graduates who have not only learned about mechanical engineering, they know how to apply it.

The MENT department at EWU strives to ensure that students graduate with a resume not just a diploma. Career placement data demonstrates that EWU's MENT graduates are sought after in the marketplace. A 2019 survey of recent MENT graduates showed that 86% of MENT alumni report that they are employed full or part-time in the year following graduation, with most students employed within the first six months after graduation. This number has held steady over more recent years. 55% of the ME and MET respondents also reported salaries over $60,000 *in their first year*.

New Degrees

Introducing a Civil Engineering degree has been a long-time goal of EWU. The university has made this top priority as the region continues to forecast high demand for civil engineers into the next decade. EWU's plan is to differentiate its approach to Civil Engineering by leveraging the breadth of disciplines represented in the College of STEM, ranging from the natural sciences to the engineering fields. In addition to the robust Mechanical Engineering program and workforce-oriented Construction Management degree, EWU has a Geoscience department with historical strengths in geotechnical engineering, GIS, and remote sensing. Planning for EWU's Civil Engineering degree is a collaborative initiative of MENT and Geosciences. The planned program will emphasize energy-efficient infrastructure, "green" building design and construction, sustainable infrastructure development, low-impact development techniques, and sustainable materials.

To meet the increasing need for specialized and advanced training in industry, EWU also plans to expand its graduate curriculum to include programs such as a Masters degrees in Mechanical Engineering and Civil Engineering. It will be impossible to introduce these additional programs and degrees in the future without quality teaching and research laboratory spaces.

EWU MENT teaching lab facilities with substandard overhead clearances in the CEB basement

Existing Facilities

EWU's engineering programs had their roots in an earlier program primarily focused on training high school Career and Technical Education teachers (e.g. shop, graphic design, and electrician teachers). EWU began to transition these programs to true engineering degrees in the late 1990s; the new engineering programs were still in their infancy when CEB was constructed in 2005. The basement of CEB, where the primary MENT teaching labs are located, was programmed and built to reflect those early needs and philosophy. The engineering programs have changed dramatically since that time, now producing Mechanical Engineering and Mechanical Engineering Technology graduates prepared for cutting-edge jobs at engineering and advanced manufacturing companies throughout the region.

While moving Computer Science to Spokane resulted in some vacant computer laboratories in CEB, these spaces are not suitable for the majority of MENT or CE teaching laboratories due to their minimal mechanical, electrical and plumbing services and overhead clearances. The basement of CEB contains the only spaces in the building with the mechanical, plumbing and electrical capabilities required for the hands-on materials and machine laboratory training which makes up a significant portion of MENT education. As noted previously, the basement of CEB is cramped and dark; not an inspiring place to spend two to four years earning a degree.

EWU MENT large student projects workspace & storage in loading door pathway

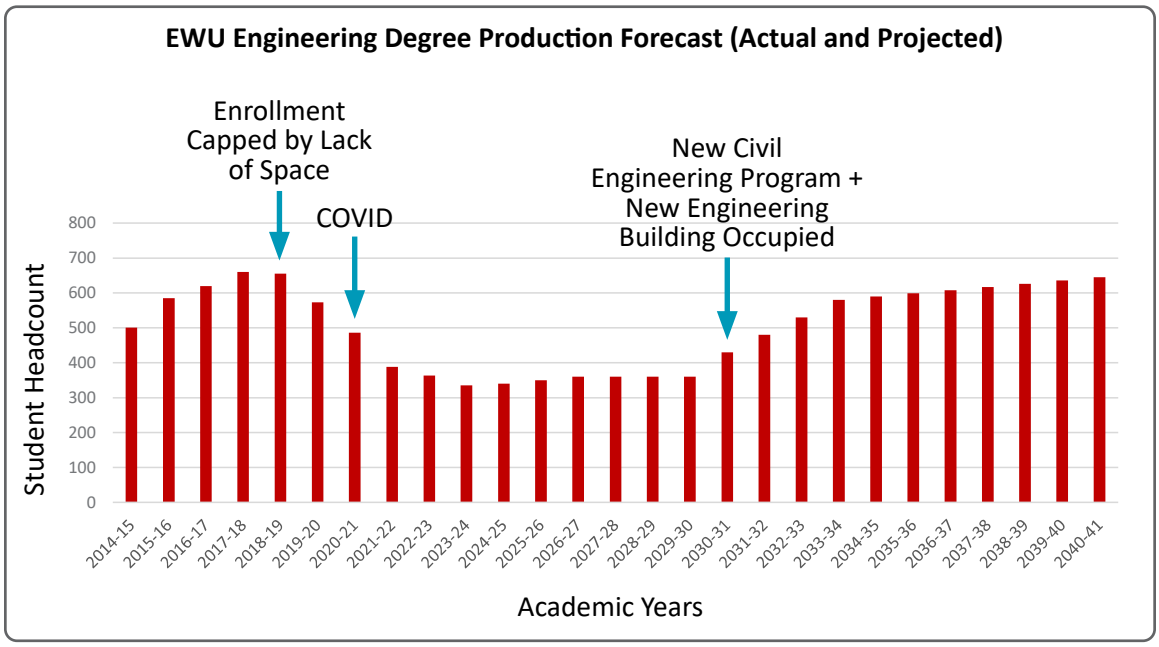
While there has not been certification difficulty to date, accreditors consistently cite strong concerns regarding capacity and safety issues in the existing CEB engineering laboratories. A primary concern of both faculty and accreditors is student safety due to poor sightlines in these spaces. Overhead clearances do not allow the relocation and addition of certain equipment, and overhead services are minimal resulting in space that is inflexible to the constantly evolving requirements of the field.

The lack of flexible, interdisciplinary collaboration spaces will also make future degree certification challenging. Students must complete a team capstone project to graduate. There is limited space for student teams to meet to develop their projects, so students work in circulation zones or amidst laboratory machine areas, adding to safety concerns. These projects are often physically large and need to be located near hand-on laboratory spaces during their production. The very limited storage space in the CEB basement is not only insufficient for the current number of capstone projects but nonexistent for large projects which results in them being stored in teaching laboratories or circulation zones which, in turn, become even more crowded and unsafe.

In 2006, several rooms in nearby Cheney Hall were renovated to provide additional labs required by the Electrical Engineering program. Further details on the existing facilities in CEB and Cheney Hall can be found in Section 2 of this report.

Enrollment Forecast

From 2010 through 2020, EWU's MENT program experienced strong and sustained enrollment growth, so much so that the Department capped enrollment in 2018-2019 due to lack of facility capacity. The pandemic further depressed EWU's engineering enrollment. Since Covid, the engineering programs have continued their strong outreach programs to rural and underserved



prospective student populations by providing hands-on engineering activities which have historically directly correlated with subsequent enrollment at EWU and in engineering degrees. MENT in particular has built and maintained strong continuation programs with community college programs to move related Associate in Arts degrees holders (AA) into engineering bachelor's degrees at EWU. Each year, the College of STEM organizes one of the biggest STEM-focused career fairs in Washington State.

EWU MENT students in the Metallics Lab in the basement of CEB

However, in the post-Covid environment, prospective students also need to see that they'll be inspired during the process of earning a degree, and the prospect of spending two to four years in the existing cramped, dark MENT facilities in the basement of CEB does the opposite. ***A facility which forefronts MENT and CE work, including daylit hands-on laboratories and adequate student project space will encourage prospective students to see themselves at EWU and to see their success after graduation.***

Rebuilding post-Covid requires contemporary, inspiring, pedagogically appropriate facilities that can flexibly serve multiple hands-on degree programs in the future. With the introduction of a new Civil Engineering degree, conservative forecasting shows enrollment increasing 76% in the first four years of building occupancy.

Industry Involvement & Research

EWU's Department of Mechanical Engineering & Technology has a long history of strong relationships with the regional manufacturing industry including internships, company tours, career preparedness, guest lectures and instruction, on-campus interviews and engagement events. The current facilities can no longer accommodate the increased attendance at popular events such as capstone project demonstrations and the career fair, which must be held elsewhere on campus reducing the impact of the engineering experience for prospective students and industry partners. During on-campus job interviews, students are often interviewed in groups due to lack of suitable spaces.

A department goal is to provide opportunities for students and industry partners to interact and work together in active, hands-on engineering settings at EWU. The department has provided on-campus testing and product development support to industry partners in the past, but cannot provide these capabilities currently due to limited facilities. Companies have donated major robotics equipment in the past but the department has recently declined state-of-the-art robotics equipment donations due to lack of suitable facilities. Similar donations from mechanical engineering companies are restricted by the lack of suitable facilities.

Table 2. Describe the skill sets you struggle to find locally

	Responses	Percent
Soft Skills	25	20%
Commercial Drivers	7	6%
Machinery	7	6%
Sales	6	5%
Skilled Trades	6	5%
Welders	6	5%
Total Responses	124	

n=124

Source: Washington State Regional Educational Needs Assessment 2017

The Department works closely with S3R3 (West Plains/Airport Area Public Development Authority) which states that "the West Plains Airport Area is a globally recognized innovation zone with advanced manufacturing and aerospace industry clusters." Access to an educated workforce is critical to prospective companies and EWU's Department of Mechanical Engineering & Technology is a major contributor to building advanced manufacturing technology industries in the region.

There is strong interest by current faculty and industry in strengthening mechanical engineering and advanced manufacturing research capabilities at EWU. Given the limited existing laboratory space appropriate for hands-on engineering work and the priority to educate and graduate

students, engineering research has been severely limited and will continue to be limited without dedicated research space. An increase in faculty due to an increase in enrollment will increase the demand for research space.

Student Collaboration & Community Building

The Washington State Regional Educational Needs Assessment 2017 states that "a repeated concern of local employers was the lack of soft skills among new and potential employees." EWU's Department of Mechanical Engineering & Technology is committed to developing graduates who not only have technical knowledge and the ability to apply it, but also have real world skills such as leadership, teamwork, and communication to succeed in their careers.
Unfortunately the current facilities do not have the student interaction and faculty-student interaction spaces to encourage the types of interpersonal interactions that develop these skills. Capstone projects are team based but there are no meeting spaces for student teams to gather in. Commuters comprise the majority of EWU students but there is limited space for students to study and interact in the current facilities.

There are limited informal meeting spaces for faculty to interact with individuals and teams of students outside of class. There is only one large meeting room in CEB. Departmental community-building events are now often too large to be held at CEB and must be held elsewhere on campus.

Student clubs have limited to no space to work or meet. For example, the SAE Baja Club has access to a small space in Cheney Hall which they share with non-engineering student clubs and the Rocketry Club borrows space in the capstone projects lab. The department expects that enrollment in these and other applied engineering clubs would increase significantly given appropriate space with greater visibility to other students.

Community Outreach

Learning how to talk about their work with non-engineers is seen as a critical skill for EWU Engineering graduates, and the department supports that through community and industry outreach programs and events which the students are expected to participate in.

As noted in the Enrollment Forecast section, the Department of Mechanical Engineering & Technology has built successful outreach programs to rural and underserved prospective student populations by providing hands-on engineering activities, events and clubs with the community. It would be most impactful to host these events in the engineering facilities to inspire prospective students to visualize an inspiring college engineering experience, but the department currently cannot house these events due to the space constraints and safety concerns described earlier, and so most outreach is mobile.

1.6 PROJECT HISTORY

The predesign process began in 2020 with a predesign process and report centered around providing pedagogically-appropriate space for the MENT program through a series of stakeholder work sessions including administrators, faculty and staff from the College of STEM, engineering faculty and staff, EWU Facilities & Planning and LMN Architects. The report was completed at the start of the pandemic at which point University priorities shifted in response.

Four years later, new facilities for Engineering and the development of a Civil Engineering program remain on EWU's 10-year plan. The 2024 predesign report process included stakeholder work sessions with a similar range of participants which resulted in revisions to the project program space list, organizational relationships, and space use strategies which reflect the operational context described above.

2.0 SPACE NEEDS ASSESSMENT

2.1 ASSUMPTIONS AND GUIDELINES

2.2 EXISTING FACILITIES

2.3 SPACE NEEDS ASSESSMENT

2.4 SPACE REQUIREMENTS

2.5 TECHNICAL PROGRAM REQUIREMENTS

2.6 FUTURE REQUIREMENTS

2.7 CODES/REGULATIONS

2.1 ASSUMPTIONS AND GUIDELINES

Programming is the phase in which the project needs are defined, goals are identified and initial budget information is developed. It forms the foundation upon which all subsequent design work is based. The following assumptions were utilized in forming the program requirements:

- The current MENT pedagogy and prospective CE degree require contemporary teaching laboratories, in particular hands-on laboratories with adequate space and systems.
- Each engineering major must complete a capstone project in order to graduate which require project laboratories and projects storage spaces appropriate to those projects.
- Heavy teamwork and the fact that the majority of EWU students are commuters requires adequate student interaction spaces, in particular meeting rooms, study spaces, lounge spaces, and community areas.
- The department's continued success in prospective student outreach warrant interaction spaces for open houses, MESA activities, and other community projects which are critical to achieving EWU's mission and vision.
- The department's continued success in collaboration with local industry warrants interaction spaces for industry job fairs, interviews and collaboration.
- Current faculty interest in dedicated research space is strong, and projected enrollment increases will allow the hiring of new FTE faculty with similar aspirations

Programming Standards

EWU considers a variety of space standards when planning and designing facilities described on the following pages in this section. EWU primarily relies on the design team's careful analysis of the activities and current pedagogical standards required by the specific occupants of a facility. For the Engineering Building, EWU selected LMN Architects, a national leader in higher education architectural design, and Research Facilities Design (RFD), a national laboratory planner with extensive experience designing engineering teaching laboratories. With EWU, the LMN/RFD team has proposed laboratories, classrooms and interaction spaces based on current industry standards. This process and standards are described in this section.

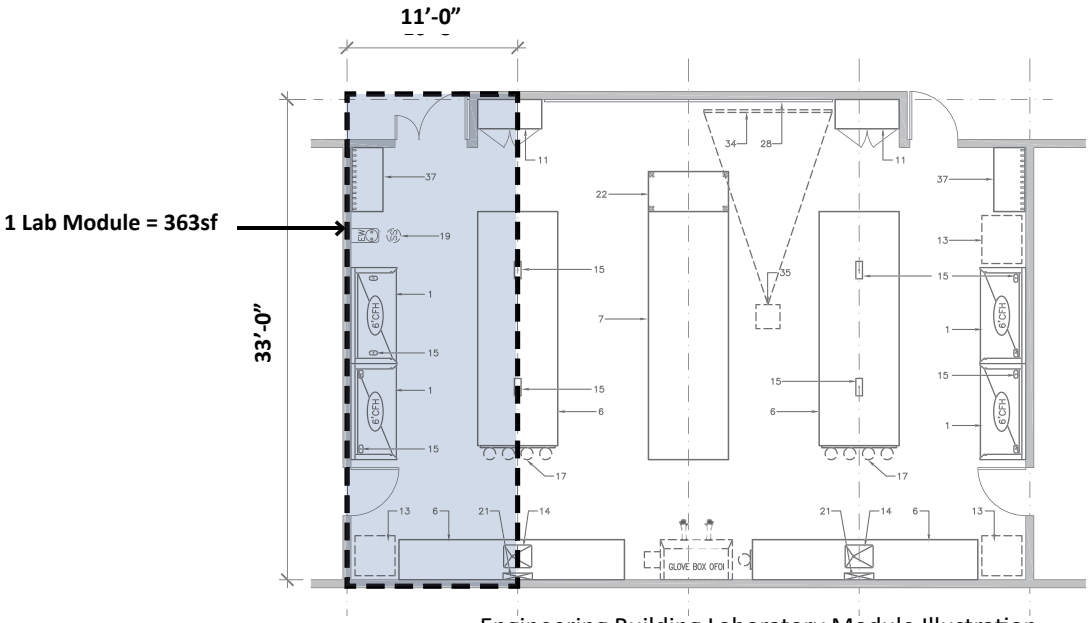
FEPG: Even though existing space planning references such as the Facilities Evaluation and Planning Guide 1994 (FEPG) and the Postsecondary Education Facilities Inventory and Classification Manual 2006 (FICM) are dated and do not accurately reflect the current needs and trends in higher education, they do hold some value as a rough benchmark and EWU uses them as such. The table below shows that the program for the Engineering Building and renovated CEB and Cheney Hall meet the FEPB standards. Note that FEPG Appendix A provides a wide range of lab station sizes for mechanical engineering labs.

FEPG room classification number	FEPG room classification type	Project ASF per station	FEPG standard	Meets standard (Y/N)	Comments
110	Classroom	20	16-26	Y	
210	Class lab – mechanical engineering	76-290	175 (Range 35-180)	Y/N	Varies based on engineering equipment sizes; see FEPG Standards Appendix A; Woodshop, Metallics, Additive Manuf, Construction Materials and Concrete Labs require significant additional ASF/Station for large equipment and safe working clearances.
215	Class lab – services			N/A	Sized appropriately to class lab needs
230	Computer lab	44	60	N	Falls below FEPG Guidelines but meets programming need
250	Research lab			N/A	Sized for research program needs
255	Research lab – service			N/A	Sized appropriately to research lab needs
311	Faculty office	140	140	Y	
313	Student assistants	70 per 1	140 per 2 min.	Y	
314	Clerical office	140	140	Y	
316 & 317	Staff & other office	113	120	Y	Below standards appropriate for visiting Advising staff
350	Conference room	30	20	N	Sized to allow program flexibility and storage needs
550	Demonstration			N/A	Sized appropriately for departmental needs
651	Nonpublic lounge			N/A	Sized appropriately for departmental needs
680	Meeting room			N/A	Sized appropriately for departmental needs

Efficiency of Space Allocation in the Engineering Building per FEPG 1994 Standards

Laboratory Module: To provide a baseline planning module for programming of teaching and research laboratories, a standard laboratory module was established by Research Facilities Design (RFD) based on industry standards and applicability to the types of laboratories included in the Engineering Building project.

The proposed laboratory planning module for the building was derived by analyzing the laboratory bench, equipment, and circulation space required for the engineering functions.



Engineering Building Laboratory Module Illustration

The module is based on the bench space required for technical work stations, instruments, and procedures. The space required between benches is designed to allow people to work back-to-back at adjacent benches, to allow for accessibility for disabled and still allow for movement of people and laboratory carts in the aisle.

The preliminary planning module utilized for the Engineering Building is 11'-0" wide by 33'-0" deep = 363 Assignable Square Feet. This module will provide adequate bench space plus space for floor standing equipment and fume hoods, and can be divided for smaller support spaces such as storage or instrument rooms.

Class and Research Laboratories: Preliminary areas for teaching and research laboratories were assigned based on benchmarks developed by RFD from similar university laboratory facilities, reviews of sizes of existing and proposed engineering equipment required in each lab, and on discussions with the faculty, staff and administration. Areas were rounded to the nearest laboratory module. Room diagrams for each proposed laboratory can be found in the Appendix of this report.

Classrooms: One classroom is included in the project scope as the result of reprogramming existing spaces in CEB. In order to create a physical connection to the Engineering Building on the Second Floor, two classrooms will be combined into one larger classroom.

Laboratory Service: The program size of lab support spaces was based on a comparison of existing spaces to identified needs.

Office and Staff Space: Renovations to office and staff space are intended to reduce average square footage to better align with current EWU office space standards.

2.2 EXISTING FACILITIES DEFICIENCIES

Two facilities currently house the engineering programs at EWU: the Computing and Engineering Building (CEB) and Cheney Hall. CEB houses the majority of the engineering program.

As noted in more detail under Existing Facilities in the Problem Statement section, CEB was designed in 2005 as primarily a classroom, computer lab and office building. Only the basement of CEB has the mechanical, electrical and plumbing systems suitable for the hands-on material and machine training which makes up a significant portion of MENT and CE education. In 2006, several rooms in nearby Cheney Hall were renovated to provide additional labs required by the electrical engineering program.

The existing facilities have serious pedagogical deficiencies which have been noted by accreditors and which are at odds with the university's mission to provide an inclusive, equitable, and transformative learning experience, driving the pursuit of knowledge with affordable academic excellence. Deficiencies in the existing buildings include:

Pedagogical Deficiencies in the Computer Engineer Building (CEB)
Teaching Lab Safety Deficiencies: The existing MENT program has made use of every square inch of the CEB basement, which contains the only facilities suitable for hands-on shop laboratories. In many cases due to space constraints in CEB, multiple laboratory classes that would normally be held in separate teaching laboratory facilities are being taught in the same space This has resulted in significant safety issues noted by both faculty and accreditors due to overcrowding and confinement. The awkward shapes of existing spaces do not allow instructors to have sightlines to all laboratory participants which is critical to student safety.

Teaching Lab Technical Deficiencies: The basement of CEB is the only facility with the mechanical, electrical and plumbing systems suitable for the existing MENT and prospective CE programs. However, across the entire CEB basement, overhead clearances are minimal and do not allow the relocation and addition of certain equipment. Overhead electrical services are also minimal resulting in space that is inflexible to the constantly evolving requirements of the field. Current laboratories do not have the vibration isolation and sound insulation that is required for high level experiments and research.

Teaching Lab Logistical Deficiencies: Mechanical and civil engineering laboratories are heavy consumers of bulky materials such as metals, woods and plastics which are delivered frequently. The main loading dock is on the first floor of CEB and the current freight elevator opens directly into a primary hands-on teaching lab (metallics) in the basement. All materials must be brought through that lab to other labs adding further safety and security concerns. Interior HVAC ductwork blocks the top three-four feet of the only basement loading door (which also happens to be in the Metallics Lab), rendering it almost useless for oversized deliveries, equipment access, or tall student projects. Metals deliveries arrive on semi-trucks, but exterior loading space in front of this basement door can only accommodate small delivery vehicles.

Pedagogical Deficiencies in Cheney Hall
Technological Deficiencies: The existing Cheney Hall building is unsuitable for today's educational technology. Data infrastructure—including wired and wireless connectivity—are lacking, as are appropriate audio-visual and data facilities. The building's primary and secondary electrical system are original (1967) and do not allow for the equipment associated with today's instruction delivery, particularly MENT and CE which use specialized computer software which require robust computers dedicated to those programs.

Accessibility Deficiencies: Cheney Hall does not meet current ADA requirements and can be restrictive to students with mobility issues.

Interaction Space Deficiencies: Cheney Hall completely lacks the non-classroom spaces that enable t"a robust intellectual experience both inside and outside the classroom" envisioned in the university's values. Spaces for informal student gathering, walk-in computer labs, lounges, collaboration, and study are currently non-existent. There are no spaces for informal and non-instructional interactions.

Building Systems Deficiencies: Cheney Hall's heating, ventilation, and air conditioning systems are of original design and installation. Systems do not meet current energy code and indoor air quality issues are prevalent in the facility. This facility's systems shortcomings have a substantial effect on instruction in the classrooms and laboratory spaces.

Building Conditions Deficiencies
Please see Appendix for the FCS reports for Cheney Hall, CEB and Cadet Hall.

Systems Deficiencies: Systems in both Cheney Hall and CEB are connected to the existing campus fossil fuel generated steam system, which does not align with Washington State's or the campus' decarbonization goals.

Cheney Hall Building Conditions Deficiencies: Cheney Hall was originally completed in 1966 to house the Industrial Arts program. The building is 50 years old. There have been some minor renovations of the building in 2006 and 2016. The balance of the shell and space is of original construction and condition. **The Overall Facility Condition Score for the building is 2.6.** Many of the components are in the Fair-Systems Approaching End of Expected Life Cycles with some at critical level of Needs Improvement;

Limited Functionality.

- Substructure : 2.0
- Shell : 2.3
- The substructure and the shell of the building rank in the category of "good." The roof and windows on the facility are original installation and do not meet current state energy code. The exterior walls and roof are not insulated and affect the utility cost of heating and cooling the building.
- Interiors: 2.8
- Most the interior walls, floors and ceiling are "worn" due to age with ceiling ranking 4 or "poor".
- Services: 3.0

The systems of the building are what show the most decline. While the Plumbing and Electrical are in the "fair" range, the HVAC and Fire Protection components are at the level of 4 and 5 "poor" equipment marginal or "unsatisfactory" system non-functioning or seriously deficient. The building HVAC system does not meet current Washington State energy code and there are reported indoor air quality issues that can only be address by a new ventilation system.
The building has many Americans with Disability Act (ADA) deficits due to the age and the original design. In particular, the elevator does not meet ADA requirements for current square foot or controls location.

Computing and Engineering Building Conditions Deficiencies: CEB was completed in 2005 and soon thereafter lacked any expansion space for program growth. The 2016 Facility Condition Assessment ranks the condition of the facility as "good/excellent" with an **overall 1.6 Facility**

Condition Score. Though CEB's condition score is good, the only space appropriate for the existing MENT and prospective CE programs is in the basement, and that space is substandard for today's high-tech, hands-on engineering learning environments.

2.3 SPACE NEEDS ASSESSMENT

After right-sizing existing program, analyzing existing space proficiencies and deficiencies, and accounting for enrollment growth with a contemporary facility and new CE program, the Engineering Department is currently deficient in:

- Instructional laboratory spaces for high-tech, hands-on applied learning
- Specialized laboratory spaces for faculty, graduate student and industry research
- Specialized laboratory spaces for student clubs and outreach activities
- Flexible open work space with exterior access for project and class extension
- Break-out laboratory classroom with sufficient space for engineering demonstrations
- Meeting rooms for student-student and student-teacher interactions
- Student study spaces and lounge
- Community space suitable for department and community outreach events

Open Work & Community Space (Work Area/Lobby/Demonstration Space)
Open work and community space, the fourth and final bullets above, are currently lacking in CEB and are critical to the success of the Engineering Department. The two functions can share space and are programmed as "Work Area/Lobby/Demonstration". Below are some of the planned uses of this space:

- Double height space with direct access to the outdoors, that can be used for both project work and demonstration, is required for student success. Student projects in MENT and CE can be physically large, occasionally up to ten feet tall. The department does not currently have space to support these projects which has forced them to be housed in inappropriate locations such as labs, and it has also had the unfortunate effect of limiting students' project choices and solutions.

- To support the large number of first generation and transfer students, the department has a tradition of holding capstone events for each of the four degrees and other industry interactive events every quarter. The department's annual STEM-focused career fair is one of the largest in Washington State. No space exists in the current facilities to support these activities at the size of the current department or with increased enrollment.

- An important part of the culture and success of the Engineering Program has been repeated interaction with a wide range of industry partners. The relationships built as part of those interactions generate private support, scholarships, equipment donations, collaborative projects and research opportunities. Space for these interactive events will allow expansion of these relationships. One departmental goal is to be able to serve as a resource to engineering societies in the region to hold events in collaboration with the University.

- Frequent events with many people and objects in this space are anticipated. To accommodate these, the scale of the space both horizontally and vertically must relate to the scale of the event and must also not limit the potential of large or non-stationary student capstone projects.

2.4 SPACE REQUIREMENTS

Program Room List

The program for the Engineering Building project is separated into two primary sections:

1. Engineering Building
2. CEB Renovated Spaces
3. Cheney Hall Renovated Spaces

The following tables compile the spaces that are required by the Engineering Building project program as assignable square footages.

ENGINEERING BUILDING					
SPACE ID	SPACE NAME	OCC.	ASF	QTY.	TOTAL ASF
TEACHING LABS					
1.01	Woodshop	16	2,904	1	2,904
1.02	Metallics and Foundry	22	4,538	1	4,538
1.03	HVAC	8	1,452	1	1,452
1.04	Fluid Power	24	1,815	1	1,815
1.05	Construction	12	1,815	1	1,815
1.06	Construction Engineering	8	1,452	1	1,452
1.07	Transportation & Pavement	8	1,452	1	1,452
1.08	Environmental Engineering	8	1,452	1	1,452
1.09	Fluids/Water Resources Engineering	8	1,452	1	1,452
1.10	Concrete	5	1,452	1	1,452
1.11	Concrete Testing	5	1,089	1	1,089
1.12	Wild Fire	4	726	1	726
1.13	ME/MET Projects Lab	12	1,452	1	1,452
1.14	ME/MET Projects Storage	3	1,452	1	1,452
1.15	Tech Projects Lab	12	1,452	1	1,452
1.16	Tech Projects Storage	3	1,452	1	1,452
1.17	Club Room	12	1,452	1	1,452
1.18	Makers Space Light	10	1,089	1	1,089
1.19	CE Projects Storage	3	1,452	1	1,452
SUBTOTAL TEACHING LABS					31,400
RESEARCH LABS					
2.01	Fluid Power Research	1	363	1	363
2.02	Robotics Research - Small Scale	10	1,452	1	1,452
2.03	Masters Research	8	1,452	1	1,452
SUBTOTAL RESEARCH LABS					3,267
LAB SUPPORT					
3.01	Materials Storage at Loading		300	1	300
3.02	General Building Storage		500	3	1,500
SUBTOTAL LAB SUPPORT					1,800
OFFICES & OFFICE SUPPORT					
4.01	Offices		140	2	280
4.02	Work Area		200	1	200
4.03	Faculty Offices		140	9	1,260
SUBTOTAL OFFICES					1,740
STUDENT COLLABORATION					
5.01	Work Area/Lobby/Demonstration GF		2,500	1	2,500
5.02	Work Area/Lobby/Demonstration L1		900	1	900
5.03	Team Room Small	4	120	9	1,080
5.04	Team Room Medium	8-12	240	5	1,200
5.05	Open Conversation Pre/Post Class		500	3	1,500
SUBTOTAL COLLABORATION					7,180
TOTAL ASF ENGINEERING BUILDING					**45,387**

CEB RENOVATED SPACES					
SPACE ID	SPACE NAME	OCC.	ASF	QTY.	TOTAL ASF
TEACHING LABS					
1.01	ME Thermodynamics/Heat Transfer	10	1,444	1	1,444
1.02	CE Thermodynamics	10	1,444	1	1,444
1.03	Additive Manufacturing	12	2,740	1	2,740
1.03	Sensor, Controls, PLC (combined)	32	3,838	1	3,838
1.04	Materials Science	8	1,359	1	1,359
1.06	Construction Materials	8	2,129	1	2,129
1.07	CAD Lab	33	1,452	1	1,452
SUBTOTAL RENOVATED LABS					14,406
RESEARCH LABS					
2.01	Thermodynamics/Heat Transfer Research	1	422	1	422
2.02	Materials Science Research	1	506	1	506
2.03	Robotics Research - Large Scale	8	1,935	1	1,935
SUBTOTAL RENOVATED LABS					2,863
LAB SUPPORT					
3.01	Lab Storage		400	1	400
SUBTOTAL LAB SUPPORT					400
CLASSROOMS					
4.01	Classroom	32-64	1296	1	1,296
SUBTOTAL CLASSROOMS					1,296
OFFICE & OFFICE SUPPORT					
	ME/CE Shared Dept Space				
5.01	Operations Manager Offices	1	140	2	280
5.02	Secretary Offices	1	140	2	280
5.03	Reception Desk/ Student	1	80	1	80
5.04	Waiting Area	4	120	1	120
5.05	Storage Closet		80	1	80
5.06	Workroom: Mail/Print/Copy		240	1	240
5.07	Faculty Lounge (CEB 318)		335	1	335
5.08	Faculty Conference Room	12	360	1	360
5.09	Faculty Conference Room	24	720	1	720
	Dean's Suite				
5.10	Advising Offices	1	120	2	240
5.11	Waiting Area	4	270	1	270
5.12	Workroom: Print/Copy		120	1	120
5.13	Storage Closet		80	1	80
5.14	Dean's Conference Room	12	360	1	360
	Faculty Offices				
5.15	Faculty Offices (reduce area to typ)	1	140	24	3,360
5.16	ME Tech Library/Flex Space		894	1	894
5.17	CE Open Work Area/Flex Space		450	1	450
5.18	Storage Closet		150	2	300
5.19	Workroom: Print/Copy		120	2	240
SUBTOTAL RENOVATED OFFICES					8,809
STUDENT COLLABORATION					
6.01	Student Lounge (CEB Basement)		1,918	1	1,918
6.02	Student Collaboration (CEB 203)	32	887	1	887
6.03	Team Room Small	6	120	4	480
6.04	Medium Conf Room (CEB 201)	24	766	1	766
SUBTOTAL RENOVATED COLLABORATION					4,051
TOTAL ASF CEB RENOVATION					**31,825**

CHENEY HALL RENOVATED SPACES					
SPACE ID	SPACE NAME	OCC.	ASF	QTY.	TOTAL ASF
TEACHING LABS					
1.01	Composites (CHN 208)	10	981	1	981
SUBTOTAL RENOVATED LABS					981
RESEARCH LABS					
2.01	Plastics/Composites Research (CHN 209)	2	981	1	981
2.02	ME Research (CHN 204)	2	855	1	855
SUBTOTAL RENOVATED LABS					1,836
TOTAL ASF CEB RENOVATION					**2,817**

Room List Summary & Net/Gross Ratio

The table below summarizes the preceding room lists and adds an industry standard net/gross ratio to achieve the total building area.

PROGRAM ELEMENT	AREA (ASF)
ENGINEERING BUILDING	
Teaching Labs	31,400
Research Labs	3,267
Lab Support	1,800
Offices & Office Support	1,740
Collaboration	7,180
Total Engineering Building (ASF)	45,387
Estimated Net/Gross Ratio	55%
Estimated Engineering Building Area (GSF)	**82,522**
CEB Renovated Spaces	
Teaching Labs	14,406
Research Labs	2,863
Classrooms	1,296
Offices & Office Support	8,809
Collaboration	4,051
Total CEB Renovated Space (ASF)	31,425
Estimated Net/Gross Ratio	80%
Estimated CEB Renovated Area (GSF)	**39,281**
Cheney Hall Renovated Spaces	
Teaching Labs	981
Research Labs	1,836
Total CEB Renovated Space (ASF)	2,817
Estimated Net/Gross Ratio	90%
Estimated CEB Renovated Area (GSF)	**3,130**

Ratio consistent with other science buildings

Relationships of Functions

The ideal relationships of teaching, project and research labs to each other was explored in multiple work sessions with the faculty, staff and administration. The process revealed that there were certain labs which have many preferred adjacencies and others which have few or none.

Preferred Adjacencies

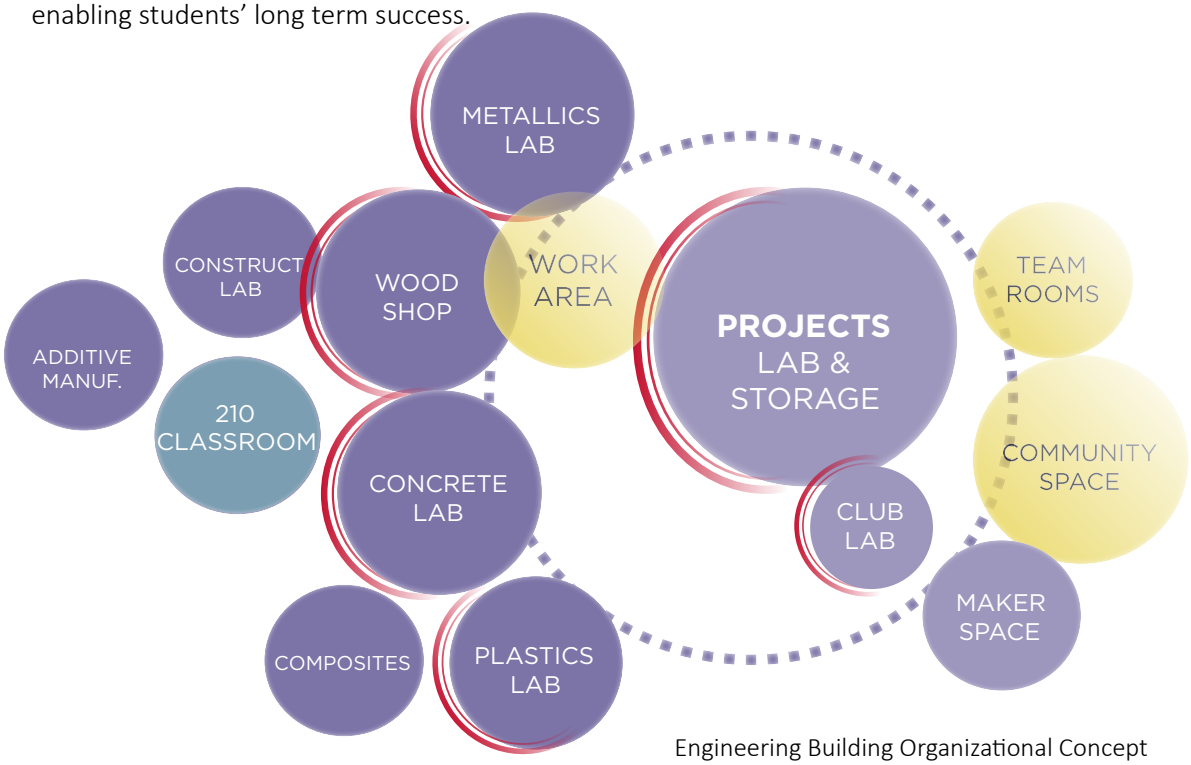
- Wood Shop, Metallics and Plastics are to be adjacent or proximate to each other
- Construction Lab is to be adjacent to Wood Shop
- Additive Manufacturing and Composites are to be proximate to Wood Shop, Metallics and Plastics
- Classroom Laboratory serves and is to be proximate to Wood Shop, Metallics and Plastics
- Work Area should be adjacent to Wood Shop, Metallics and Project Labs
- Project Labs are to be proximate to Wood Shop, Metallics and Plastics
- Project Labs and Project Storage are to be adjacent or proximate to each other
- Student Meeting Rooms (Team Rooms) are to be proximate to Project Labs, Wood Shop, Metallics and Plastics
- Club Lab should be proximate to Wood Shop, Metallics and Plastics
- Club Lab and Maker Space are to be proximate to the building entrance for outreach use
- Concrete Lab and Concrete Testing Lab are to be adjacent or proximate to each other

Other Considerations

- Metallics would prefer a raised loading dock for semi-truck direct access into the lab
- Industry Space and Wood Shop prefer to direct loading into the labs
- Freight elevator is to be easily accessed from Wood Shop, Metallics, Plastics, Project Labs and Work Area
- Concrete Lab and Concrete Testing Lab should have direct access to the exterior

Organizational Concept

Multiple organizational concepts for the Engineering Building were explored with the faculty, staff and administration. The diagram below shows the preferred concept which places students and their projects at its core, surrounded and supported by the labs and spaces that are most vital to enabling students' long term success.



Engineering Building Organizational Concept

2.5 TECHNICAL PROGRAM REQUIREMENTS

Laboratory Room Diagrams and Data Sheets
Detailed preliminary laboratory room diagrams and data sheets are included in the Appendix. These documents provide the detailed program requirements for each type of laboratory space within the Engineering Building project and help to validate the program size for each.

Building Systems Requirements
Building systems requirements are outlined in the description of major systems included in the Project Budget Analysis section of this report.

Circulation
Effective circulation will be an important element in the design of the Engineering Building. Beyond the human occupants of the building, materials will be delivered to the facility including wood, metals, plastics and other supplies, and equipment. In addition to material delivery, the debris and waste generated by laboratory functions must be safely removed on a periodic basis.

Internal building circulation should provide safe pedestrian egress from each individual laboratory and laboratory support space through an uncomplicated path of egress to the building exterior at grade. Features that should be considered in the design of the circulation system include:

- At least one door into each laboratory space should have a minimum 54" wide clear opening. This can be accomplished using openings with one 3'-0" active leaf and one 1'-6" inactive leaf.
- Equipment lists should be carefully reviewed to verify that individual pieces of equipment can be transported and maneuvered between spaces. Future equipment should be anticipated.
- Doorways accessing corridors should open into recessed alcoves serving the corridor. The doors should swing out from laboratories, in the direction of exit.
- Wherever possible, circulation and fume hood locations within laboratory spaces should be coordinated to preclude exiting in front of the fume hoods.
- Clear, unobstructed access to the freight elevator from all labs for movement of materials, equipment and student projects is critical to the functioning of the program.

Interaction
The program should include areas outside of laboratories that provide opportunities for students to study and interact with one another. The majority of EWU students are commuters, so it is vital that new facilities incorporate study spaces and lounge space as well as enhanced technologies to support virtual study.

The building should encourage interaction within each laboratory group, between students, researchers, and faculty, and with the larger campus. This requires that spaces that support interaction be created between laboratories, on each floor, and in public areas of building. Areas for formal and, in particular, informal interaction should be linked to the circulation schemes. Formal interaction spaces should include meeting rooms and lounge areas. Informal interaction spaces should include student study areas, casual meeting spaces for short duration interaction, display/announcement boards, and possibly outdoor gathering spaces.

Meeting rooms (programmed as "Team Rooms") should be incorporated throughout the building that facilitate groups of 4-6 students or groups of 12 for students plus faculty. These are the typical sizes of capstone project groups and engineering study groups.

Accessibility

The principles of universal design should be entirely incorporated to provide an accessible environment to all of its users throughout both the building and the site. Ramps and grading should allow easy access to the building from campus buildings and parking. All spaces within the building should incorporate the ADA guidelines to allow for an easily accessible environment for all of the building occupants. Early consideration should be given to the following accessibility aspects:

- Accessible work stations and fume hoods should be provided in the laboratories based on code requirements.
- Location of accessible work stations should be as close as possible to eyewashes and safety showers.
- An 18" clearance on the pull side and 12" clearance on the push side of doors opposite the hinged side is required.

Some guidelines for accessible work stations in laboratories include:

- Work surfaces 30"- 34" above floor with wheelchair clearance below. Adjustable work surfaces can provide a range of possible height adjustments.
- Laboratory service controls, equipment, and equipment controls within easy reach for persons with limited mobility. Controls should have single-action levers or blade handles for easy operation.
- Aisle widths and clearances adequate for maneuvers of wheelchair bound individuals. Aisles 5'-0" wide are recommended with turnaround areas.

Vibration Control

Some of the engineering equipment that will be used in the Engineering Building is sensitive to vibration, and some equipment creates excessive vibration. The building structure should be designed to moderate vibration to acceptable levels. Care should be taken to locate vibration creating engineering equipment where it has the least impact on other laboratories. Labs and support spaces will be designed to satisfy floor vibration criteria of VC-A (2,000 micro-in/sec. at 75 steps/min). This vibration criteria is appropriate for optical balances and microscopes up to 400x magnification, which are common in many labs. Classroom and office areas will be designed to meet the standard criteria of 0.5% g (g = force of gravity).

Air handling equipment and ductwork should be designed to minimize vibration. Supply and exhaust air fans, compressors, pumps and other noise and vibration producing equipment should be located in mechanical rooms with protective wall and floor construction. Equipment shall be isolated from supporting structure with resilient mounts. Vibration isolators should be selected based on floor stiffness, span extension, equipment power and operating speed.

Building Management Systems

The Engineering Building should be provided with a micro-processor based direct digital control building automation/energy management system. This system should provide environmental and energy management controls in all spaces and monitoring of the laboratory controls. All data from the energy management system should report into the existing campus energy management control system to allow for reporting of space and system status, reporting of alarms, scheduling of preventative maintenance functions, and trending of data for energy conservation purposes.

Monitoring of critical parameters of the ventilation system will be important for safe operation and effective maintenance and management of the building. Status of HVAC operations for laboratories, fume hoods, and other critical spaces, should be reported and alarmed when outside of established operational criteria.

Besides providing a high level of control and functionality in an integrated building control system, it is also desirable to have the capability of remote data reporting on consumption gas, potable domestic water, domestic hot water, low temperature heating water, chilled water, steam, building electrical service, 208V and 460V HVAC equipment (fans, pumps, and other equipment) electrical energy use, lighting electrical energy use, electric vehicle charging energy use, plug load energy use, and on-site renewable energy generation as required by the energy code and for use by the engineering courses.

Technology Infrastructure

Spaces in the new engineering building should be flexibly designed to support changing technologies and dynamic laboratory environments. Teaching laboratories should feature the latest technological tools to support teaching goals and engineering demonstrations. Technology infrastructure should be designed to meet the current needs of each lab space, while remaining flexible enough to accommodate future potential changes to lab equipment and lab functions. All labs are to have overhead services. Wireless Internet access should be provided throughout the building.

2.6 FUTURE REQUIREMENTS

Design to Adapt to Changes

Planning a building that can adapt to change is particularly important and challenging when designing engineering buildings because they both need to keep up with technological advancement in the field and are laden with significant scientific and safety equipment. The design of an engineering facility also commences so far in advance of actual construction that the design team must emphasize flexibility in all aspects of the project to accommodate potential pedagogical shifts. Measures to accommodate change may include:

- Planning the structural layout such that partitions can easily be deconstructed or relocated to create larger or smaller spaces as needed.
- Providing adequate floor to floor heights to accommodate future increases in ventilation requirements due to future unforeseen equipment needs.
- Avoiding the use of systems that are difficult to modify or work with.
- Selection of building systems that require little and easy maintenance and are easily accessible and adaptable.
- Selection of moveable furniture and equipment that can be easily stored.

3.0 ANALYSIS OF ALTERNATIVES

3.1 DESCRIPTIONS OF ALTERNATIVES

3.2 SUMMARY OF ALTERNATIVES

3.3 LIFE CYCLE COST OF ALTERNATIVES

3.1 DESCRIPTIONS OF ALTERNATIVES

Alternative I: Preferred Alternate - New Engineering Building on the Existing Campus
Satisfaction of the program requirements can readily be achieved through construction of a new building on the Cheney campus providing the contemporary, pedagogically appropriate facilities needed to flexibly serve multiple hands-on degree programs including the existing MENT and prospective CE programs. It will improve the quality and safety of laboratories, increase faculty research opportunities, support community and prospective student outreach activities, and encourage student engagement with each other and the regional engineering industry.

The new structure will be designed to provide desired health, safety and functionality without compromise. The new building will connect to CEB, taking advantage of CEB's strengths, creating efficiencies such as shared departmental and instructional resources, direct access to faculty and administrative offices, and shared student amenities. The building will be a student centered environment that provides a high quality engineering teaching and research environment that is responsive to the needs of engineering education and the engineering industry.

Alternative II: Renovation of Existing Engineering Facilities
An alternative for addressing the deficiencies of the existing facilities would be a major renovation of CEB and Cheney Hall. The alternative falls short in serious ways: it is not only similar in cost to a new building, it results in substandard teaching and research laboratories and continued operational and systems inefficiencies, and it eliminates eight good quality, general use classrooms and two computer labs. Additional costs would be incurred to relocate the entire Engineering Department and others from both buildings during construction.

CEB was completed in 2005, is currently in good condition for its primary purpose as a classroom, computer lab and office building. However, the existing structure and systems of CEB are not compatible with the needs of engineering education. The ventilation demands and laboratory support systems in a engineering facility require above-average floor-to-floor heights that allow clear ceiling space for large duct work and laboratory plumbing and electrical systems. The existing CEB mechanical, engineering and plumbing systems are suited only for office, classroom and computer lab space. They are not adequate for engineering and cannot be made so without substantial demolition and reconstruction of the superstructure. Resulting labs would still be substandard in size and quality due to restricted dimensions and existing low ceiling heights.

Cheney Hall was completed in 1966 and many of the components are approaching end of expected life cycles. It currently houses a portion of the athletics department and swing space for the sciences. Both buildings do not meet current ADA, structural and energy codes.

Alternative III: No Action
The consequences of taking no action would be a negative impact on EWU students, the engineering programs, the University, the region, and the State. No action would maintain substandard, pedagogically inappropriate facilities and makes it impossible for EWU to offer new, high-demand STEM degree programs such as civil engineering. Student success in EWU's engineering programs could not be ensured. The result would be that EWU would not be able to produce more graduates in high demand engineering professions and this would undermine the policies of the Washington Student Achievement Council and the Office of Financial Management.

Additionally, the current Engineering Building would continue to have significant deficiencies in building systems, technology, student spaces and general quality. The current facilities would also continue to experience high maintenance and repair costs, which if deferred will result in facilities that are not capable of supporting even the current student load.

3.2 SUMMARY OF ALTERNATIVES

The following table compares the alternatives:

	Alternative I: ***Preferred Alternate*** New Engineering Building on the Existing Campus	**Alternative II:** Renovation of Existing Engineering Facilities	**Alternative III:** No Action
Description	Design and construction of a new engineering building and targeted renovation of existing space in CEB and Cheney Hall to provide contemporary, pedagogically appropriate facilities.	Major renovation to existing facilities, including both CEB and Cheney Hall to provide contemporary, pedagogically appropriate facilities for the engineering programs where suitable.	No action taken.
Advantages	- Provides sufficient high quality teaching laboratories to flexibly serve multiple degree programs over time. - Provides state-of-the-art engineering research facilities for faculty and industry collaboration - Direct connection to CEB takes advantage of CEB's strengths, creating efficiencies such as shared instructional resources, direct access to faculty and administrative offices, and shared student amenities.	- Reuses some of the existing infrastructure. - Cheney Hall is due for some systems and finishes upgrades. - No demolition of Cadet Hall or relocation of its program elsewhere on campus.	- No demolition of Cadet Hall or relocation of its program elsewhere on campus.
Disadvantages	- Demolition of Cadet Hall and relocation of its program elsewhere on campus.	- Majority of CEB's facilities are in good condition for their intended use as classrooms and offices. - Upgrading mechanical systems for lab use requires substantial demolition and reconstruction. - 8 good quality general use classrooms and 2 good quality computer labs in CEB would be eliminated. - Resulting labs would still be substandard in size and quality due to restricted dimensions and existing low ceiling heights. - Additional costs will be incurred to relocate occupants during construction.	- EWU's engineering programs would maintain substandard, pedagogically inappropriate facilities. - EWU will not be able to offer new, high-demand STEM degree programs such as civil engineering. - Student success in EWU's undergraduate engineering programs is not ensured. - EWU would not be able to produce more graduates in high demand engineering professions undermining the policies of the Washington Student Achievement Council and the Office of Financial Management.
Project Costs	$127,985,272	$127,403,050	$0
Construction Schedule	Start: July 2027 Midpoint: November 2028 Completion: February 2030	Start: July 2027 Midpoint: December 2028 Completion: April 2030	No Construction

3.3 LIFE CYCLE COST MODELS OF ALTERNATIVES

Project and Existing Facility Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Agency**	Eastern Washington University
*	**Project Title**	Engineering Building
*	**Date of Analysis:**	**7/1/2024**
	Analysis Period	
*	Years of Analysis (If not 30 or 50)	

Existing Facility Description	The existing Computing and Engineering Building (CEB) includes sub-standard facilities for mechanical engineering and makes it impossible for EWU to offer new, high-demand STEM degree programs such as civil engineering.

	Existing Lease Information	**Lease 1**	**Lease 2**	**Lease 3**	**Lease 4**	**Lease 5**	**Lease 6**	**Total**
	Existing Square Feet							-
	Lease Start Date / Last Lease Increase							
	Lease End Date							
	Lease Rate per Month							$ -
	Lease Rate per SF per Year at End Date							
	Additional Operating Costs per Month	$ -						$ -
	Total Lease Costs per Month							$ -
*	Persons Relocating							-
	SF per Person Calculated							
	Estimated Lease Renewal Rate - 5 Year							$ -

Life Cycle Cost Analysis - Project Summary

Agency	Eastern Washington University
Project Title	Engineering Building
Existing Description	The existing Computing and Engineering Building (CEB) includes sub-standard facilities for mechanical engineering and makes it impossible for EWU to offer new, high-demand STEM degree programs such as civil engineering.
Lease Option 1 Description	#REF!
Lease Option 2 Description	#REF!
Ownership Option 1 Description	Alternative I (Preferred Option): New Engineering Building connected to the existing Computing and Engineering Building (CEB). Includes 82,522 gsf of new addition and 42,411 gsf of renovation across two existing buildings - CEB and Cheney Hall.
Ownership Option 2 Description	Alternative II: Full renovation across two existing facilities - includes Computing and Engineering Building (CEB) and Cheney Hall.
Ownership Option 3 Description	Alternative III: No Action

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	#REF!	#REF!
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	$ -	$ -
Occupancy Date	n/a	#REF!	#REF!
Project Initial Costs	n/a		
Persons Relocating	-	#REF!	#REF!
RSF/Person Calculated		#REF!	#REF!

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	124,933	125,669	-
Total Rentable Square Feet	79,629	100,535	-
Occupancy Date	4/1/2030	6/1/2030	
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 1,216	$ 1,183	#REF!
RSF/Person Calculated	-	#REF!	#REF!

Ownership Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Alternative I (Preferred Option): New Engineering Building connected to the existing Computing and Engineering Building (CEB). Includes 82,522 gsf of new addition and 42,411 gsf of renovation across two existing buildings - CEB and Cheney Hall.
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	124,933
*	Usable Sq Ft	79,629
	Space Efficiency	64%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$744.09
	Estimated Total Project Costs per Sq Ft	$1,034.44
	Escalated MACC Cost per Sq Ft	$874.69
	Escalated Total Project Costs per Sq Ft	$1,216.00

*	**Move In Date**	4/1/2030

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	**Estimated Costs**	**Cost to Use**
	Acquisition Costs Total	$ -	$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.26% Std	5.26%
	Pre-Schematic Design services			
	Construction Documents	$ 4,447,218		
	Extra Services	$ 2,369,441		
	Other Services	$ 2,270,317		
	Design Services Contingency	$ 482,408		
	Consultant Services Total	$ 9,569,384	$ 6,814,954	$ 9,569,384
MACC	**Construction Contracts**			
	Site Work	$ 4,965,332		
	Related Project Costs	$ 2,348,869		
	Facility Construction	$ 85,647,039		
	MACC SubTotal	$ 92,961,240	$ 45,210,754	$ 92,961,240
	Construction Contingency (5% default)	$ 5,240,898	$ 4,648,062	$ 5,240,898
	Non Taxable Items			$ -
	Sales Tax	$ 8,740,057	#REF!	$ 8,740,057
	Construction Additional Items Total	$ 13,980,955	#REF!	$ 13,980,955
	Equipment			
	Equipment	$ 5,880,300		
	Non Taxable Items	$ -		
	Sales Tax	$ 523,347		
	Equipment Total	$ 6,403,647		$ 6,403,647
	Art Work Total	$ 636,743	$ 464,806	$ 636,743
	Other Costs			
	Other Costs Total	$ -		$ -
	Project Management Total	$ 4,433,304		$ 4,433,304
	Grand Total Project Cost	**$ 127,985,273**	**#REF!**	**$ 129,235,273**

Ownership Option 1 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies		$ -	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2030	Estimated Cost /GSF/ 2030	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ -	$ 1.24	$ 155,399	$ 12,950
☑	Janitorial Services	$ -	$ 1.82	$ 227,818	$ 18,985
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 0.47	$ 58,840	$ 4,903
☑	Grounds	$ -	$ 0.07	$ 9,052	$ 754
☑	Pest Control	$ -	$ 0.12	$ 15,087	$ 1,257
☑	Security	$ -	$ 0.12	$ 15,087	$ 1,257
☑	Maintenance and Repair	$ -	$ 7.16	$ 894,677	$ 74,556
☑	Management	$ -	$ 1.07	$ 134,277	$ 11,190
☑	Road Clearance	$ -	$ 0.17	$ 21,122	$ 1,760
☑	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ 12.26**	**$ 1,531,361**	**$ 127,613**

Ownership Option 2 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Alternative II: Full renovation across two existing facilities - includes Computing and Engineering Building (CEB) and Cheney Hall.
*	**Construction or Purchase/Remodel**	Purchase/Remodel
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	125,669
*	Usable Sq Ft	100,535
	Space Efficiency	80%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$694.65
	Estimated Total Project Costs per Sq Ft	$1,006.72
	Escalated MACC Cost per Sq Ft	$816.57
	Escalated Total Project Costs per Sq Ft	$1,183.41

*	**Move In Date**	6/1/2030

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	**Estimated Costs**	**Cost to Use**
	Acquisition Costs Total		$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
A & E	A & E Fee Percentage (if services not specified)	69.00%	7.33% Std	69.00%
A & E	Pre-Schematic Design services	$ -		
A & E	Construction Documents	$ 6,181,053		
A & E	Extra Services	$ 2,024,070		
A & E	Other Services	$ 3,121,785		
A & E	Design Services Contingency	$ 1,202,627		
A & E	**Consultant Services Total**	$ 12,529,535	$ 6,399,592	$ 12,529,535
	Construction Contracts			
MACC	Site Work	$ 729,859		
MACC	Related Project Costs			
MACC	Facility Construction	$ 86,565,520		
MACC	**MACC SubTotal**	$ 87,295,379	$ 45,477,098	$ 87,295,379
	Construction Contingency (5% default)	$ 8,733,003	$ 8,733,003	$ 8,733,003
	Non Taxable Items			$ -
	Sales Tax	$ 8,546,588	#REF!	$ 8,546,588
	Construction Additional Items Total	$ 17,279,591	$ 17,279,591	$ 17,279,591
	Equipment			
	Equipment	$ 2,600,000		
	Non Taxable Items			
	Sales Tax	$ 421,861		
	Equipment Total	$ 3,021,861		$ 3,021,861
	Art Work Total	$ 633,846	$ 436,477	$ 633,846
	Other Costs			
	Other Costs Total	$ -		$ -
	Project Management Total	$ 4,502,828		$ 4,502,828
	Grand Total Project Cost		**$ 70,842,757**	**$ 126,513,040**

Ownership Option 2 Information Sheet

*	*Requires a user input*	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies		$ -	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2030	Estimated Cost /GSF/ 2030	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ -	$ 1.24	$ 156,315	$ 13,026
☑	**Janitorial Services**	$ -	$ 1.82	$ 229,160	$ 19,097
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 0.47	$ 59,187	$ 4,932
☑	**Grounds**	$ -	$ 0.07	$ 9,106	$ 759
☑	**Pest Control**	$ -	$ 0.12	$ 15,176	$ 1,265
☑	**Security**	$ -	$ 0.12	$ 15,176	$ 1,265
☑	**Maintenance and Repair**	$ -	$ 7.16	$ 899,948	$ 74,996
☑	**Management**	$ -	$ 1.07	$ 135,068	$ 11,256
☑	**Road Clearance**	$ -	$ 0.17	$ 21,247	$ 1,771
☑	**Telecom**	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ 12.26**	**$ 1,540,383**	**$ 128,365**

Ownership Option 3 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Alternative III: No Action
*	**Construction or Purchase/Remodel**	
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	-
*	Usable Sq Ft	-
	Space Efficiency	
	Estimated Acres Needed	-
	MACC Cost per Sq Ft	$0.00
	Estimated Total Project Costs per Sq Ft	#REF!
	Escalated MACC Cost per Sq Ft	$0.00
	Escalated Total Project Costs per Sq Ft	#REF!

*	**Move In Date**	

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	**Estimated Costs**	**Cost to Use**
	Acquisition Costs Total	$ -	$ -	$ -
A & E	**Consultant Services**			
A & E	A & E Fee Percentage (if services not specified)	0.00%	12.5% Std	12.50%
A & E	Pre-Schematic Design services	$ -		
A & E	Construction Documents			
A & E	Extra Services			
A & E	Other Services			
A & E	Design Services Contingency			
A & E	**Consultant Services Total**	$ -	$ -	$ -
MACC	**Construction Contracts**			
MACC	Site Work			
MACC	Related Project Costs			
MACC	Facility Construction			
MACC	**MACC SubTotal**	$ -	$ -	$ -
	Construction Contingency (5% default)		$ -	$ -
	Non Taxable Items			$ -
	Sales Tax		#REF!	#REF!
	Construction Additional Items Total	$ -	#REF!	#REF!
	Equipment			
	Equipment			
	Non Taxable Items			
	Sales Tax			
	Equipment Total	$ -		$ -
	Art Work Total		$ -	$ -
	Other Costs			
	Other Costs Total	$ -		$ -
	Project Management Total			$ -
	Grand Total Project Cost		**#REF!**	**#REF!**

Ownership Option 3 Information Sheet

*	*Requires a user input*	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies			*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ Year	Estimated Cost /GSF/ Year	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ -	$ -	$ -	$ -
☑	**Janitorial Services**	$ -	$ -	$ -	$ -
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ -	$ -	$ -
☑	**Grounds**	$ -	$ -	$ -	$ -
☑	**Pest Control**	$ -	$ -	$ -	$ -
☑	**Security**	$ -	$ -	$ -	$ -
☑	**Maintenance and Repair**	$ -	$ -	$ -	$ -
☑	**Management**	$ -	$ -	$ -	$ -
☑	**Road Clearance**	$ -	$ -	$ -	$ -
☑	**Telecom**	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ -**	**$ -**	**$ -**

Financial Assumptions

Date of Life Cycle Cost Analysis:	7/1/2024
Analysis Period Start Date	#REF!
User Input Years of Analysis	0

All assumptions subject to change to reflect updated costs and conditions.

	Lease Options			Ownership Option 1		
	Existing Lease	**Lease Option 1**	**Lease Option 2**	**GO Bond**	**COP**	**63-20**
Inflation / Interest Rate	2.732%	2.732%	2.732%	3.420%	3.570%	3.670%
Discount Rate	0.816%	0.816%	0.816%	0.816%	0.816%	0.816%
Length of Financing	N/A	N/A	N/A	25	25	25

Ownership Option 2			Ownership Option 3		
GO Bond	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**
3.420%	3.570%	3.670%	#REF!	#REF!	#REF!
0.816%	0.816%	0.816%	0.816%	0.816%	0.816%
25	25	25	25	#REF!	#REF!

See Financial Assumptions tab for more detailed information

COP Deferred and 63-20 Financing defer the payment on principle until construction completion.

New Lease Assumptions

Real Estate Transaction fees are 2.5% of the lease for the first 5 years and 1.25% for each year thereafter in the initial term of the lease.

Tenant Improvements are typically estimated at $19 per rentable square foot.

IT infrastructure is typically estimated at $1500 per person.

Furniture costs are typically estimated at $7000 per person and do not include new workstations.

Moving Vendor and Supplies are typically estimated at $300 per person.

Default Ownership Options Assumptions

Assumes a 2 month lease to move-in overlap period for outfitting building and relocation.

Assumes surface parking.

The floor plate of the construction option office building is 25,000 gross square feet.

The estimated total project cost for construction is $506.63 per square foot.

See the Capital Construction Defaults tab for more construction assumptions.

4.0 SITE ANALYSIS

4.1 SITE OPTIONS

4.2 CAMPUS RELATIONS

4.3 SITE EVALUATION - PHYSICAL ISSUES

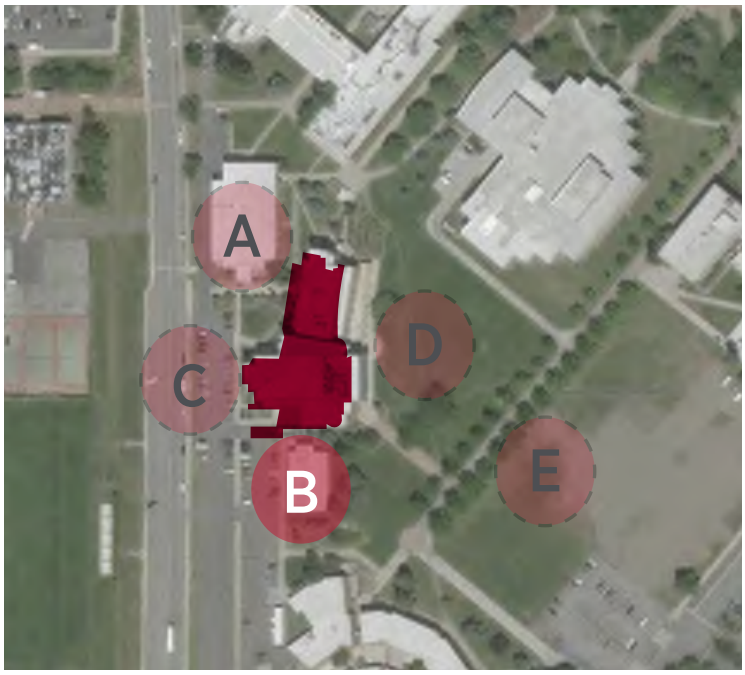
4.4 SITE EVALUATION - REGULATORY ISSUES

4.5 SITE EVALUATION - ACCESS ISSUES

4.6 SITE SELECTION

4.1 SITE OPTIONS

Five candidate sites on the Cheney campus were initially identified to determine a preferred site for the Engineering Building. The predesign process highlighted that locating the Engineering Building immediately adjacent to CEB for the purposes of sharing resources and encouraging interaction between engineering disciplines was very important. This intention remained intact through studies of several options for the location of the Engineering Building. Ultimately, three sites adjacent to CEB were selected as alternatives worth studying for the Engineering Building.



- Site A: Cheney Hall
- Site B: Cadet Hall
- Site C: Parking Lot 3
- Site D: Engineering Hall
- Site E: Reid Hall

Evaluation of all the sites included consideration of numerous issues and those are illustrated in the table on the next page. Key factors in the site selection were appropriate area available, proximity and possible connections to the existing CEB, increasing proximity to Washington Street for greater visibility to industry and community, connections to campus pedestrian and ADA circulation, and disruption to existing buildings and landscape. Topography, solar orientation, access to utilities, service access, disruption to existing parking and future campus expansion were also considered.

See 3.6 in this section for more detail on the three sites which were chosen for further study. Site A: Cheney Hall and Site C: Parking Lot 3 were studied because of their favorable campus locations and high criteria score. These sites were not chosen because their potential connections to CEB were less favorable. Cheney Hall would be challenging to demolish as it would interrupt other University programs which also share space in the building and because of possible future uses, such as swing space for other University facilities projects.

The predesign study concluded that Site B: Cadet Hall, which is located immediately south of the existing CEB and east of Washington Street, is the most appropriate site for the new engineering building. It best meets the criteria and responds to EWU's 2014 Master Plan Goals of connecting to the larger community and enhancing open space. It has the most favorable adjacency to CEB and its location allows for new "front doors" for Engineering on Washington Street and the Engineering Lawn. This site is located within the boundaries of the Eastern Washington University's Cheney campus and is owned by the State of Washington. The site contains adequate available area that a building on the site will comply with all easement and setback requirements set forth by the University.

Rating:
'3' = Significant Advantage
'0' = Significant Disadvantage
Weighing Factor:
'5' = Most Important
'1' = Least important

		Site Options									
		A		B		C		D		E	
		Cheney Hall		Cadet Hall		Parking Lot 3		Engineering Lawn		Reid Hall	
Evaluation Criteria	Weight Factor	Rating	Weight Value	Rating	Weight Value	Rating	Weight Value	Rating	Weight Value	Rating	Weight Value
Appropriate available area	5	2	10	2	10	3	15	3	15	3	15
Proximity to CEB	5	3	15	3	15	3	15	3	15	0	0
Increase engineering presence, new 'front door'	5	3	15	3	15	2	10	1	5	0	0
Increase visibility with industry and community	5	3	15	3	15	3	15	0	0	0	0
Connection to campus circulation	5	3	15	2	10	2	10	3	15	1	5
Ease of service access	4	2	8	3	12	3	12	1	4	2	8
Favorable site topography	3	3	9	3	9	3	9	1	3	3	9
Favorable solar orientation	3	1	3	1	3	3	9	2	6	3	9
Located within academic core	3	3	9	3	9	2	6	3	9	1	3
Connection to future development	2	3	6	3	6	1	2	3	6	2	4
Impact of disruption to existing building(s)	2	0	0	2	4	3	6	3	6	3	6
Utilities availability/rerouting	2	3	6	3	6	3	6	2	4	2	4
Allows future engineering growth	2	0	0	2	4	1	2	1	2	3	6
Disruption to existing parking	1	2	2	0	0	0	0	3	3	3	3
Total			88		93		87		63		57

Please note that the scores under “Impact of Disruption to Existing Buildings” represents the relative disruption at a University level: disruption of Site A Cheney Hall will have far more impact at a University level than disruption of Sites B-E.

Cheney Hall (~30,000gsf) currently contains program for multiple departments, making the functions more difficult to replace. In the short and long term it is also considered good swing space, especially for the sciences given its existing lab amenities. Cadet Hall (~10,000gsf) currently contains non-technical program that could be housed in a variety of spaces on campus. See 4.3 in this section for further description of Cadet Hall.

4.2 CAMPUS RELATIONS

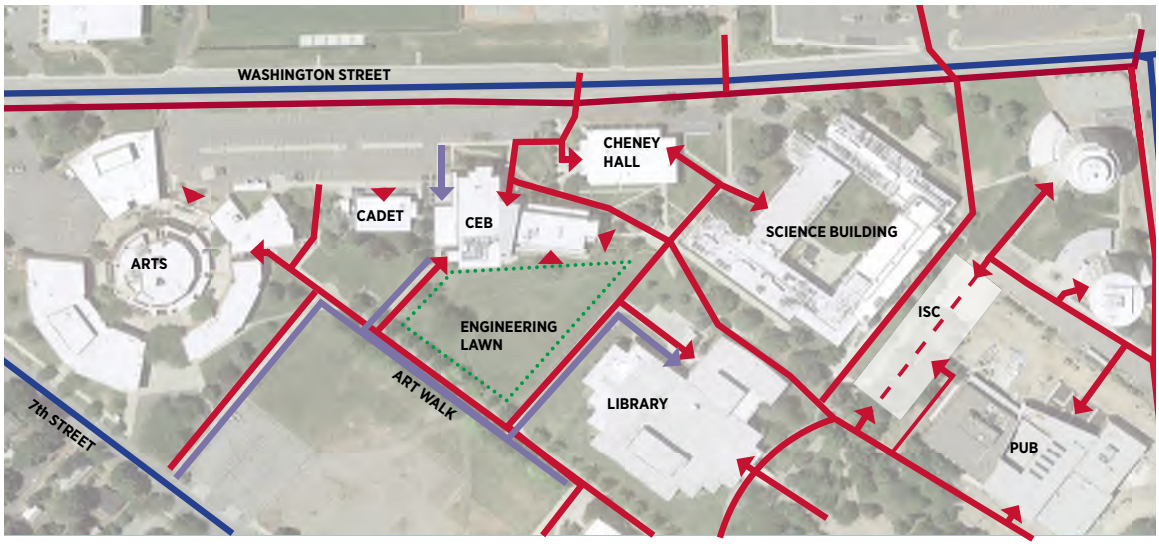
Campus Organization

EWU's Cheney campus is currently organized around two major pedestrian circulation routes, the "Art Walk" and the "Campus Mall", and 2 major open spaces, the Campus Quad and the Engineering Lawn. The site options B, D and E are located adjacent to the main circulation route "Art Walk". The informal open lawn area adjacent to the Art Walk has been identified as the "Engineering Lawn".

Campus Circulation and Open space

The major open spaces on campus each have a unique character that is beneficial for a diversity of uses. The Engineering Lawn area represents the largest open lawn area on the campus and is used by students for informal activities such as playing frisbee, however, the space lacks definition at the edges and is not fully integrated into campus life because of the lack of destinations around it. The major open spaces are supplemented by a large number of smaller open spaces, giving the campus a park-like feel.

The major campus circulation routes are supplemented by minor routes that link into the surrounding city grid. Building entries are generally grouped around open spaces and major pedestrian routes. There are no primary building entries to CEB currently fronting on the Engineering Lawn open space. Secondary entrances to CEB front the engineering lawn or the Science Building and are often used by students more than the primary CEB entrance which faces Washington Street.

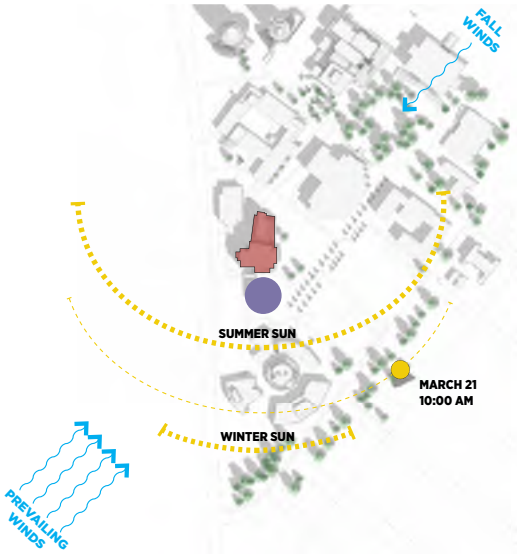


Campus Circulation Diagram

4.3 SITE EVALUATION - PHYSICAL ISSUES

Climate/ Solar Orientation

The preferred site for the Engineering Building site will require access to daylight. To optimize solar exposure and reduce unwanted glare and heat-gain, the ideal site orientation for a building in this climate will require the building to be oriented in an east-west manner. The building will be designed to allow daylight to penetrate into the building for access to the public spaces and common areas, while the light in the labs will be controlled. Building fenestration will be designed with consideration to the overall site and building orientation. Any future nearby development should be kept to three stories to maintain solar access for the Engineering Building.



Preferred Engineering Building Site Solar and Wind Orientation

Water Rights & Availability

Eastern Washington University (EWU) provides drinking water from two drilled wells, both of which draw from a groundwater aquifer. Well 1R is located in the Plant Utilities building and can pump up to 450 gallons per minute at a depth of 834 feet. Well 2R produces 900 gallons per minute at a depth of 1145 feet. Chlorination of the campus water supply began in 2010. Since 2016, water from both wells has been routed through a new chlorine building for treatment before being distributed throughout campus via the tower. To ensure the safety of the tap water, backflow assemblies are installed through the campus to protect the water system. Two Cross Connection Control Specialists and three Backflow Assembly Testers, employed by the university, conduct tests on all assemblies annually and perform any necessary repairs or replacements.

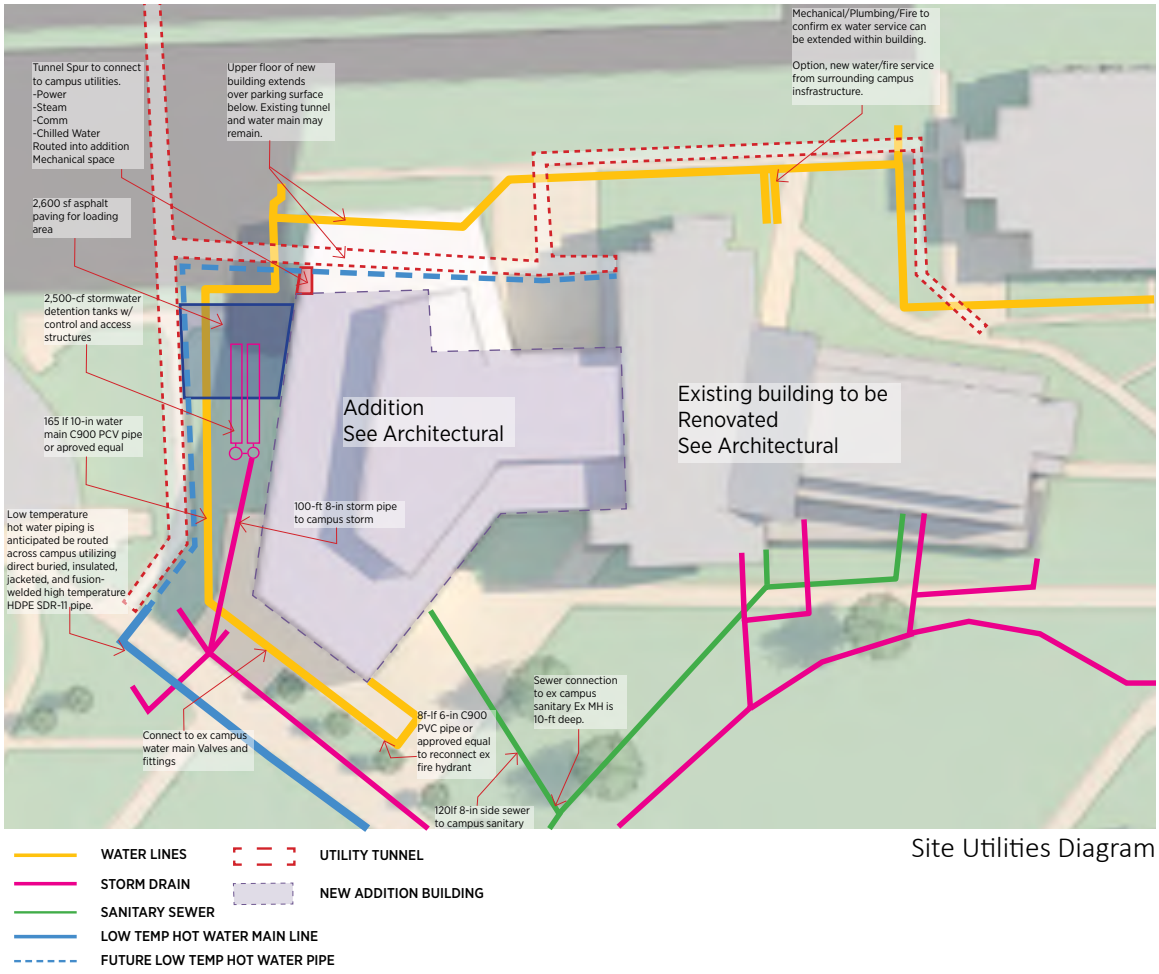
A report is submitted to the Department of Health each year. EWU's water meets or exceeds all standards set for quality and safety and is committed to providing safe, high-quality water. EWU's annual drinking water report can be found at https://inside.ewu.edu/facilities/water/.

Stormwater Requirements

The University's stormwater system drains to the City of Cheney's street storm system, and this new engineering building will conform to the City's development manual which specifies stormwater design standards. Stormwater that runs off the vehicular service drives will be treated by a biofiltration swale system adjacent to the drive that will feed into a detention system.

Geotechnical and Environmental Conditions

Historical geotechnical reports for CEB and the JFK Library were reviewed in order to gain a



Site Utilities Diagram

preliminary understanding of subsurface conditions in the area of campus near the candidate sites. Those geotechnical reports show that subgrade soils are generally comprised of soft to medium stiff clayey soils underlain by basalt bedrock. Pilings or geopiers supported on the basalt bedrock are generally recommended for foundations. Perched groundwater is found at various depths, sometimes near the surface, and will likely require a building to be equipped with sub-floor and perimeter drainage with collected water pumped to a disposal system or to a cistern for reuse in landscape irrigation. Since a preliminary geotechnical report on the site is beyond the reach of this predesign study, it is not possible to conclude that any of the alternatives would provide superior foundation and/or drainage conditions.

Utility Extension

The campus tunnel system runs beneath the preferred site and currently provides direct access to steam, chilled water, telecommunications and electricity to the project. Water, sanitary sewer, storm drainage, and natural gas are separate, direct-buried utilities and are accessible to all sites. Low temperature heating water will be generated by a new open-source ground coupled heat pump heating plant. The plant is being planned as a separate project. Low temperature hot water piping is anticipated be routed across campus utilizing direct buried, insulated, jacketed, and fusion-welded high temperature HDPE SDR-11 pipe.

Energy Conservation

Factors that may affect energy conservation in any of the site alternatives are:

- Solar orientation, both for daylighting of interior spaces and laboratories
- Adjacency to the campus tunnel system, which would allow the use of centrally generated

steam, chilled water, and direct buried low temperature heating water
- Consolidation of energy intensive lab/shop spaces into the new addition, whose processes require large amounts of fresh air and exhaust, will allow for sustainable, energy efficient solutions that cannot be accommodated within the existing facilities due to practical spatial restraints

Hazardous Materials Inventory
Cadet Hall will be evaluated for hazardous materials and all abatement completed prior to the start of any demolition work.

Buildings Affected by Work
The demolition of Cadet Hall (~10,000gsf) and related site work is also included in the project scope. Built in 1955, Cadet Hall has major infrastructure issues and, if retained, a major upgrade to this building infrastructure will be needed in the future. The building is one of the smaller buildings on campus and the building's size and current organization does not allow for other University uses in the long term. The Cadet Hall site is an excellent location on campus for campus growth.

The ROTC program currently occupies Cadet Hall. EWU's Facilities and Planning feels that it is more advantageous to move the ROTC program to a new location and keep the Engineering Building in close proximity to CEB. EWU Administration has been advised that the Cadet Hall site is a high priority location and relocation of the ROTC program has not currently been a concern given that there are adequate or better spaces to house them on campus. The functions of Cadet Hall could relocate to Cheney Hall in either the short or the long term. Cheney Hall will have immediate vacancies due to the current use as science swing space. Relocation of the existing ROTC program will be carefully managed by the university.

4.4 SITE EVALUATION - REGULATORY & NEIGHBORHOOD ISSUES

Property Setback Requirements
The project site is situated within the existing campus and faces Washington Street to the east. Washington Street is classified by WSDOT as a Major Collector. The project will adhere to the setbacks specified by the City of Cheney and the building separation requirements of the current building code.

Neighborhood
No potential issues with the surrounding neighborhood during construction or ongoing are expected or have been identified.

Zoning and Local Requirements
Zoning and local land use regulations are not expected to significantly affect the preferred site. The City of Cheney designates the campus of Eastern Washington University as a unique zone called "P" (Public). The Cheney Zoning Code has no specific restrictions on the use of property within a P zone.

Environmental Impacts
All sites are compatible with SEPA and LEED® requirements. There are no known environmentally sensitive conditions. Wetlands, shorelines, flood zones, endangered species, and contaminated soils are not present at the site.

Building Code Requirements
The International Building Code as amended by the State of Washington has been adopted by the

City of Cheney and will govern the design and construction of the Engineering Building. Building code requirements are not expected to rule out or have a profound impact on the use of any proposed alternatives.

Other Regulatory Requirements
No other regulatory requirements are expected or have been identified.

4.5 SITE EVALUATION - PARKING & ACCESS ISSUES

Parking
No parking issues are expected or have been identified. Parking at EWU is provided on a campus wide basis, with assigned surface parking lots and on-street parking. Parking is not specifically provided for individual buildings. The Parking Lot 3 area adjacent to CEB will be effected by all options and the loss of parking stalls will be replaced with an increase of parking in the lot just off 7th Street. Accessible parking will need to be added adjacent to the building in all site options.

Construction Lay-Down
No potential impact on surroundings and existing development with construction lay-down areas and construction phasing is expected or has been identified.

Pedestrian Access
Pedestrian circulation should be concentrated around the Engineering Lawn and on the Art Walk to stay within and complement existing campus organization. Pedestrian access between CEB and the Engineering Building will be at the Engineering lawn as well as a connected internal corridor.

Service Access
Service access to the site can be provided via the west of the building via Washington Street for Option A. Service access can be provided via the Art Walk for Option C and Option D. Service access to the site can be provided via both Washington Street and The Art Walk for Option B, the preferred alternative. Both routes are currently used to service other buildings on the campus. If access is provided via the Art Walk, the conflict between pedestrian circulation and service vehicles will be increased, however, the University feels this is manageable.

ADA Access
Primary circulation routes around the Art Walk and Engineering Lawn are generally accessible due to the relatively flat topography. The primary exception to this occurs along the area to either side of CEB and around Cadet Hall. All the schemes bridge this section of topography and provide public entries at both an upper level and a ground floor level which facilitates wheelchair access to either elevation.

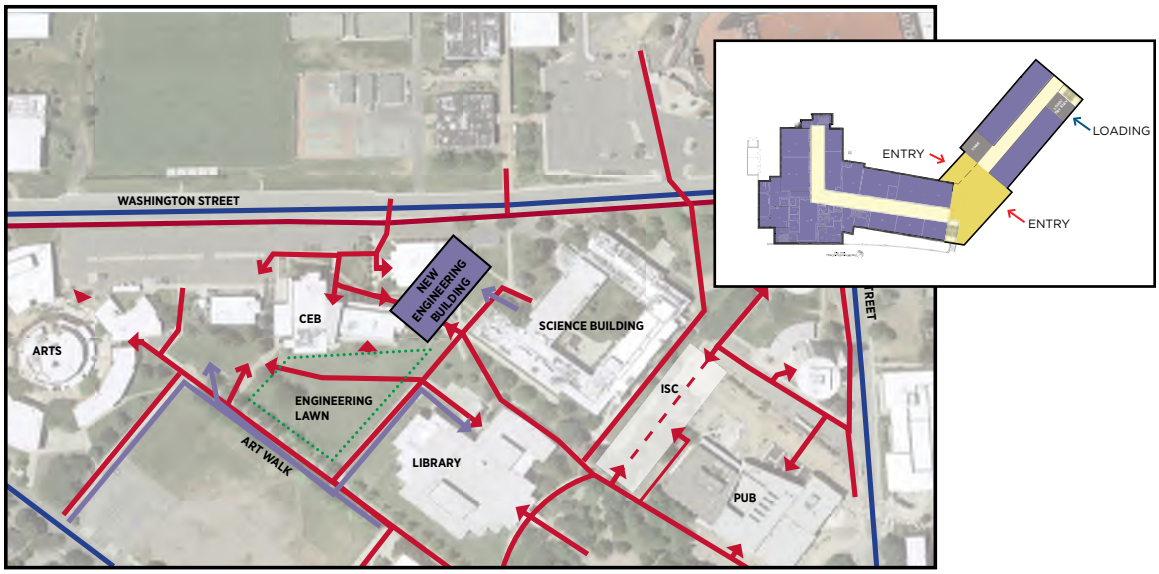
4.6 SITE SELECTION

Multiple potential site alternatives were studied for the location and layout of the Engineering Building. Based on a determination and evaluation of site selection criteria noted previously in this section, Sites A, B and C were selected to study in further detail. Each option evaluated the relationships of the building to the campus and to CEB. Key site relationships studied include:

- Proximity to CEB for pedestrian access and shared resources
- Proximity to Washington Street for greater visibility to industry and community
- Activation of the Engineering Lawn through proximity to CEB and the JFK Library
- Convenient service access for loading
- Future campus expansion
- Solar Orientation

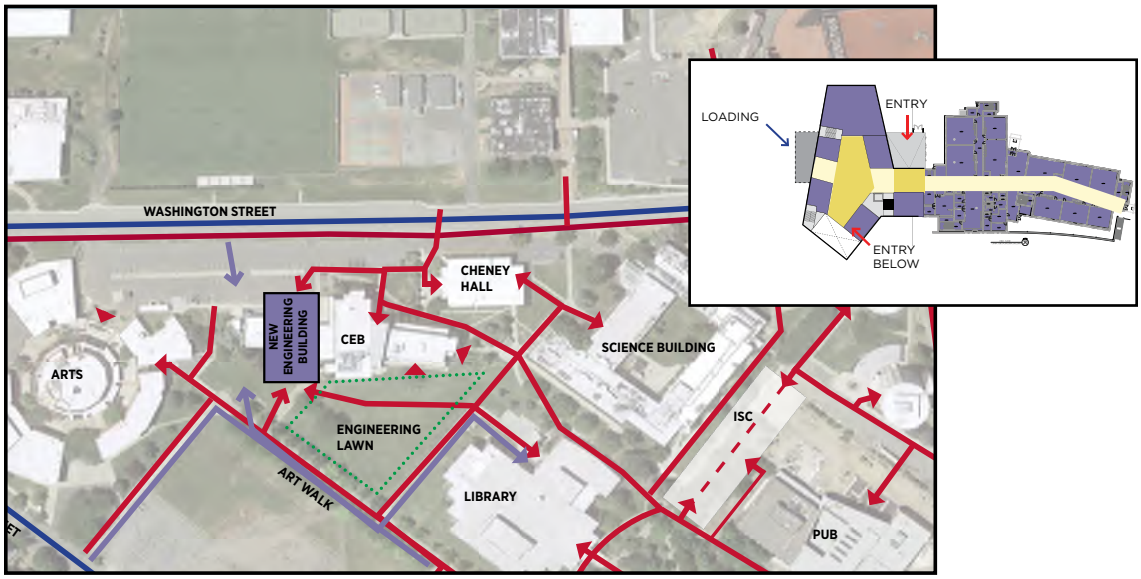
Site A: Cheney Hall Replacement

This alternative replaces Cheney Hall and provides a direct connection to CEB along the northern stair tower and ties into the existing circulation pattern on campus. The north entrance of CEB, although not designed as the main entrance, is often used by students entering the building. This scheme would create a more successful entrance to CEB and combine it with the new entrance of the new building. It allows for loading to be shared with the Science Building. The basement of CEB could be utilized for mechanical space to limit the amount of square footage required in the



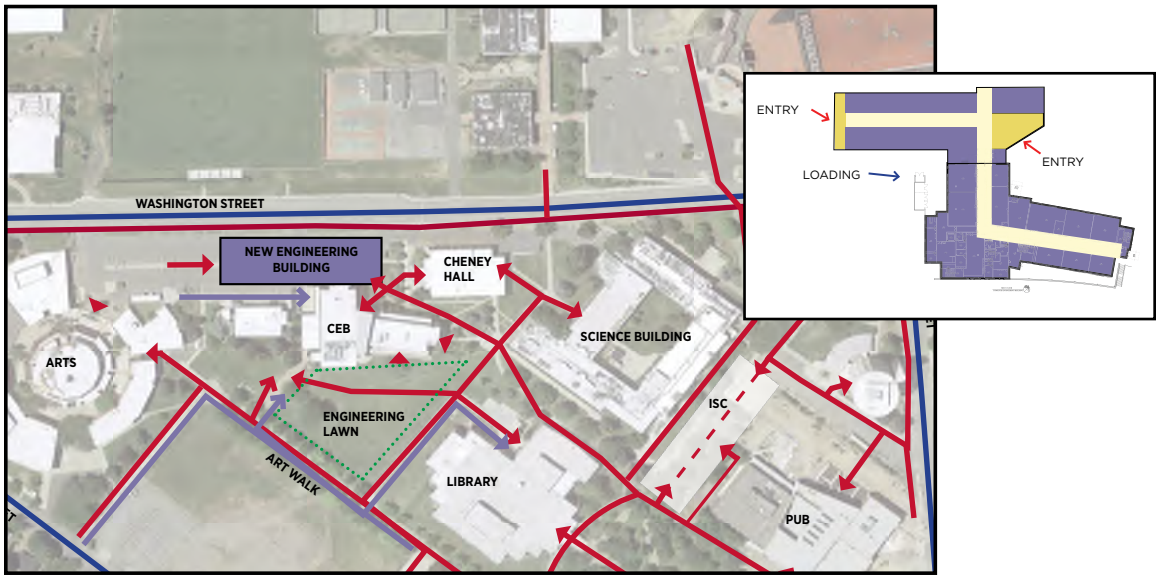
Site B: Cadet Hall Replacement - Preferred Alternative

This scheme replaces Cadet Hall. It has both loading and entrances located towards campus at the ground level and towards Washington Street at level one. It creates two front doors and a presence to Washington street and to campus and the Art Walk. It is connected to CEB via the north/south corridor . The student entrance is facing the Art Walk and engineering lawn. This schemes east/west orientation allows for an optimal solar orientation.



Site C: Parking Lot 3 Construction

This alternative replaces existing parking and provides a direct connection to CEB along the west stair tower and corridor. It creates a strong front door presence on Washington Street with the front facade elongated along Washington. It has a direct connection to CEB for shared resources and connection. It lacks a connection to the engineering lawn and the student entrance would be located adjacent to the CEB main entrance and Cheney Hall entrance.



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5.0 PREFERRED ALTERNATIVE

5.1 NATURE OF SPACE

5.2 OCCUPANCY

5.3 PREFERRED ALTERNATIVE BUILDING CONFIGURATION & SQUARE FOOTAGE

5.4 SITE PLAN

5.5 LONG TERM PLANS

5.6 LAWS & REGULATIONS

5.7 PROBLEMS, COMPONENTS, TECHNOLOGY, SECURITY, COMMISSIONING

5.1 NATURE OF SPACE & SQUARE FOOTAGE

The preferred alternative will construct a new three story, 82,523 GSF. Engineering Building connected to the existing Computing and Engineering Building (CEB). The building will house hands-on teaching and research laboratories, lab support facilities, and student meeting and study areas.

33,530 GSF of CEB and nearby Cheney Hall will be modified to create physical connections to the new building, take better advantage of existing spaces that are suited to non-lab MENT and CE courses, and optimize instructional and operational efficiencies. The demolition of Cadet Hall is also included in the project scope. See Section 4.0 Site Analysis for more detailed discussion of Cadet Hall and relocation of its current program.

The program for the Preferred Alternative–a new Engineering Building combined with targeted renovations of CEB and Cheney Hall–was developed in conjunction with campus and Engineering Department leadership and is summarized in the following table. See Section 2.0 Space Needs Assessment for more detail.

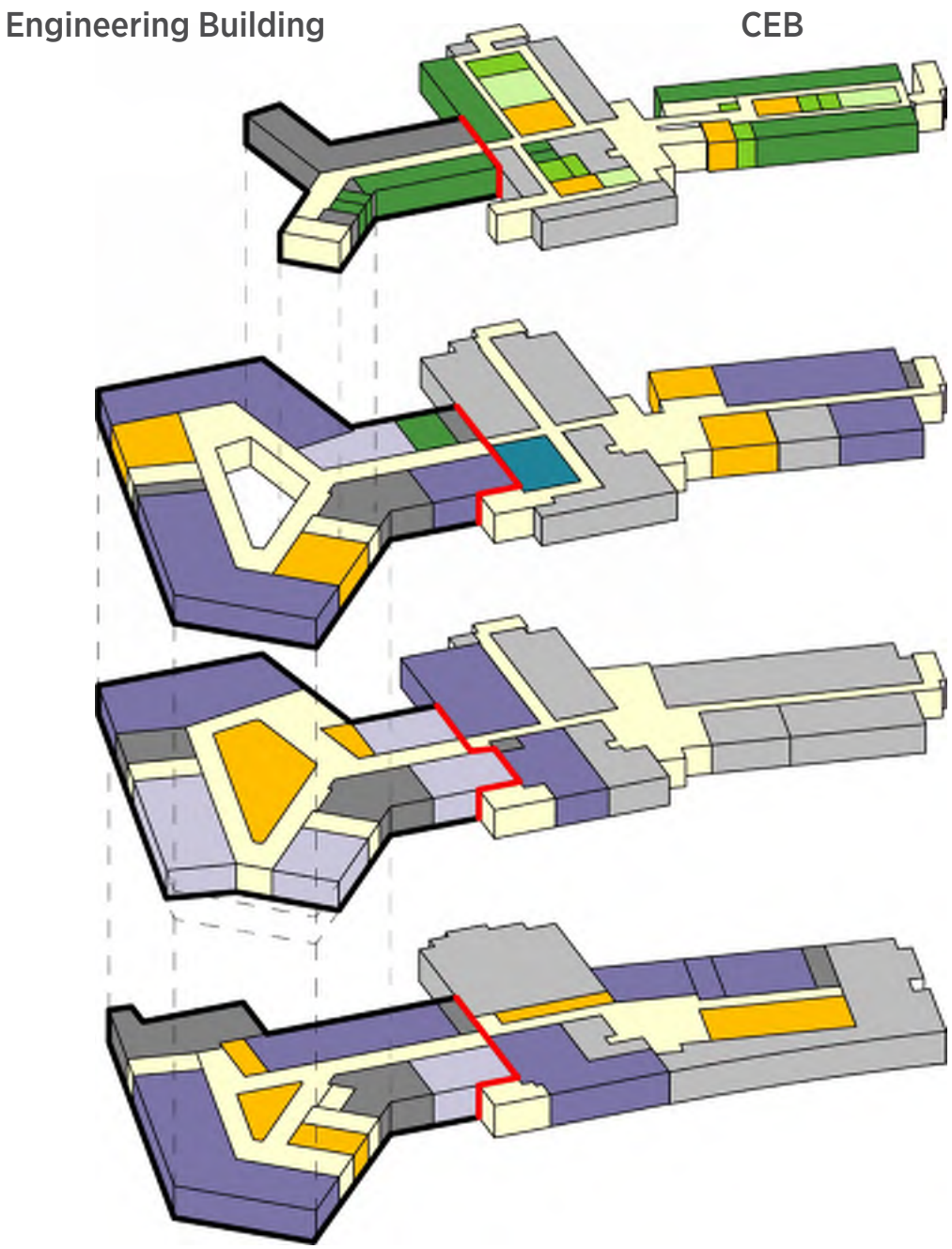
PROGRAM ELEMENT	AREA (ASF)	
ENGINEERING BUILDING		
Teaching Labs	31,400	
Research Labs	3,267	
Lab Support	1,800	
Offices & Office Support	1,740	
Collaboration	7,180	
Total Engineering Building (ASF)	45,387	
Estimated Net/Gross Ratio	55%	Ratio consistent with other science buildings
Estimated Engineering Building Area (GSF)	**82,522**	
CEB Renovated Spaces		
Teaching Labs	14,406	
Research Labs	2,863	
Classrooms	1,296	
Offices & Office Support	8,809	
Collaboration	4,051	
Total CEB Renovated Space (ASF)	31,425	
Estimated Net/Gross Ratio	80%	
Estimated CEB Renovated Area (GSF)	**39,281**	
Cheney Hall Renovated Spaces		
Teaching Labs	981	
Research Labs	1,836	
Total CEB Renovated Space (ASF)	2,817	
Estimated Net/Gross Ratio	90%	
Estimated CEB Renovated Area (GSF)	**3,130**	

5.2 OCCUPANCY

Total enrollment occupancy for the combined Engineering Building and renovated CEB and Cheney Hall project is 700 students. EWU's expectation is that this building under current growth forecasts for students and faculty would reach maximum capacity at about 15 years after opening. The objective will be to occupy and reach capacity as quickly as possible. EWU is continuously reviewing faculty hiring, enrollment data and projections, curriculum requirements, scheduling, class sizes, etc to identify a maximum enrollment capacity.

5.3 BUILDING CONFIGURATION

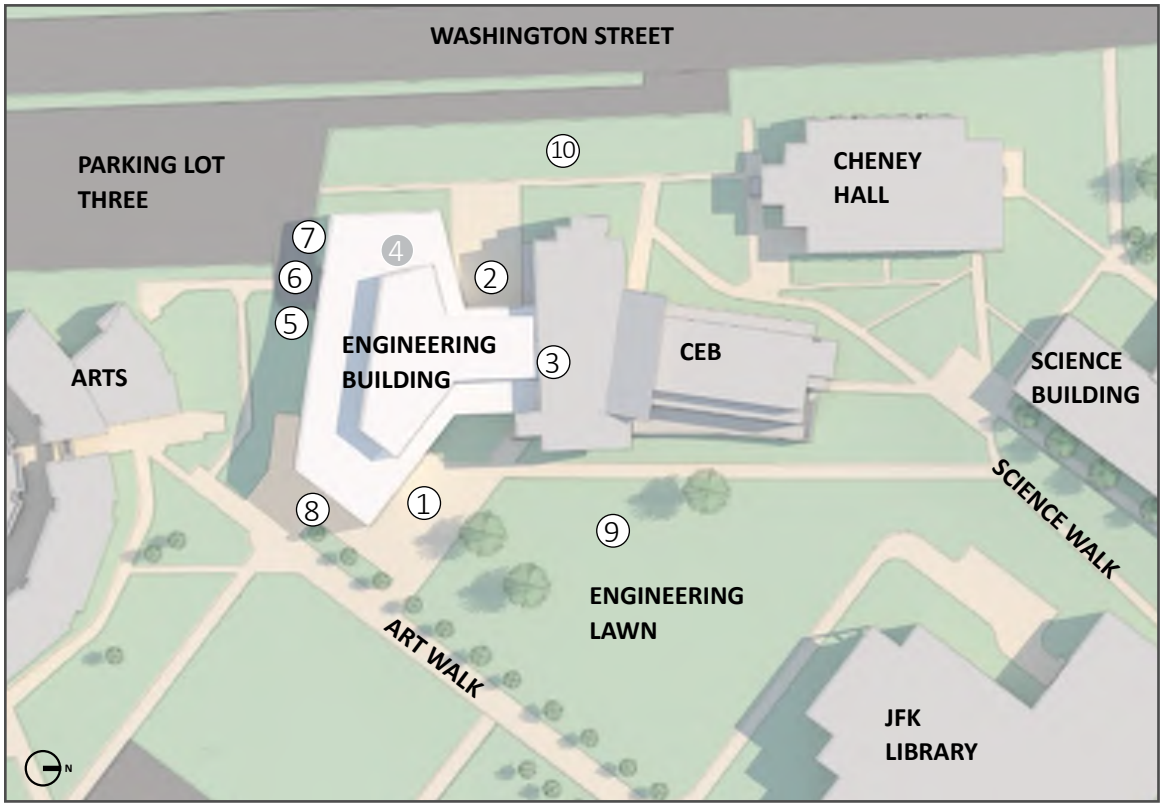
The below axonometric drawing illustrates the basic, four-story, configuration of programmed spaces in the preferred alternative. The project primarily consists of a new facility–to the left of the red line–that contains teaching laboratories, research laboratories, and collaborative working spaces. The new building has an integral connection to the existing Computing and Engineering Building (CEB)–to the right of the red line–some of which will be modified to complete the project program. See Project Drawings section for more detailed floor plans and 3d views.



Engineering Program Legend

- Teaching Laboratories
- Research Laboratories
- Project Laboratories & Storage
- Classrooms
- Collaboration Spaces
- Circulation
- Offices
- Office Support
- Open Office
- Building Support
- Not in project scope

5.4 SITE PLAN



Site Features

1) Northwest Entrance Plaza- One of two primary building entries is located off the Art Walk and faces the Engineering Lawn.

2) Washington Entrance- One of two primary building entries provides access from Washington Street, off of Parking Lot Three.

3) Connection to CEB- Continuation of CEB's north-south circulation corridor into the building on Ground, First and Second Floors.

4) Utility Tunnel- A branch utility tunnel connects a partial mechanical basement with the existing campus utility tunnel that runs under the building.

5) Service Yard- Located adjacent to the parking lot, includes electrical equipment such as transformers, and trash/recycle;

6) Loading Dock- Access from Washington Street through Parking Lot Three;

7) Raised Direct Loading Doc- From Parking Lot Three into Metallics;

8) Direct Loading- From Art Walk into ground level Industry Space and Northwest Entrance.

9) Engineering Lawn- A new path from Science Walk past CEB to the building. Enlarged hardscape work area to the east of both buildings.

10) Bio Infiltration Swale- A vegetative system will hold stormwater and treat stormwater from the vehicular drive

5.5 LONG TERM PLANS

The project is consistent with applicable long-term plans as required by RCW 43.88.110 through EWU's 2014 Comprehensive Master Plan.

5.6 LAWS & REGULATIONS

Sustainable Design

Sustainable strategies to reduce and enhance the project's impact on the environment and lower its energy demand will ultimately have a beneficial effect on its longevity and operational cost. Reusing and upgrading existing buildings is the most important greenhouse gas reduction strategy in the built environment, reducing air pollution, eliminating waste, and reducing the demand for new materials. There are numerous regulations and plans that point this project towards highly energy efficient and low-carbon building strategies listed below, along with many sustainability strategies that can be advanced in the next phase.

High Performance Buildings: Eastern Washington University has a proven track dating back to 2008 of designing and constructing high-performance buildings using the LEED rating system. This project will select design consultants who embody EWU's sustainability objectives. This project will be designed, constructed, and certified to the LEED Silver Standard, as a minimum, in accordance with RCW 39.35D. A LEED Checklist, outlining a preliminary approach to silver, has been included in the Appendix. EWU has had a history of achieving LEED silver or higher and will strive to achieve LEED gold or platinum on this project.

State Efficiency and Environmental Performance: The Governor's Executive Order 20-01 mandates high performance buildings for reduction of greenhouse gases, reduction of pollutants from fossil fuels, and the use of clean energy when technically and economically feasible. Eastern Washington University acknowledges that the costs of constructing zero energy or zero energy capable buildings are nearing parity with conventional buildings. Consequently, the university will further progress its building construction endeavors toward this directive, employing life-cycle cost analysis tools to inform decision-making throughout the design process. The life-cycle cost analysis performed as part of this predesign included the evaluation of a net zero building. In studying the use of photovoltaic (PV) solar panels for on-site renewable energy generation, the required area of PV panels exceeded the available roof area and would require additional dedicated site area. PV panels required by the Washington State Energy Code will be installed.

State Energy Standards for Clean Buildings: The Department of Commerce, through RCW 19.27A.210, has developed standards for reducing greenhouse gas emissions from the building sector as published in the Washington State Clean Buildings Performance Standard (2021). The Clean Building Performance Standard has established energy use intensity targets. This building is anticipated to exceed the 50,000 square feet threshold for Tier 1 Buildings, mandating compliance on the building level. EWU monitors their Energy Use Intensity (EUI) as a campus and has been evaluating their overall EUI in relation to the Washington State Clean Building Performance Standard, with a target campus EUI of 112.2. The preferred building option of this predesign is anticipated to reduce the entire campus' EUI from the current value of 118.4 closer to compliance with the Clean Building Performance Standard EUI requirement.

As of March 15, 2024, the 2021 Edition of the Washington State Energy Code has been implemented. Washington State Energy Codes are on a path towards 70% energy use reduction and the elimination of fossil fuels from buildings by 2031. With progressively more aggressive energy requirements, facilities will progress towards reducing energy consumption and associated greenhouse gas emissions, as outlined in the Greenhouse Gas Emissions Policy. The 2021 code

includes a requirement for photovoltaics panels on site. The project will be permitted under the code in effect at the time of permit which may be the 2021 codes or the 2024 codes, which are expected to be in effect November of 2026.

Required vehicle charging capabilities: Per RCW 19.27.540, where new parking is provided at the building, electric vehicle charging stations and infrastructure shall be provided in compliance with WAC 51-50-0429. The electric vehicle charging stations and infrastructure shall meet Level 2 charging capacity requirements with each charger rated for 40 amps at 208V, 1PH. Charger locations will be coordinated to not conflict with campus snow removal operations.

Greenhouse Gas Emissions Policy (RCW 70A.45.070): The referenced Revised Code of Washington regarding the greenhouse gas emissions reductions requires all state agencies to reduce greenhouse gas emissions as follows:

i. By 2020 to 1990 levels.
ii. By 2030 to forty-five percent below 1990 levels.
iii. By 2040 to seventy percent below 1990 levels.
iv. By 2050 to ninety-five percent below 1990 levels.

Eastern Washington University is committed to becoming a carbon neutral institution and a leader in sustainable practices. Part of the University's strategy to cut greenhouse gas emissions involves decreasing reliance on fossil fuels for building energy. The incorporation of energy-efficient HVAC, plumbing, and electrical systems in this proposed facility is crucial for advancing the campus's goal of reducing overall fossil fuel usage. Given that major capital projects are typically significant energy consumers, prioritizing energy efficiency in the new facility is particularly important.

This project is unique for EWU as it intends to utilize a new all electric heating and cooling system produced by a ground source heat pump for heating, domestic hot water, and chilled water. This ground source heat pump system will be housed in a newly proposed central geothermal energy plant. By connecting to an all-electric heating system, this project will significantly reduce carbon emissions associated with the building when compared to the existing facility that is currently connected to the campus steam plant, which utilizes natural gas fired steam boilers.

Campus Decarbonization Plan & Climate Action Plan: EWU is currently working on a campus Decarbonization Plan, scheduled for completion in 2025. This plan will outline the steps needed to align the campus with House Bill 1390, to decarbonize the existing central heating plant.

EWU is also updating their Climate Action Plan (CAP), which will address how the University can achieve carbon neutrality over the next 30 years. While the CAP may not be complete in the short term, design teams should consider strategies to align with the goals of carbon neutrality in the next 30 years. The electricity grid in Washington will be carbon neutral beginning in 2030, meaning a high-performance, all-electric building will meet that goal.

Campus Decarbonization Plan & Climate Action Plan: Supporting these plans and compliance with HB 1390, this project intends to connect to a new GeoEco central plant that utilizes an efficient, all-electric heating and cooling system produced by a ground source heat pump for heating, domestic hot water, and chilled water. This ground source heat pump system will be housed in a newly proposed central geothermal energy plant. By connecting to an all-electric heating system, this project will significantly reduce carbon emissions associated with the building when compared to the existing facility that is currently connected to the campus steam plant, which utilizes natural gas fired steam boilers. The building will also serve students and faculty as a living lab of the low-carbon energy future that they will be part of.

The building design can save cost and allow the GeoEco plant to serve more buildings by reducing peak loads through a high-performance envelope, including reasonable glazing percentage and above-code insulation, as well as high performance mechanical systems and demand response systems.

Consolidation of energy intensive lab/shop spaces into the new addition, whose processes require large amounts of fresh air and exhaust, will allow for sustainable energy efficient solutions that cannot be accommodated within the existing building due to practical spatial restraints. Energy efficient solutions include capture of waste energy from the exhaust air to pre-heat and pre-cool the ventilation air, variable flow demand-based ventilation systems, filtering and recycling air from sawdust collection systems.

ELCCA & LCCA: Washington State requires capital projects to engage in Energy Life Cycle Cost Analysis (ELCCA) per the Department of Enterprise Services (DES) Assessment as well as a Life Cycle Cost Analysis (LCCA) per the Office of Financial Management (OFM). The design team and University will strive to use these requirements as an opportunity to study high-performance design to reduce energy use and cost in detail and make informed decisions about energy-saving strategies, in line with Washington State's greenhouse reduction goals for new buildings. Meeting these requirements requires a robust energy modeling effort including ASHRAE Standard 209.

Wellness: Americans spend 90% of our time indoors, so buildings need to support human health. Part of the LEED system and EWU's mission includes supporting student wellness, beyond the air pollution and climate pollution reductions that are part of energy-related strategies above. Student health and educational outcomes can be improved through sensitive daylighting, a mix of social and separate spaces, materials selection to reduce or eliminate toxins, abundant fresh air, biophilia, access for a range of mobility and learning modes and more. Increasing the insulation value of the existing building will significantly increase thermal comfort as well. The design of the building during the next phase is critical for these goals.

EWU Campus Landscape Vision and Prairie Restoration Project: These plans work toward a resilient, sustainable campus landscape that is part of student experience and engagement towards ecological restoration. This plan includes dedicating "a third of campus land and resources for students to actively participate in a real-world, multidisciplinary project designed to restore a threatened ecosystem in our region." This includes low-maintenance Xeriscape, plantings that do not need watering after establishment, installed previously at EWU as part of the Interdisciplinary Science Center project as a water-saving feature. High performance, water-saving plumbing fixtures are anticipated in the LEED scorecard.

Embodied Carbon and the Buy Clean, Buy Fair Act: Since an all-electric building will have close to zero greenhouse gas emissions from energy use, nearly all greenhouse gases will be released in the creation, transportation, and installation of construction materials, referred to as embodied carbon. The most important embodied carbon strategy – building reuse – is already integrated into the Predesign preferred alternate. Reusing and renovating nearly all of the existing buildings means that the biggest impact materials – structure and enclosure – only need minor updates instead of building from all new materials. In the next phase additional embodied carbon reductions through material selection and specifications, especially concrete, will contribute LEED points and an overall project carbon reduction. Emerging low-carbon steel and concrete, along with mass timber, can be considered during design.

HB 1282 was passed in 2024, requiring disclosure of Environmental Product Declarations (EPDs) that include greenhouse gas emissions information for certain materials on state projects > 50,000 sf such as this one, beginning in July 2026.

Archeological and Cultural Resources
No archeological or cultural resources are known or anticipated. Per Governor's Executive Order 21-02, EWU has initiated consultation with DAHP and affected tribes; see DAHP and Tribal Letters in the Appendix. DAHP has noted that a survey of Cadet Hall showing non-significance will be required to complete their review. This survey is in progress.

ADA Implementation
The project complies with Executive Order 96094, the Americans with Disabilities Act.

Planning Compliance
The Preferred Alternative complies with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.

Information required by RCW 43.88.0301(1)

RCW 43.88.0301(1)(a)(i):	No
RCW 43.88.0301 (1)(a)(ii)(A):	No, not within the urban growth area. Yes, part of planned employment growth.
RCW 43.88.0301 (1)(a)(ii)(B):	Yes. EWU growth provides growth in Cheney and graduates with skills used by local industry.
RCW 43.88.0301 (1)(b)(i):	Yes
RCW 43.88.0301 (1)(b)(ii):	No
RCW 43.88.0301 (1)(b)(iii):	Yes

Other Codes & Regulations
EWU engineering building is expected to comply with the following codes:

Building	International Building Code, latest edition with Washington State amendments, WAC 51-50
Fire	International Fire Code, latest edition with Washington State amendments, WAC 51-54 NFPA 13 Standard for the Installation of Sprinkler Systems
Mechanical	International Mechanical Code, latest edition with Washington State amendments, WAC 51-52
Plumbing	Uniform Plumbing Code, current Washington State-required edition with amendments, WAC 51-56 & 57
Electrical	National Electric Code, current Washington State-required edition, WAC 296-46B
Energy	Washington State Non-Residential Energy Code, latest edition, WAC 51-11
Accessibility	Accessible and Usable Buildings and Facilities, ICC/ANSI 117.1, current Washington State-required edition
Air Quality	Washington State Ventilation and Indoor Air Quality Code, WAC 51-13
Elevators	American Society of Mechanical Engineers (ASME) A17.1, current Washington State-required edition
Sustainability	High-performance public buildings (Chapter 39.35D RCW). State efficiency and environmental performance (Executive Order 20-01) State Energy Standards for Clean Buildings (RCW 19.27A.210) Greenhouse Gas Emissions Policy (RCW 70A.45.070)
Seismic	American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures ASCE 7-16

EWU Engineering building is expected to comply with the following standards:
- American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

- ASHRAE Standard 62.1 – Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 55 – Thermal Comfort
- Sheet Metal Contractors Association of North America (SMACNA)
- American Society of Plumbing Engineers (ASPE)
- Eastern Washington University, Design and Construction Guidelines

Preliminary Building Code Analysis

The following code analysis identifies critical issues in the 2021 International Building Code that must be addressed during the design process; however, it is not intended as a complete investigation of relevant code requirements.

Use and Occupancy Classification (Chapter 3): The building occupancy will be classified as Group B, with Group S-2 spaces for low-hazard general storage and possibly Group H-2 spaces for hazardous storage.

Construction Type (Chapter 5): Type II-A, fully sprinklered construction is assumed for this report.

Building Height and Area (Chapter 5): Predesign concept plans have determined that the Engineering building will be 3 stories in height, with total size of about 82,500 gross square feet. The largest single floor will be approximately 26,000 square feet. Type II-A fully sprinklered buildings with Group B occupancies are allowed to be up to 112,500 square feet per story, up to 85 feet in height, and a maximum of 6 stories tall. H-2 occupancies are allowed on any floor up to two stories above grade.

Fire Resistive Construction (Chapter 6 & 7): Per IBC 602.2, all building elements are to be of noncombustible construction.

Building Element	Required Rating
Structural Frame	1-hour
Exterior Bearing Walls	1-hour
Interior Bearing Walls	1-hour
Exterior Non-bearing Walls	Unrated with greater than 30-foot separation
Int. Non-bearing Partitions	Unrated unless providing required separation
Floors	1-hour
Roofs	1-hour
Shaft Enclosures	1-hour
Exterior Openings	Unprotected with no limit if over 20-foot separation

Note: The provision of an automatic fire sprinkler system through the building may eliminate the requirement for 1-hour fire resistive construction in some building elements.

Occupant Load (Table 1004.1.1):

Area	Occupant Load Factor
Classrooms	20 sf/ occupant
Laboratories	50 sf/ occupant
Offices	150 sf/ occupant
Storage	300 sf/ occupant
Mechanical Rooms	300 sf/ occupant

Egress Requirements (Chapter 10):

Egress Element	Requirement
Exit Width	Stairs: 0.3"/ occupant, minimum 44" wide for occ. load > 50
Door Width	0.2"/ occupant, minimum 32" wide clear opening
Exit Corridors	Minimum 44" wide
Number of Exits	2 when occupant load > 50, 3 when occ. load > 500
Exit Location	Exits shall be located at a distance apart equal to not less than one third of the length of the maximum diagonal dimension of the building or area served, where building is equipped with automatic sprinkler systems.
Travel Distance	Travel distance shall not exceed 300' in a sprinklered. Group B occupancy. H-2 occupancies are limited to shorter allowable travel distances, 100'.

5.7 PROBLEMS, COMPONENTS, TECHNOLOGY, SECURITY, COMMISSIONING

Problems Requiring Future Study: No problems requiring future study have been identified.

Significant Components: No significant or distinguishable components, including major equipment and ADA requirements in excess of existing code have been identified.

Planned Technology Infrastructure: The project is planned to conform with EWU's IT protocols and specifications with typical IT infrastructure for the space use types. See the Outline Specifications and Laboratory Room Data Sheets in the Appendix for more detail.

Security Measures: The project is planned to conform to EWU's security guideines and includes typical security measures for the space use types. See the Outline Specifications in the Appendix for more detail.

Planned Building Commissioning: Building commissioning is integrated into schedule to verify via documentation that all building systems perform interactively and according to the design intent.

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6.0 PHASING, DELIVERY, SCHEDULE & MANAGEMENT

6.1 PHASING OPPORTUNITY

6.2 DELIVERY METHOD

6.3 IMPLEMENTATION & MANAGEMENT

6.4 MILESTONE SCHEDULE

6.5 SCHEDULE FACTORS

6.1 PHASING OPPORTUNITY

The project can be phased as noted below. The decision to phase and phasing details will be determined in the Design phase. This report, including schedule and cost estimate, assumes the Engineering Building and targeted renovations of CEB and Cheney Hall occur in a single phase.

Preliminary Phasing Strategy

- Phase 1: Engineering Building construction with connections to CEB. CEB and Cheney remain occupied during construction. Loading for CEB would occur at the Ground Floor during construction.
- Phase 2: Renovations of CEB and Cheney Hall.

6.2 DELIVERY METHOD

Eastern Washington University intends to employ the traditional Design/Bid/Build approach for this project. Previous major capital projects at EWU have been successfully executed within or under the allocated budget using this method. Its cost-effectiveness aligns well with the regional context and the construction administration capabilities available to EWU. Presently, there's no compelling reason for EWU to seek approval for an alternative delivery method under RCW 39.10.

6.3 PROJECT MANAGEMENT

The University's Construction & Planning office will manage the design and construction of this project. The Associate Vice President for Facilities and Planning is responsible for overall organization management. Construction & Planning provides oversight of programming; predesign; cost estimating; design and construction services for building alterations, new construction, and grounds improvements for the Cheney campus.

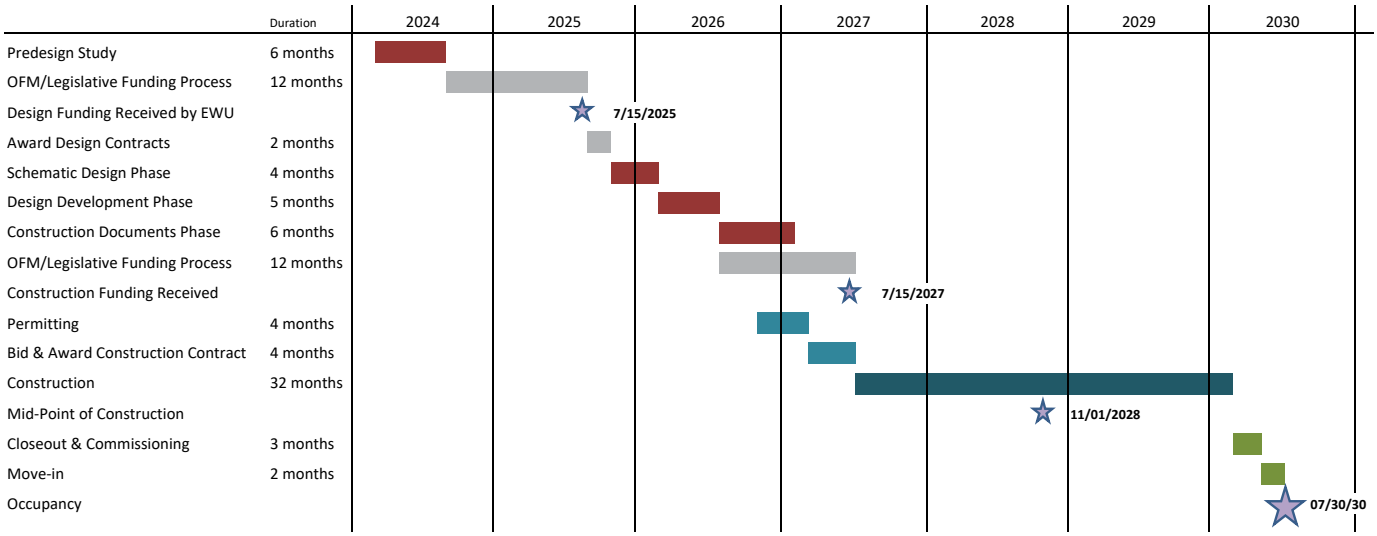
Project managers organize and administer the work of outside design consultants and public works contractors. They follow projects all the way through construction and work closely with clients, project architects, designers and consultants to ensure projects are on time and within budget.

The following individuals in the Construction & Planning office will oversee this project:

Kris Jeske	Director, Construction & Planning
Troy Bester	Senior Project Manager

The cost for the University's management of the design and construction is included in the Project Budget Analysis section of this report

6.4 MILESTONE SCHEDULE



6.5 SCHEDULE FACTORS

Value Engineering and Constructibility
Value-engineering analysis and constructability review will be integrated throughout the design and building process, and the time has been factored into the schedule above.

Project Delays
The proposed construction and completion of the new GeoEco Plant, which will provide geothermal heating and cooling to this project, is planned as a separate project. The completion of the GeoEco Plant will be required before the completion of this project, as it will serve as the sole source of building heating and domestic hot water.

Permitting
Buildings on EWU's campus are subject to the governing codes of the City of Cheney. EWU maintains a good working relationship with the City of Cheney and discusses each project with the City prior to implementation. It is anticipated that during the design process, the university and design team will meet periodically with officials of the City to ascertain that building plans are in conformance to the City's requirements.

Local Government Ordinances or Neighborhood Issues
No known local government ordinances or neighborhood issues.

Local Jurisdiction & Community Engagement
The local jurisdiction will be notified during the design phase. Meetings with local engineering industry partners are planned as part of the process. Community stakeholder meetings are not currently anticipated.

7.0 PROJECT BUDGET ANALYSIS PREFERRED ALTERNATIVE

7.1 COST ESTIMATE ASSUMPTIONS

7.2 CONSTRUCTION COST ESTIMATE UNIFORMAT LEVEL II SUMMARY

7.3 PROPOSED PROJECT COST

7.4 FURNITURE, FIXTURES & EQUIPMENT

7.5 PROPOSED FUNDING

7.6 FACILITY OPERATIONS AND MAINTENANCE REQUIREMENTS

7.7 C100

7.1 COST ESTIMATE ASSUMPTIONS

The following assumptions have been made as the basis for the Engineering Building project budget:

- The Engineering Building and targeted renovations to CEB and Cheney Hall will be constructed as a single phase.
- The construction start date will be July 2027.
- The construction period will be 32 months.
- Design/Bid/Build delivery method will be utilized.
- The project will follow the Outline Specifications included in the Appendix of this report.
- The Engineering Building will be designed to achieve a minimum LEED silver rating.
- The Engineering Building will be designed to comply with the codes and standards sited in this report.
- New mechanical, plumbing and electrical services will be provided complying with local building codes and campus standards.
- Heating and domestic hot water to the Engineering Building and renovated CEB will be provided by a connection to a new campus low temperature heating water (LTHW) system which is a separate campus GeoEco Plant project. This system will operate at 120°F. 50' of dedicated 6"Ø low temperature hot water supply and return piping is anticipated be routed across from mains installed as part of the GeoEco Plant project to the building utilizing direct buried, insulated, jacketed, and fusion-welded high temperature HDPE SDR-11 pipe.
- New utility tunnel connections will bring campus steam, chilled water, electrical and telecommunications to the buildings.
- The Engineering Building will be sprinklered throughout.
- Approximately 24 of the existing parking stalls will be removed and/or relocated as part of this project. A new loading zone from Washington Street via Parking Lot Three will be constructed.
- Subgrade soil conditions are expected to be similar to those at nearby buildings. A geotechnical investigation for the site has not been completed. Soils reports from the adjacent JFK Library and the nearby CEB indicate that site soils consist of a thin stratum of topsoil over medium stiff clayey silt or clay (Palouse formation) over stiffer Saprolite clays over basalt bedrock.
    - ❖ At CEB the clays extend down to as deep as 40 feet with groundwater encountered at 10 to 15 feet deep, and foundations consist of spread footings over rock bearing pads, which are located in stiffer Saprolite clays below the Palouse formation layer.
    - ❖ At JFK the site is clay silt over basalt bedrock at depths ranging from 12-17.5 feet below grade with ground water present, and the foundations are taken to bedrock utilizing concrete piers, and there is a foundation dewatering system.
    - ❖ The adjacent campus utility tunnel has dewatering sumps that pump to the stormwater system.
    - ❖ The presence of groundwater is expected on the project site, necessitating the inclusion of a permanent dewatering system for the utility tunnel connection and basement area.

7.2 CONSTRUCTION COST ESTIMATE UNIFORMAT LEVEL II SUMMARY

A detailed construction cost estimate for new building, existing building work and site improvements was prepared by a professional cost estimator. See Appendix for detailed estimate.

New Engineering Building Construction:

A10	Foundations	$1,267,643
A20	Basement Construction	$575,940
B10	Superstructure	$5,812,905
B20	Exterior Closure	$3,681,412
B30	Roofing	$1,168,398
C10	Interior Construction	$3,119,207
C20	Stairs	$175,000
C30	Interior Finishes	$3,392,694
D10	Conveying	$525,000
D20	Plumbing Systems	$3,465,924
D30	HVAC Systems	$8,912,376
D40	Fire Protection Systems	$453,871
D50	Electrical Systems	$8,087,156
E10	Equipment (built in)	$3,213,230
E20	Casework & Furnishings (built in)	$ 918,880
	Subtotal New Building Construction	$44,769,635
	Design Contingency/ Contractor Overhead	$12,714,576
	Total New Building Construction Cost	$57,484,211

Existing CEB Building Construction:

C10	Interior Construction	$1,135,668
C30	Interior Finishes	$1,291,712
D20	Plumbing Systems	$ 522,437
D30	HVAC Systems	$3,894,156
D40	Fire Protection Systems	$145,340
D50	Electrical Systems	$1,924,769
E10	Equipment (built in)	$ 261,544
E20	Casework & Furnishings (built in)	$304,035
F20	Selective Demolition	$336,500
	Subtotal Existing CEB Building Construction	$ 9,816,161
	Design Contingency/ Contractor Overhead	$2,577,724
	Total Existing CEB Building Construction Cost	$12,393,885

Existing Cheney Building Construction:

C10	Interior Construction	$22,532
C30	Interior Finishes	$ 109,160
D20	Plumbing Systems	$41,629
D30	HVAC Systems	$157,345
D40	Fire Protection Systems	$11,581
D50	Electrical Systems	$153,370
E10	Equipment (built in)	$25,226
E20	Casework & Furnishings (built in)	$23,475
F20	Selective Demolition	$28,951
	Subtotal Existing Cheney Hall Building Construction	$573,270
	Design Contingency/ Contractor Overhead	$150,541
	Total Existing Cheney Hall Building Construction Cost	$723,811

Site Construction:		
G10	Site Preparation	$1,743,564
G20	Site Improvements	$726,364
G30	Site Civil / Mechanical Utilities	$285,700
G40	Site Electrical Utilities	$670,000
G50	Other Site Construction	$137,500
	Design Contingency/ Contractor Overhead	$935,677
	Total Sitework Construction Cost	$4,498,805
General Conditions & Support Services		$3,680,000
Unescalated Maximum Allowable Construction Cost (MACC)		$78,780,712
Escalation to Midpoint of Construction (Q4, 2028)		$14,180,528
Escalated Maximum Allowable Construction Cost (MACC)		**$92,961,240**

7.3 PROPOSED PROJECT COST

Escalated project costs for the Engineering Building are summarized as follows; detailed project costs have been submitted to OFM through the online Capital Budgeting System.

Acquisition Costs	$0
Consultant Services	$9,569,384
Construction Contracts	$106,942,195
Equipment	$6,403,647
Art Work	$636,743
Other Costs	$0
Project Management	$4,433,304
Total Project Request	**$127,985,272**

7.4 FURNITURE, FIXTURES & EQUIPMENT: Included in the project budget.

7.5 PROPOSED FUNDING: The Engineering Building will be a State funded project.

7.6 FACILITY OPERATIONS AND MAINTENANCE REQUIREMENTS

Assumptions

The following estimates of operations and maintenance costs, including FTEs, for the Engineering Building are based on the "EWU's Annual Cost per Gross Square Foot" for FY24. Costs are escalated at an inflation rate of 3.0 % per year. Through careful project sequencing and/or phased construction, moving costs are estimated to be minimal. No additional operating costs are anticipated after the renovations of CEB and Cheney Hall.

Impact & Agency Responsible

The Engineering Building project will be maintained by the Owner. It will result in an increase to operations and maintenance costs for the campus. The new building will require an increase in the custodial staff, maintenance staff, goods and services, and utility costs.

Operations and Maintenance Cost

Current campus operations and maintenance costs for FY25 are shown in Table 1. For the Engineering Building, the projected operations and maintenance costs for the first full year of occupancy (FY2030) and five subsequent biennia are shown in Table 2.

Table 1: Operations and Maintenance - Current Campus

Operations	Operating cost GSF/YR
Component :	FY25
091-Utilities	$3.89
092 - Bldg & Utilities Maintenance	$2.73
093 - Custodial & Grounds Service	$3.56
094 - Ops & Maintenance Support	$3.73
Total Annual Per GSF	$13.91

Table 2: Operations and Maintenance - Projected Engineering Building

Operations	Operating cost GSF/YR	Cost 2032	Cost 2034	Cost 2036	Cost 2038	Cost 2040
Component :	FY30					
091-Utilities	$4.51	$4.78	$5.08	$5.38	$5.71	$6.06
092 - Bldg. & Utilities Maintenance	$3.16	$3.36	$3.56	$3.78	$4.13	$4.25
093 - Custodial & Grounds Service	$4.13	$4.38	$4.64	$4.93	$5.38	$5.55
094 - Ops & Maintenance Support	$4.32	$4.59	$4.87	$5.16	$5.64	$5.81
Total Annual Per GSF	$16.13	$17.11	$18.15	$19.25	$20.87	$21.67
Total GSF	82,522					
Total Annual Operating Cost	$1,330,709	$1,411,749	$1,497,724	$1,588,936	$1,722,131	$1,788,361

7.7 C100

STATE OF WASHINGTON

AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Engineering Building
OFM Project Number	30000556

Contact Information	
Name	Troy Bester
Phone Number	509-359-2204
Email	tbester@ewu.edu

Statistics			
Gross Square Feet	124,933	MACC per Gross Square Foot	$648
Usable Square Feet	79,629	Escalated MACC per Gross Square Foot	$744
Alt Gross Unit of Measure			
Space Efficiency	63.7%	A/E Fee Class	A
Construction Type	Other Sch. A Projects	A/E Fee Percentage	7.08%
Remodel	No	Projected Life of Asset (Years)	30
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, Wa
Contingency Rate	5%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	March-24	Predesign End	June-24
Design Start	November-25	Design End	January-27
Construction Start	July-27	Construction End	March-30
Construction Duration	32 Months		

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Project Cost Summary			
Total Project	$111,881,745	Total Project Escalated	$127,985,272
		Rounded Escalated Total	$127,985,000
Amount funded in Prior Biennia			**$0**
Amount in current Biennium			**$7,500,000**
Next Biennium			**$120,485,000**
Out Years			**$0**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
Design Phase Services	$4,174,615		
Extra Services	$2,224,200		
Other Services	$1,969,052		
Design Services Contingency	$418,393		
Consultant Services Subtotal	**$8,786,260**	**Consultant Services Subtotal Escalated**	**$9,569,384**

Construction			
Maximum Allowable Construction Cost (MACC)	$80,908,889	Maximum Allowable Construction Cost (MACC) Escalated	$92,961,240
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$4,545,444		$5,240,898
Non-Taxable Items	$0		$0
Sales Tax	$7,605,493	Sales Tax Escalated	$8,740,057
Construction Subtotal	**$93,059,826**	**Construction Subtotal Escalated**	**$106,942,195**

Equipment			
Equipment	$5,100,000		
Sales Tax	$453,900		
Non-Taxable Items	$0		
Equipment Subtotal	**$5,553,900**	**Equipment Subtotal Escalated**	**$6,403,647**

Artwork			
Artwork Subtotal	**$636,743**	**Artwork Subtotal Escalated**	**$636,743**

Agency Project Administration			
Agency Project Administration Subtotal	$3,845,016		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$3,845,016**	**Project Administration Subtotal Escalated**	**$4,433,304**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$111,881,745**	Total Project Escalated	**$127,985,272**
		Rounded Escalated Total	**$127,985,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				$0
Consultant Services					
Consultant Services Subtotal	$9,569,384		$7,500,000	$2,069,384	$0
Construction					
Construction Subtotal	$106,942,195			$106,942,195	$0
Equipment					
Equipment Subtotal	$6,403,647			$6,403,647	$0
Artwork					
Artwork Subtotal	$636,743			$636,743	$0
Agency Project Administration					
Project Administration Subtotal	$4,433,304			$4,433,304	$0
Other Costs					
Other Costs Subtotal	$0				$0
Project Cost Estimate					
Total Project	**$127,985,272**	**$0**	**$7,500,000**	**$120,485,273**	**-$1**
	$127,985,000	**$0**	**$7,500,000**	**$120,485,000**	**$0**
	Percentage requested as a new appropriation		**6%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Design
Insert Row Here

What has been completed or is underway with a previous appropriation?
NA
Insert Row Here

What is planned with a future appropriation?
Remaining consultant services, construction, equipment, artwork, agency project administration
Insert Row Here

Cost Estimate Details

Acquisition Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	NA			
Appraisal and Closing	NA			
Right of Way	NA			
Demolition	NA			
Pre-Site Development	NA			
Other				
Insert Row Here				
ACQUISITION TOTAL	**$0**	**NA**	**$0**	

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0452**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$4,174,615			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$4,174,615**	**1.0653**	**$4,447,218**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$90,000			
Geotechnical Investigation	$30,000			
Commissioning	$180,000			
Site Survey	$28,500			
Testing				
LEED Services	$90,000			
Voice/Data Consultant	$60,300			
Value Engineering	$35,000			
Constructability Review	$31,400			
Environmental Mitigation (EIS)	$30,000			
Landscape Consultant	$150,000			
Electronic Security Consultant	$20,000			
Audiovisual Consultant	$40,000			
Lighting Consultant	$58,000			
Laboratory Planning Consultant	$450,000			
Acoustical Consultant	$34,000			
Interior Design	$400,000			
Elevator Consultant	$20,000			
Hardware Consultant	$7,500			
Code Consultant	$8,900			
Building Envelope Consultant	$80,000			
Value Engineering Support	$35,000			
Energy Life Cycle Cost Analysis (ELCCA)	$80,000			
Life Cycle Cost Analysis (LCCA)	$30,000			
Energy Modeling	$65,600			
Models & Renderings	$25,000			
Full Fire Protection Design	$15,000			
Reimbursible Expenses	$130,000			
Sub TOTAL	**$2,224,200**	**1.0653**	**$2,369,441**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,875,552			31% of A/E Basic Services
HVAC Balancing	$20,000			
Staffing				
Commissioning Support	$33,500			
Record Drawings	$40,000			
Sub TOTAL	**$1,969,052**	**1.1530**	**$2,270,317**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$418,393			
Other				
Insert Row Here				
Sub TOTAL	**$418,393**	**1.1530**	**$482,408**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$8,786,260**		**$9,569,384**	

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$1,743,564			
G20 - Site Improvements	$726,364			
G30 - Site Mechanical Utilities	$285,700			
G40 - Site Electrical Utilities	$670,000			
G60 - Other Site Construction	$137,500			
Design Contingency	$641,363			18%.
Contractor Markup	$294,314			7%.
Sub TOTAL	**$4,498,805**	**1.1037**	**$4,965,332**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other	$2,128,177			
Insert Row Here				
Sub TOTAL	**$2,128,177**	**1.1037**	**$2,348,869**	
3) Facility Construction				
A10 - Foundations	$1,267,643			
A20 - Basement Construction	$575,940			
B10 - Superstructure	$5,812,905			
B20 - Exterior Closure	$3,681,412			
B30 - Roofing	$1,168,398			
C10 - Interior Construction	$4,277,407			
C20 - Stairs	$175,000			
C30 - Interior Finishes	$4,793,566			
D10 - Conveying	$525,000			
D20 - Plumbing Systems	$4,029,990			
D30 - HVAC Systems	$12,963,877			
D40 - Fire Protection Systems	$610,792			
D50 - Electrical Systems	$10,165,295			
F10 - Special Construction				
F20 - Selective Demolition	$365,452			
General Conditions	$3,680,000			
CFCI Equipment	$3,500,000			
CFCI Casework & Furnishings	$1,246,390			
Design Contingency	$10,824,025			18%.
Contractor Mark Up	$4,618,816			7%.
Sub TOTAL	**$74,281,907**	**1.1530**	**$85,647,039**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$80,908,889**		**$92,961,240**	
	$648		*$744 per GSF*	

Cost Estimate Details

7) Owner Construction Contingency				
Allowance for Change Orders	$4,045,444			
Additional Allowance for Renovation Portion of Project	$500,000			
Sub TOTAL	**$4,545,444**	**1.1530**	**$5,240,898**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1530**	**$0**	
9) Sales Tax				
Sub TOTAL	**$7,605,493**		**$8,740,057**	
CONSTRUCTION CONTRACTS TOTAL	**$93,059,826**		**$106,942,195**	

Equipment

Item	Base Amount	Escalation Factor	Escalated Cost	Notes
1) Equipment				
E10 - Equipment	$3,600,000			
E20 - Furnishings	$1,500,000			
F10 - Special Construction				
Other				
Insert Row Here				
Sub TOTAL	**$5,100,000**	**1.1530**	**$5,880,300**	
2) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1530**	**$0**	
3) Sales Tax				
Sub TOTAL	**$453,900**		**$523,347**	
EQUIPMENT TOTAL	**$5,553,900**		**$6,403,647**	

Artwork

Item	Base Amount	Escalation Factor	Escalated Cost	Notes
1) Artwork				
Project Artwork	$0			0.5% of total project cost for new construction
Higher Ed Artwork	$636,743			0.5% of total project cost for new and renewal construction
Other				
Insert Row Here				
ARTWORK TOTAL	**$636,743**	**NA**	**$636,743**	

Cost Estimate Details

Project Management				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management				
Agency Project Management	$3,845,016			
Additional Services				
Other				
Insert Row Here				
Subtotal of Other	*$0*			
PROJECT MANAGEMENT TOTAL	**$3,845,016**	**1.1530**	**$4,433,304**	

Other Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs				
Hazardous Material Remediation/Removal				
Historic and Archeological Mitigation				
Other				
Insert Row Here				
OTHER COSTS TOTAL	**$0**	**1.1037**	**$0**	

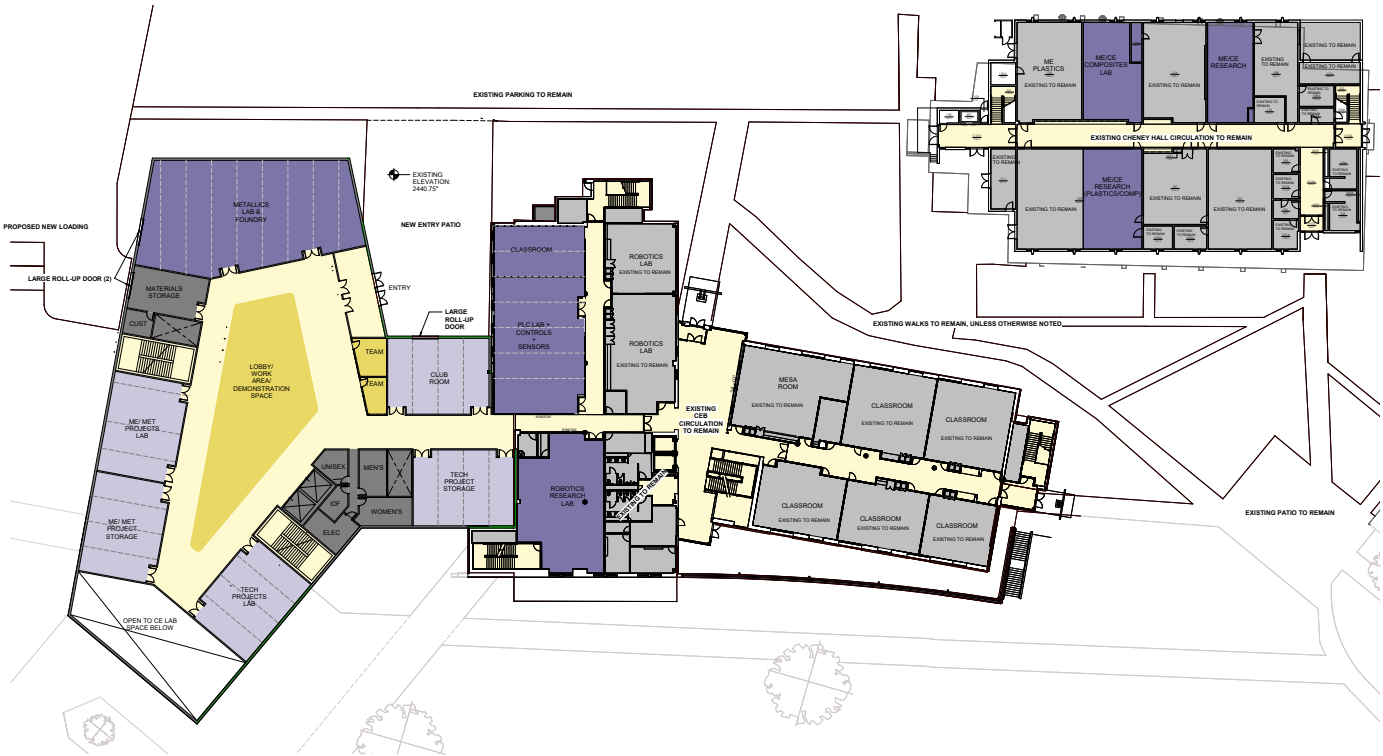
8.0 PROJECT DRAWINGS

8.1 BUILDING PLANS

8.2 AERIAL AND CONCEPTUAL MASSING VIEWS

8.1 BUILDING PLANS

GROUND LEVEL



LEVEL ONE

Engineering Program Legend

- Teaching Laboratories
- Research Laboratories
- Project Laboratories & Storage
- Classrooms
- Collaboration Spaces
- Circulation
- Offices
- Office Support
- Open Office
- Building Support
- Not in project scope

LEVEL TWO

LEVEL THREE

Engineering Program Legend

- Teaching Laboratories
- Research Laboratories
- Project Laboratories & Storage
- Classrooms
- Collaboration Spaces
- Circulation
- Offices
- Office Support
- Open Office
- Building Support
- Not in project scope

8.2 AERIAL AND CONCEPTUAL MASSING VIEWS

VIEW LOOKING EAST

VIEW LOOKING WEST

VIEW TOWARDS WASHINGTON STREET ENTRY

VIEW TOWARD ART WALK ENTRY

9.0 APPENDIX

9.1 PREDESIGN CHECKLIST

9.2 DAHP AND TRIBAL NOTIFICATION LETTERS

9.3 PREDESIGN STUDY PROCESS PARTICIPANTS

9.4 PRELIMINARY LEED CHECKLIST

9.5 LABORATORY DETAILED REQUIREMENTS

9.6 PRELIMINARY CONSTRUCTION COST ESTIMATE

9.7 CHENEY HALL, CEB & CADET HALL FCS REPORTS

9.8 OUTLINE SPECIFICATIONS

9.1 PREDESIGN CHECKLIST

Appendix 1: Predesign checklist and outline
A predesign should include the content detailed here. OFM will approve limited scope predesigns on a case-by-case basis.

Executive summary
Problem statement, opportunity, or program requirement

- ☑ Identify the problem, opportunity, or program requirement that the project addresses and how it will be accomplished.
- ☑ Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location, or physical accommodations. Include anticipated caseload projections (growth or decline) and assumptions, if applicable.
- ☑ Explain the connection between the agency's mission, goals, and objectives; statutory requirements; and the problem, opportunity, or program requirements.
- ☑ Describe in general terms what is needed to solve the problem.
- ☑ Include any relevant history of the project, including previous predesigns or budget funding requests that did not go forward to design or construction.

Analysis of alternatives (including the preferred alternative)

- ☑ Describe all alternatives that were considered, including the preferred alternative. Include:
- ☑ A no action alternative.
- ☑ Advantages and disadvantages of each alternative. Please include a high-level summary
- ☑ table with your analysis that compares the alternatives, including the anticipated cost for each alternative.
- ☑ Cost estimates for each alternative:
- ☑ Provide enough information so decision makers have a general understanding of the costs.
- ☑ Complete OFM's Life Cycle Cost Model (RCW 39.35B.050).
- ☑ Schedule estimates for each alternative. Estimate the start, midpoint, and completion dates.

Detailed analysis of preferred alternative

- ☑ Nature of space – how much of the proposed space will be used for what purpose (i.e., office, lab, conference, classroom, etc.)
- ☑ Occupancy numbers.
- ☑ Basic configuration of the building, including square footage and the number of floors.
- ☑ Space needs assessment. Identify the guidelines used.
- ☑ Site analysis:
  - ☑ Identify site studies that are completed or under way and summarize their results.
  - ☑ Location.
  - ☑ Building footprint and its relationship to adjacent facilities and site features. Provide aerial view, sketches of the building site and basic floorplans.
  - ☑ Water rights and water availability.
  - ☑ Stormwater requirements.
  - ☑ Ownership of the site, easements, and any acquisition issues.
  - ☑ Property setback requirements.
  - ☑ Potential issues with the surrounding neighborhood, during construction and ongoing.
  - ☑ Utility extension or relocation issues.
  - ☑ Potential environmental impacts.
  - ☑ Parking and access issues, including improvements required by local ordinances, local road impacts and parking demand.
  - ☑ Impact on surroundings and existing development with construction lay-down areas and construction phasing.
  - ☑ Consistency with applicable long-term plans (such as the Thurston County and Capitol campus master plans and agency or area master plans) as required by RCW 43.88.110.

- ☑ Consistency with other laws and regulations:
  - ☑ High-performance public buildings (Chapter 39.35D RCW).
  - ☑ State efficiency and environmental performance, if applicable (Executive Order 20-01).
  - ☑ State energy standards for clean buildings (RCW 19.27A.210).
  - ☑ Compliance with required vehicle charging capability for new buildings that provide on-site parking (RCW 19.27.540).
  - ☑ Greenhouse gas emissions reduction policy (RCW 70.235.070).
  - ☑ Archeological and cultural resources (Executive Order 21-02 and Section 106 of the National Historic Preservation Act of 1966). If mitigation is anticipated, please note this in the predesign with narrative about how mitigation is worked into the project schedule and budget.
  - ☑ Americans with Disabilities Act (ADA) implementation (Executive Order 96-04).
  - ☑ Compliance with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.
  - ☑ Information required by RCW 43.88.0301(1).
  - ☑ Other codes or regulations.
- ☑ Identify problems that require further study. Evaluate identified problems to establish probable costs and risk.
- ☑ Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.
- ☑ Identify planned technology infrastructure and other related IT investments that affect the building plans.
- ☑ Identify any site-related and/or physical security measures for the project.
- ☑ Describe planned commissioning to ensure systems function as designed.
- ☑ Describe any future phases or other facilities that will affect this project, including impacts to current lease contracts. Include detail on the need to backfill space or cost assumptions for vacant space.
- ☑ Provide a comparative discussion of the pros and cons of the project delivery methods considered for this project and offer a recommendation of proposed procurement method for the preferred alternative. The proposed method of project delivery must be justified.
- ☑ Describe how the project will be managed within the agency.
- ☑ Schedule.
- ☑ Provide a high-level milestone schedule for the project, including key dates for budget
- ☑ approval, design, bid, acquisition, construction, equipment installation, testing, occupancy and full operation.
- ☑ Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).
- ☑ Describe factors that may delay the project schedule.
- ☑ Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
- ☑ Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are a part of the process.

Project budget analysis for the preferred alternative

- ☑ Cost estimate.
  - ☑ Major assumptions used in preparing the cost estimate.
  - ☑ Summary table of Uniformat Level II cost estimates.
  - ☑ The C-100.
- ☑ Proposed funding.
  - ☑ Identify the fund sources and expected receipt of the funds.
  - ☑ If alternatively financed, such as through a COP, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.
- ☑ Facility operations and maintenance requirements.
  - ☑ Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs) and moving costs.
  - ☑ Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repair, replacement, and maintenance.
  - ☑ Identify the agency responsible for ongoing maintenance and operations, if not maintained by the owner.
- ☑ Clarify whether furniture, fixtures and equipment are included in the project budget. If not included, explain why.

Predesign appendices

- ☑ Completed Life Cycle Cost Model.
- ☑ A letter from DAHP.
- ☑ Title report for projects including proposed acquisition.

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9.2 DAHP AND TRIBAL NOTIFICATION LETTERS

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 13, 2024

Troy Bester
Eastern Washington University

In future correspondence please refer to:
Project Tracking Code: 2020-06-04168
Property: EWU Engineering Building
Re: More Information Needed, Survey Requested

Dear Troy:

Thank you for contacting the Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Office (SHPO) under provisions of Governor's Executive Order 21-02. Our review is based upon documentation provided in your submittal. We understand this request is only regarding the predesign of the project, and appreciate you consulting with DAHP early on in project development.

In order to complete our review, we request an intensive level survey of Cadet Hall. Cadet Hall is proposed to be demolished as part of the project scope and has not been surveyed for eligibility to the National Register of Historic Places. Cadet Hall was built in 1956 and may be significant for its association with the successful ROTC program at EWU.

Before we can assess project impact on historic resources, we need to know what historic resources are present in the project area. An intensive-level survey and updated Historic Property Inventory Form completed by a Secretary of the Interior Qualified Architectural Historian will assist us in making this determination.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in conformance with Executive Order 21-02. Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

State of Washington • **Department of Archaeology & Historic Preservation**
P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065
www.dahp.wa.gov

Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Jill Maria Wagner, PhD
Tribal Historic Preservation Officer
Coeur d'Alene Tribe

RE: Propose Project at Eastern Washington University
Engineering Building
EWU Project No. CP1141

Dr. Wagner:

This letter is to notify you of a proposed Engineering Building, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

The proposed new building will be connected to the Computing and Engineering Building (CEB) to address current facility deficiencies and meet the future needs of the proposed civil engineering academic program. The 82,522 GSF building will accommodate hands-on teaching and research laboratories, lab support facilities, student meeting and study areas, and faculty offices. Additionally, 42,411 GSF of the CEB and nearby Cheney Hall will be modified to support the program.

The initial site proposed for construction is on the south side of CEB, which necessitates the demolition of Cadet Hall and an adjacent parking lot. Built in 1955, Cadet Hall currently houses the ROTC program for the EWU campus, which will be relocated to another facility on campus. EWU will perform an Intensive-level survey and updated Historic Property Inventory Form for Department of Archaeology and Historic Preservation (DAHP) prior to design. Sitework for the project will include providing utilities from a proposed nearby geothermal plant, as well as paving parking areas and landscaping. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

Troy Bester
Senior Project Manager

Attachments:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Mr. Guy Moura
Tribal Historic Preservation Officer
Confederated Tribes of the Colville Reservation

RE: Propose Project at Eastern Washington University
Engineering Building
EWU Project No. CP1141

Mr. Moura:

This letter is to notify you of a proposed Engineering Building, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

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EWU expands opportunities for personal transformation through excellence in learning.

Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Mr. Randy Abrahamson
Tribal Historic Preservation Officer
Spokane Tribe of Indians

RE: Propose Project at Eastern Washington University
Engineering Building
EWU Project No. CP1141

Mr. Abrahamson,

This letter is to notify you of a proposed Engineering Building, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

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Sincerely,

Troy Bester
Senior Project Manager

Attachments:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

9.3 PREDESIGN STUDY PROCESS PARTICIPANTS

EASTERN WASHINGTON UNIVERSITY

EWU ENGINEERING DEPARTMENT
David Bowman, Dean, College of Science, Technology, Engineering, and Mathematics
Jennifer Waldo, Associate Dean, College of Science, Technology, Engineering, and Mathematics

2024 Faculty Participants
Jason Durfee, Department Chair & Professor, MENT, MET Program Coordinator
Richard Orndorff, Professor, Geosciences
Chad Pritchard, Professor, Geosciences
Awlad Hossain, Professor, ME, MET, ME Program Coordinator
Jennifer Leaf, Assistant Professor, ME
Troy Krumrey, Lecturer, Manufacturing/Technology, Construction
Joe Stoutimore, Engineering Technician 2

2020 Faculty Participants
Martin Weiser, Department Chair & Associate Professor, ME & MET
Terence Geyer, Senior Lecturer, Applied Technology, Technology/Manufacturing
Rusty Hallin, Lecturer, Applied Technology, Technology/Manufacturing
James S. McCuistion, Lecturer, Distance Education & Technology
Donald Richter, Professor, ME, MET & Technology/Manufacturing
Gary Weber, Lecturer, ME & MET

EWU FACILITIES AND PLANNING
Kris Jeske, Director, Construction & Planning
Troy Bester, Senior Project Manager

DESIGN TEAM

LMN Architects (Architect)
Jennifer DuHamel
Jennifer Milliron
Rachel Dinkel
Kjell Anderson
Stephen Van Dyck

Research Facilities Design (Laboratory Planner)
Terry D. Brown
Jeff R. Schulien

Saiful Bouquet (Structural Engineer)
Saiful Islam
YK Low

Coughlin Porter Lundeen (Civil Engineer)
Tim Brockway
Ken Wiersema

MW Consulting Engineers (Mech/Elec Engineer)
Anthony Schoen
Joel Enevold
Kjersten Khuta

Roen Associates (Cost Estimator)
Dan Deymonaz
Jovelyn Limbag

9.4 PRELIMINARY LEED CHECKLIST

LEED

Washington State requires sizable capital projects to achieve a minimum of LEED Silver. Several projects at EWU have achieved LEED Gold.

LEED v4/v4.1 for BD+C: New Construction and Major Renovation
Project Checklist

Y	?	N			
1			Credit	Integrative Process	1

7	9	16	Location and Transportation		16
		16	Credit	LEED for Neighborhood Development Location	16
	1		Credit	Sensitive Land Protection	1
	2		Credit	High Priority Site	2
3	2		Credit	Surrounding Density and Diverse Uses	5
3	2		Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
	1		Credit	Green Vehicles	1

5	5	0	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
1	1		Credit	Site Development - Protect or Restore Habitat	2
	1		Credit	Open Space	1
1	2		Credit	Rainwater Management	3
1	1		Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

6	5	0	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1	1		Credit	Outdoor Water Use Reduction	2
4	2		Credit	Indoor Water Use Reduction	6
	2		Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

15	18	0	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
3	3		Credit	Enhanced Commissioning	6
10	8		Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
	2		Credit	Demand Response	2
	3		Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	2		Credit	Green Power and Carbon Offsets	2

7	**6**	**0**	**Materials and Resources**		**13**
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
3	2		Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
1	1		Credit	Construction and Demolition Waste Management	2

8	**8**	**0**	**Indoor Environmental Quality**		**16**
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
1	1		Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
	3		Credit	Daylight	3
	1		Credit	Quality Views	1
	1		Credit	Acoustic Performance	1

4	**2**	**0**	**Innovation**		**6**
3	2		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

3	**1**	**0**	**Regional Priority**		**4**
1			Credit	Regional Priority: Water Use Reduction (40%)	1
1			Credit	Regional Priority: Construction IAQ Plan	1
1			Credit	Regional Priority: BPDO - EPD	1
	1		Credit	Regional Priority: Specific Credit	1

56	**54**	**16**	**TOTALS**	Possible Points: **110**

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

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DETAILED SPACE REQUIREMENTS

Laboratory & Support

LMN / RFD

Eastern Washington University

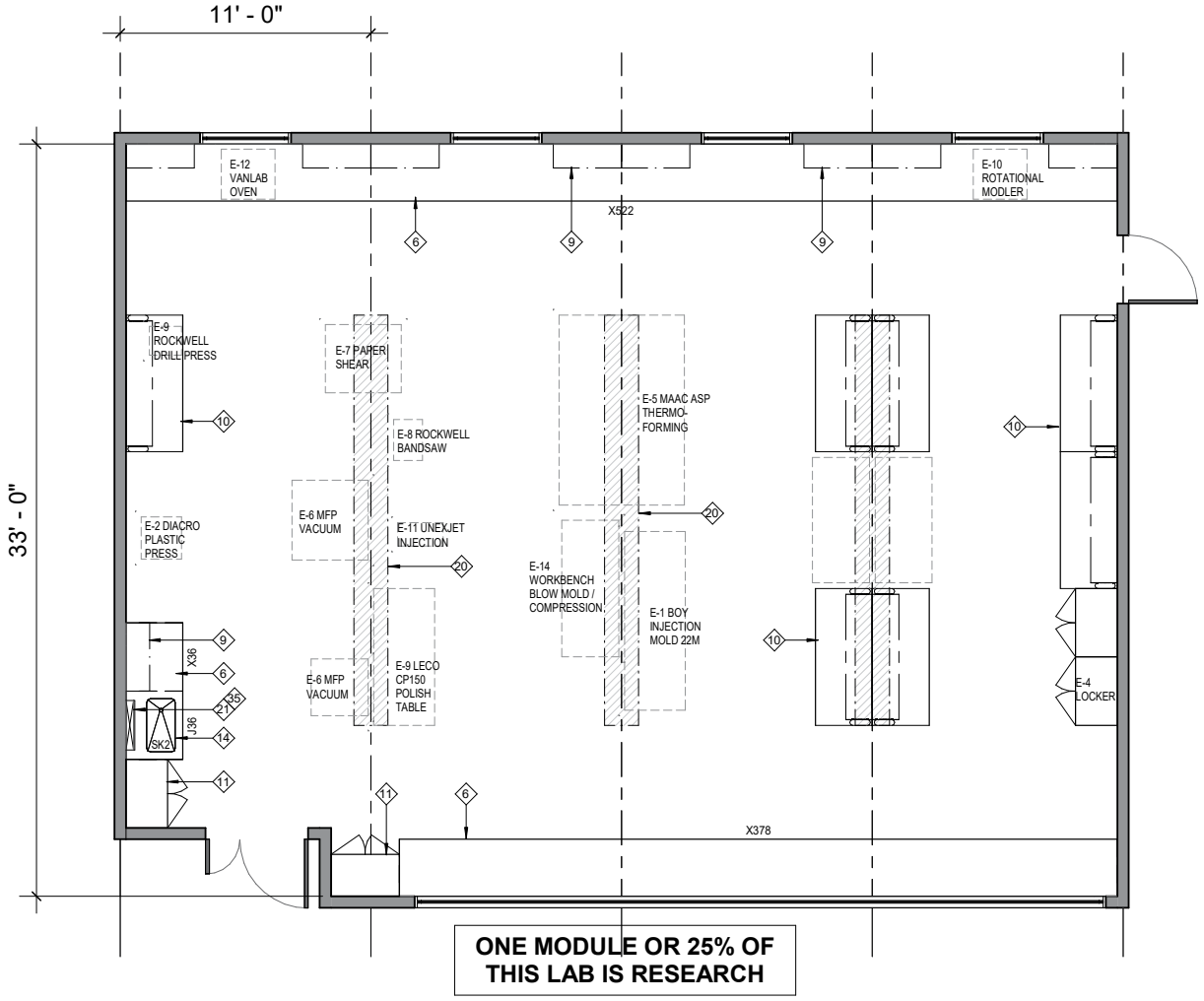
DEPARTMENT: ME

SPACE NAME: PLASTICS LAB

SPACE ID NO: 2.01 CHN

AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME
SPACE NAME: PLASTICS LAB

SPACE ID NO: 2.01 CHN
AREA NSF: 1,452

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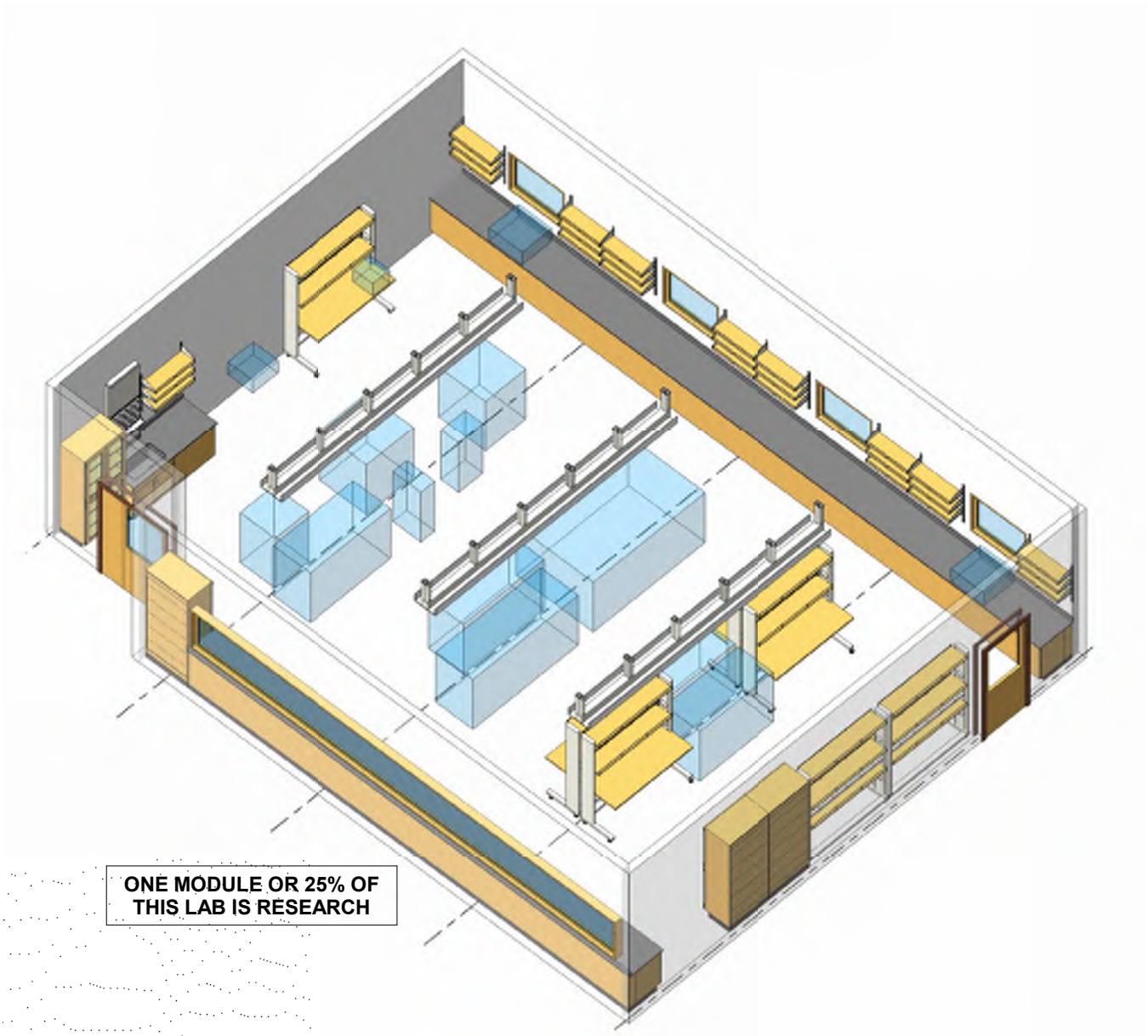

DEPARTMENT: ME **SPACE ID NO: 1.03 EB**
SPACE NAME: HVAC TEACHING LAB **AREA NSF: 1,452**

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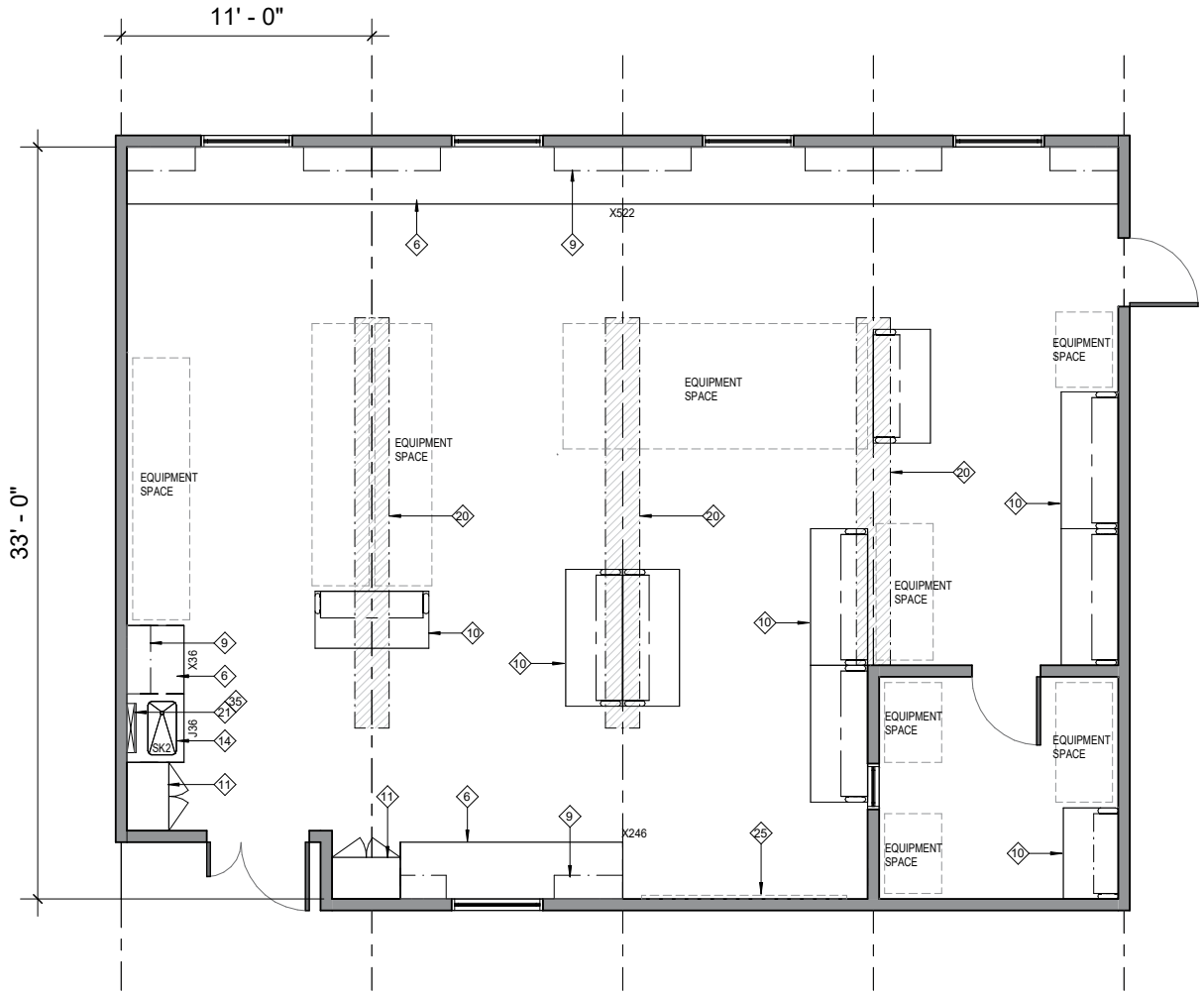

FURNISHINGS

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DEPARTMENT: ME
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SPACE ID NO: 1.03 EB
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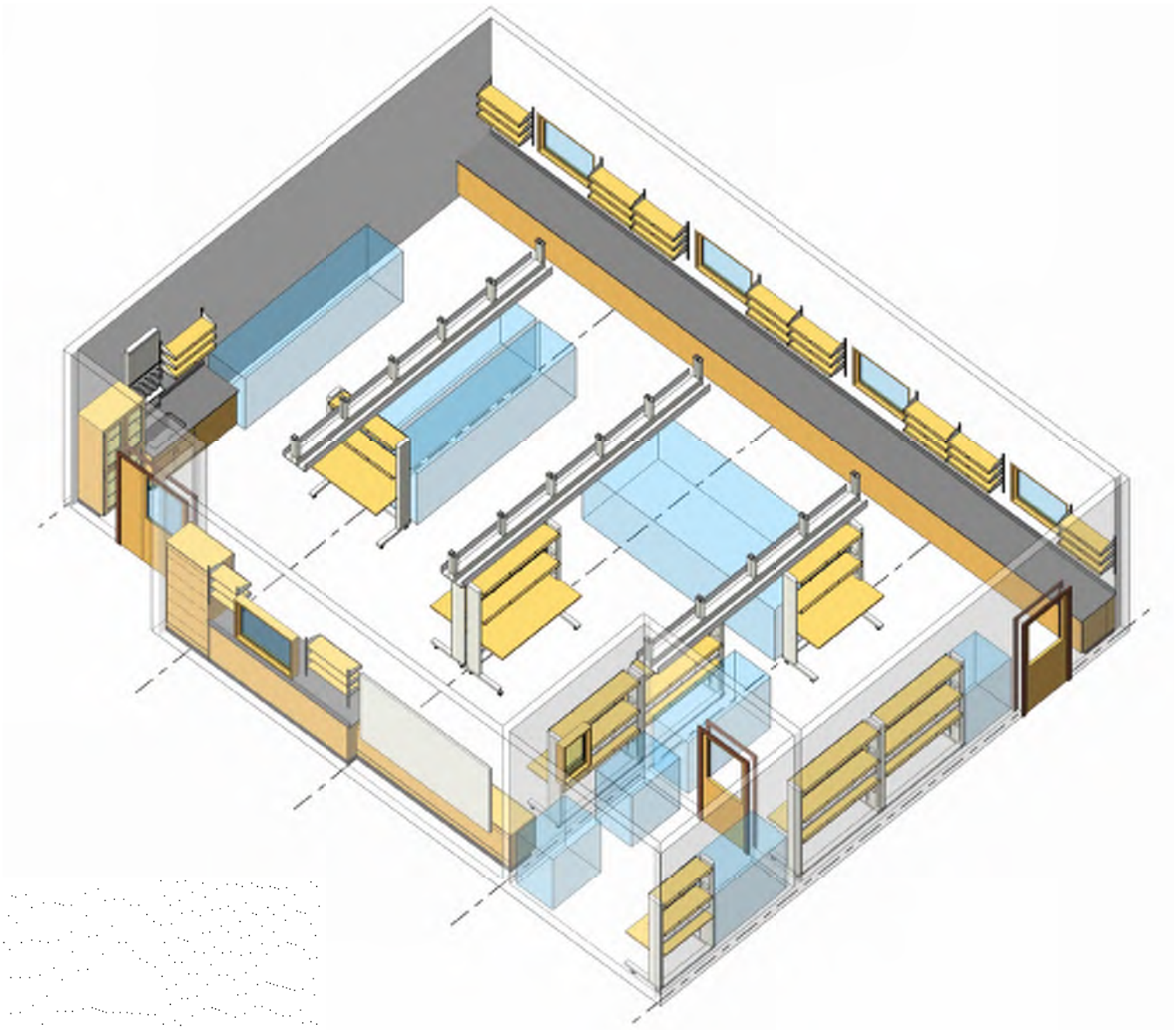
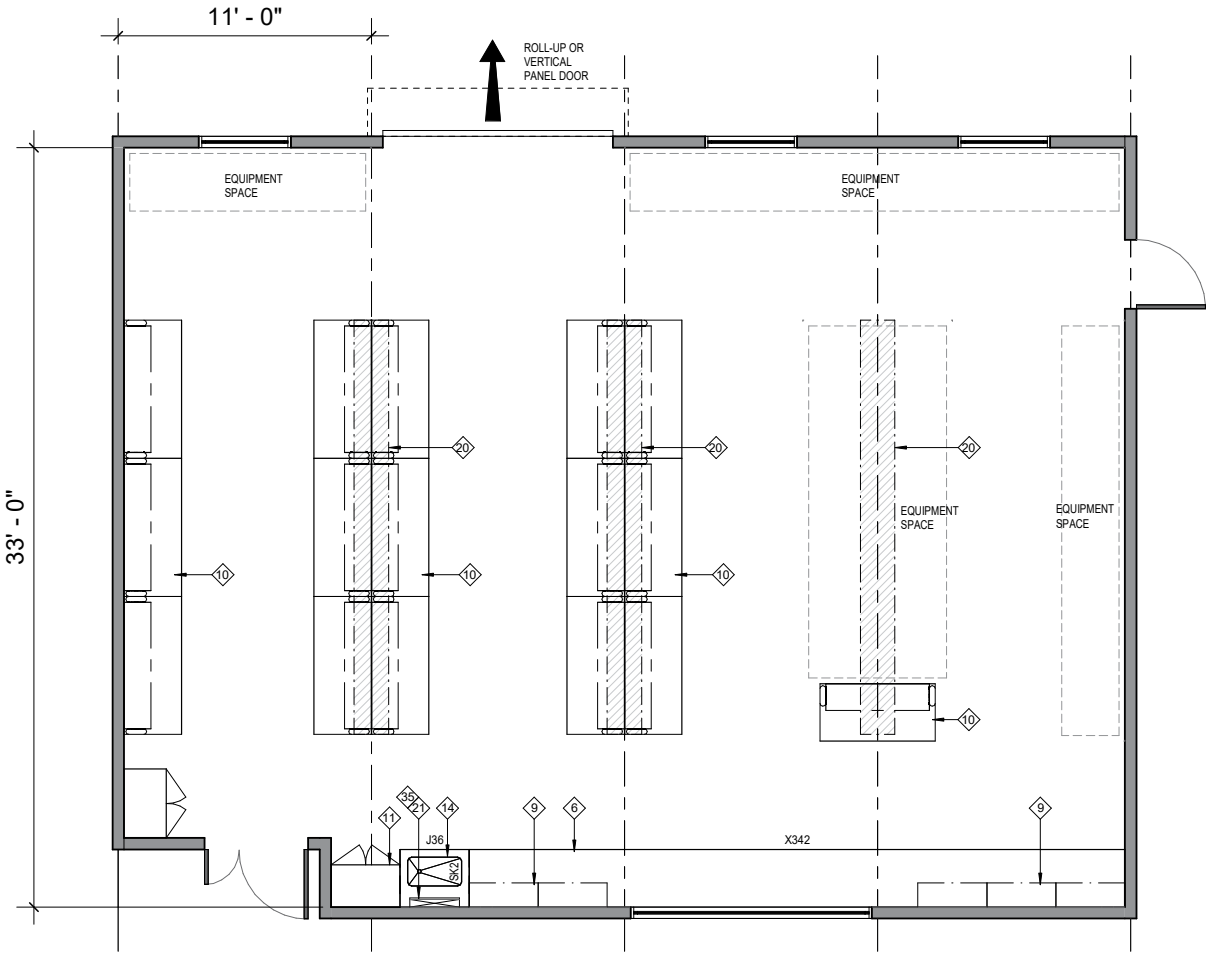


DEPARTMENT: ME **SPACE ID NO: 1.13 EB**
SPACE NAME: ME/MET PROJECTS LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

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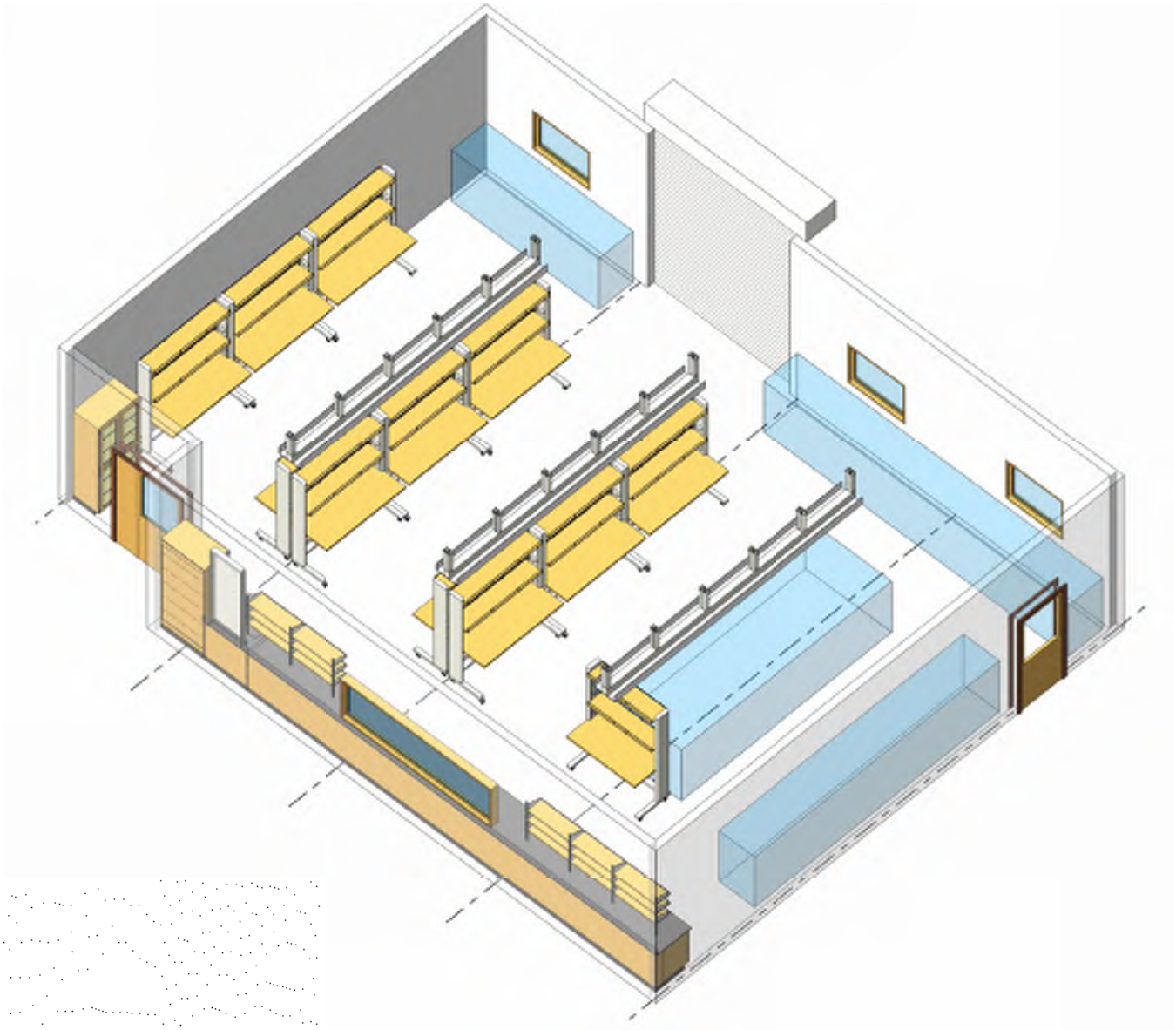
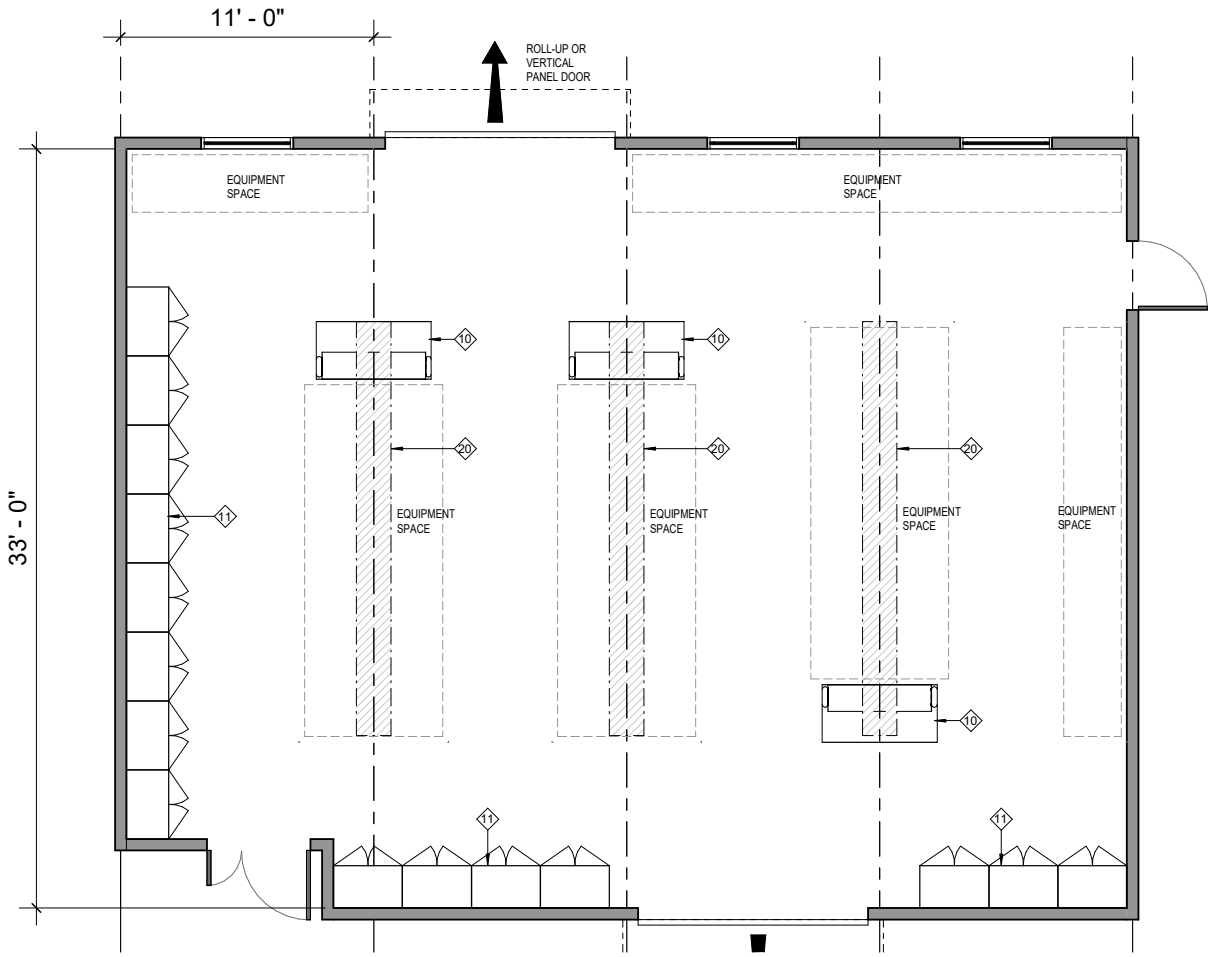


DEPARTMENT: ME **SPACE ID NO: 1.14 EB**
SPACE NAME: ME/METS PROJECT STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

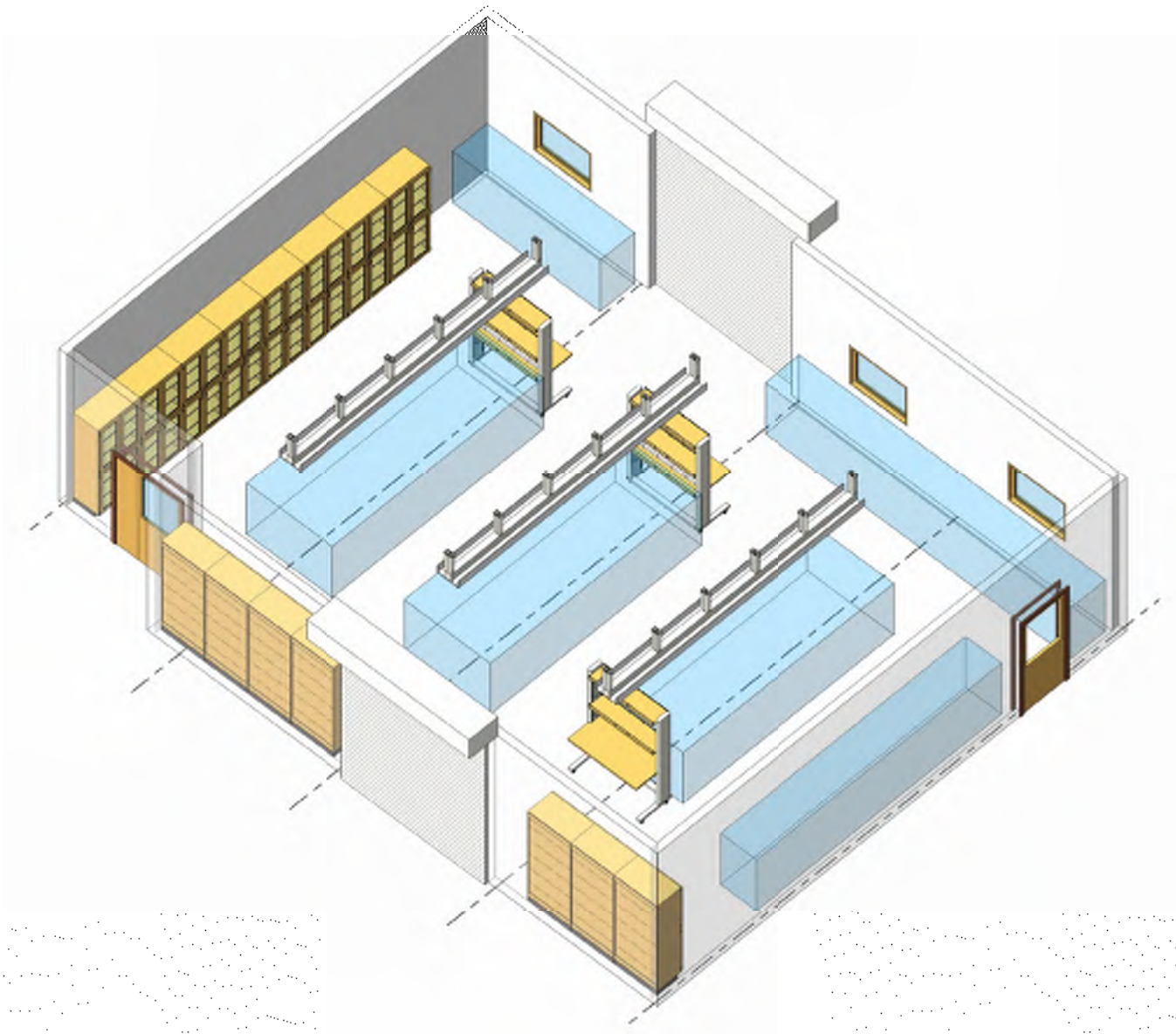


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

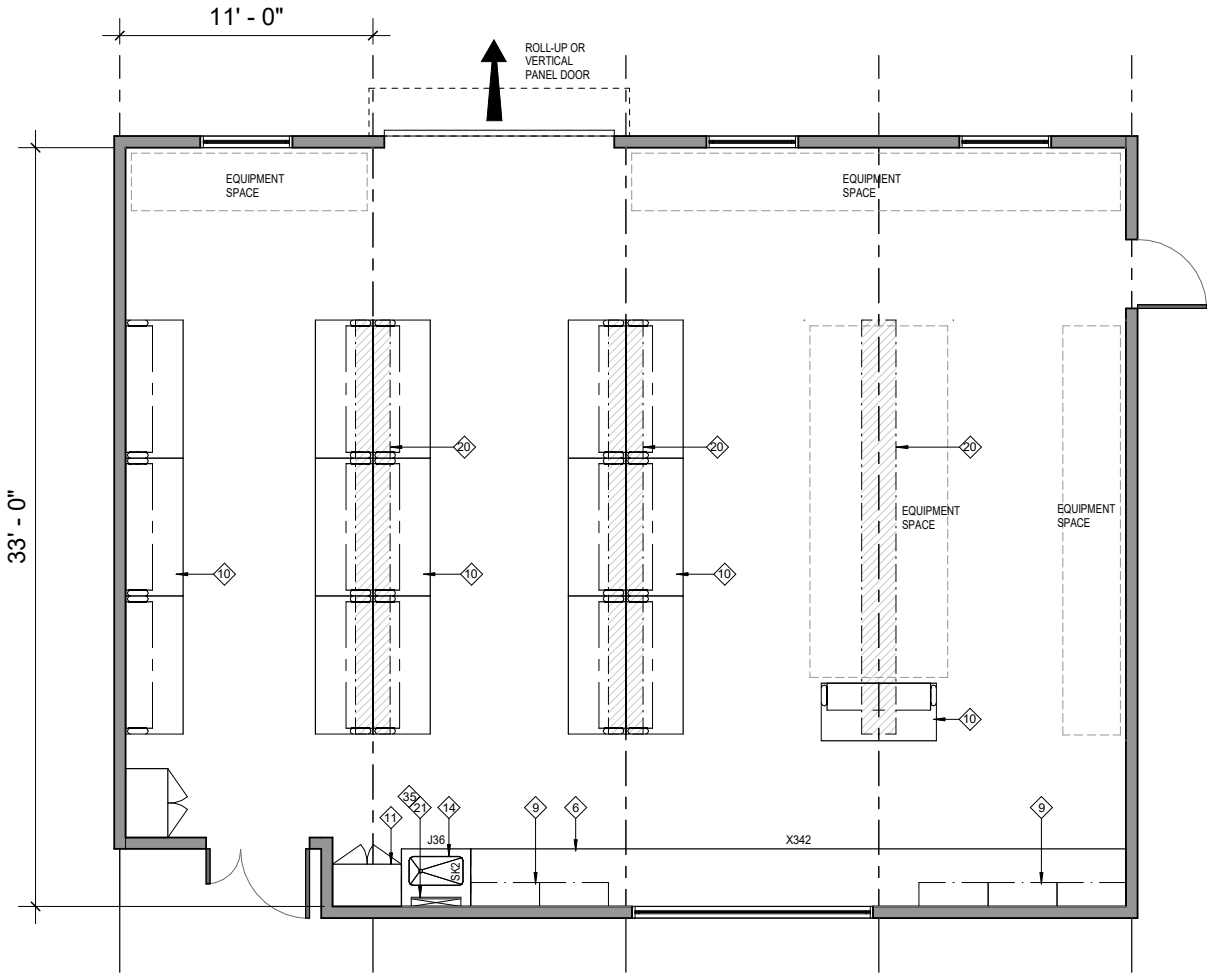
DEPARTMENT: ME **SPACE ID NO: 1.14 EB**
SPACE NAME: ME/METS PROJECT STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.15 EB**
SPACE NAME: TECH PROJECTS LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



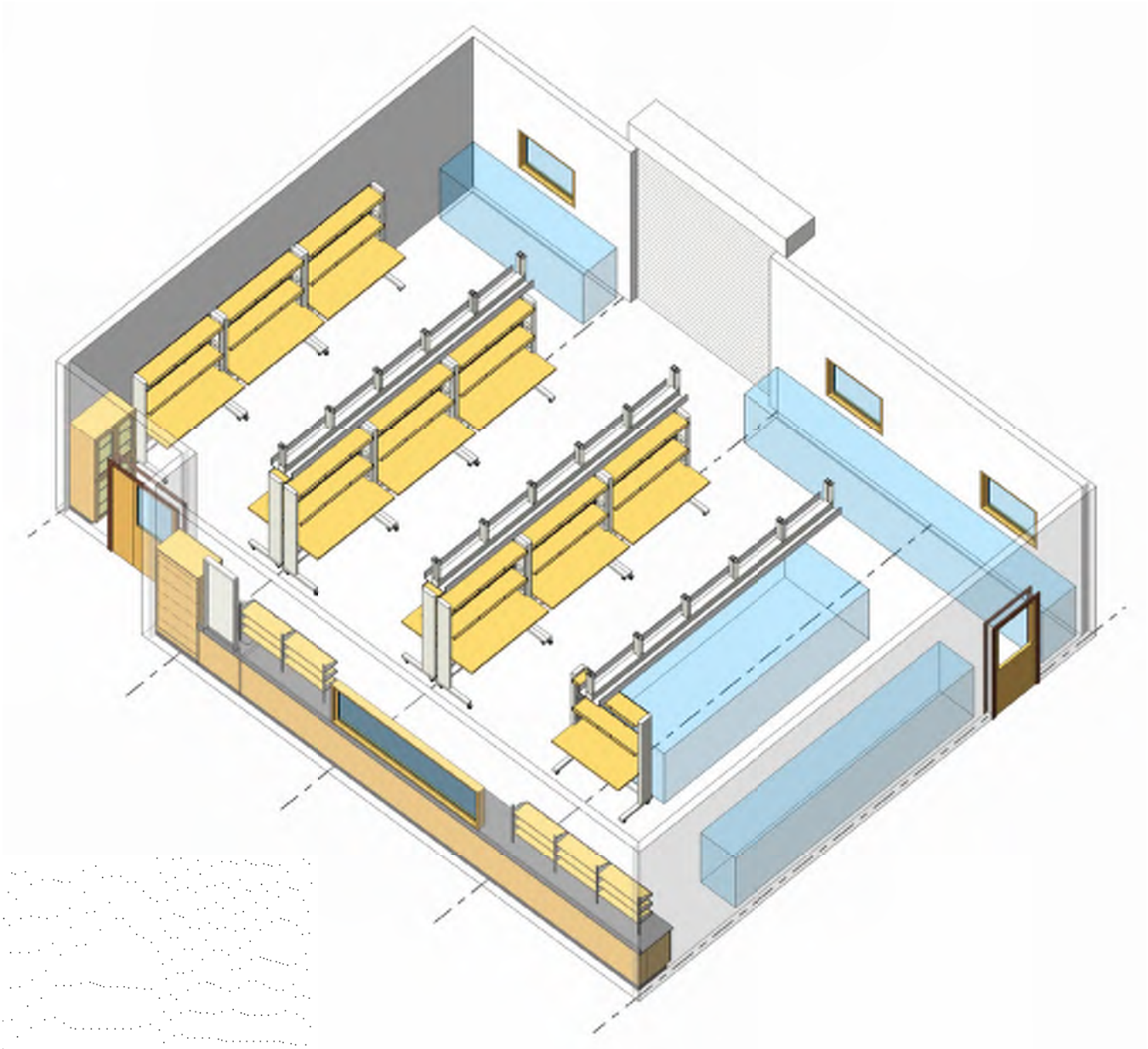
0' 2' 4' 8'
1/8" = 1'-0"

FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

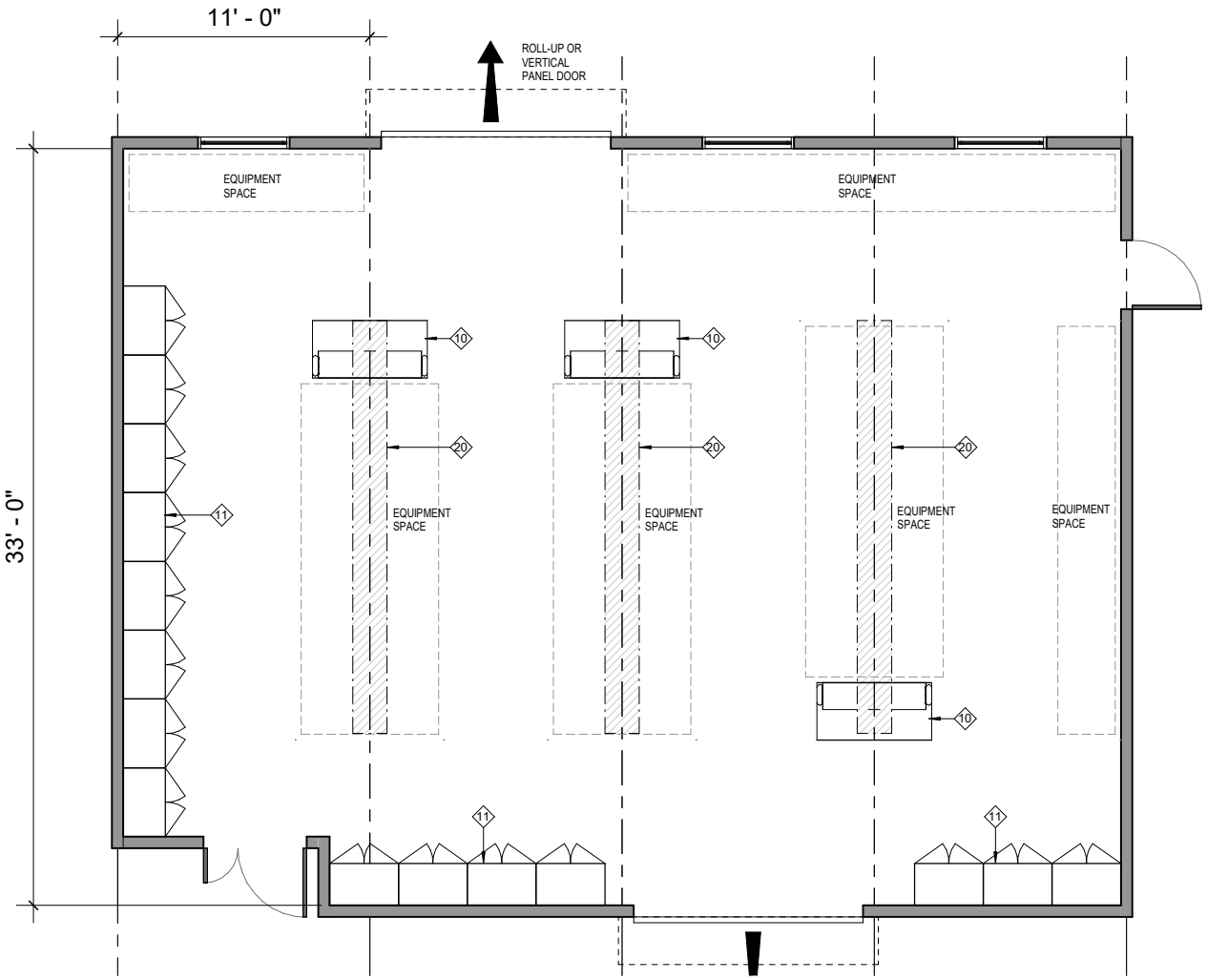
DEPARTMENT: ME **SPACE ID NO: 1.15 EB**
SPACE NAME: TECH PROJECTS LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.16 EB**
SPACE NAME: TECH PROJECT STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

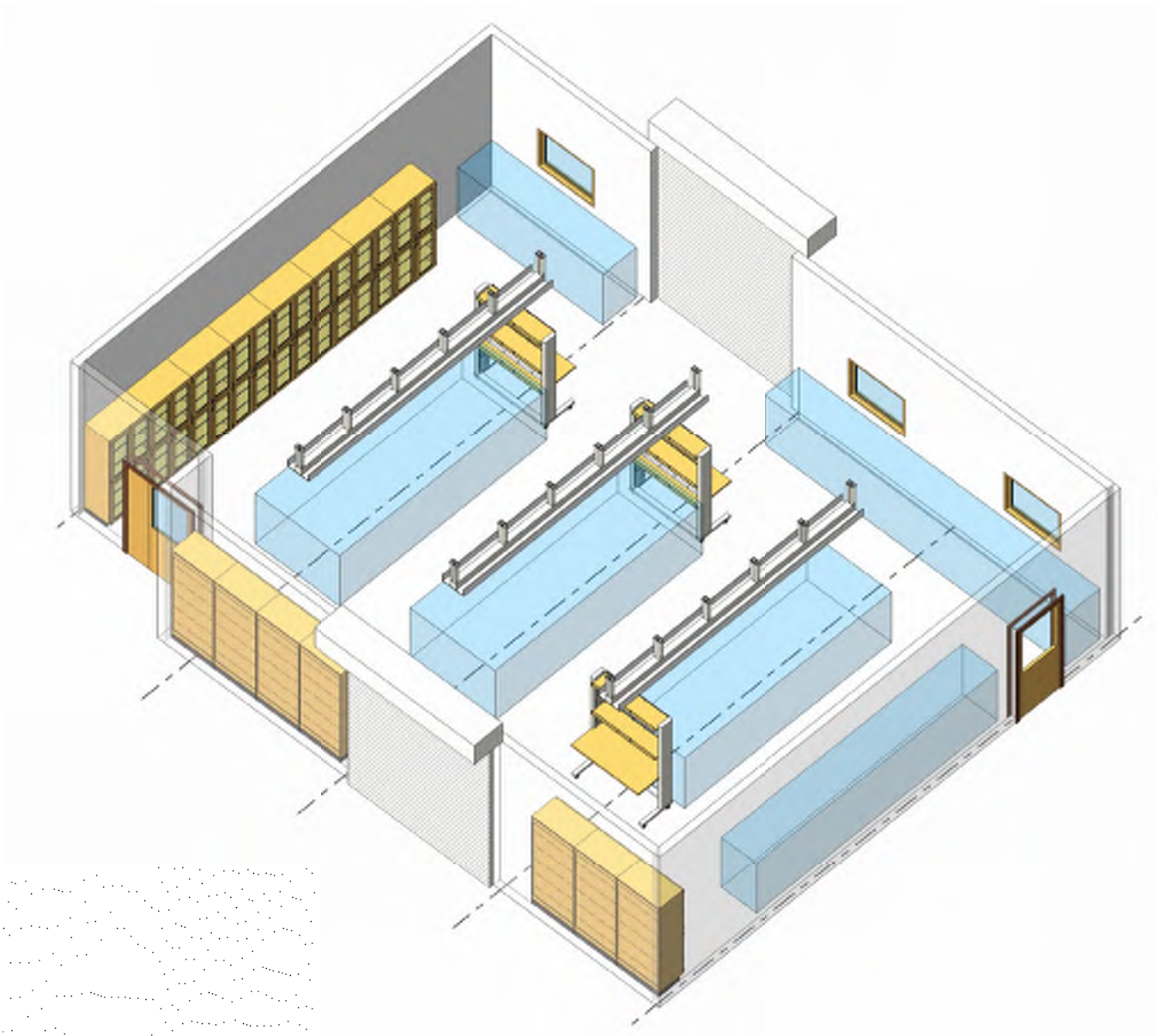


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

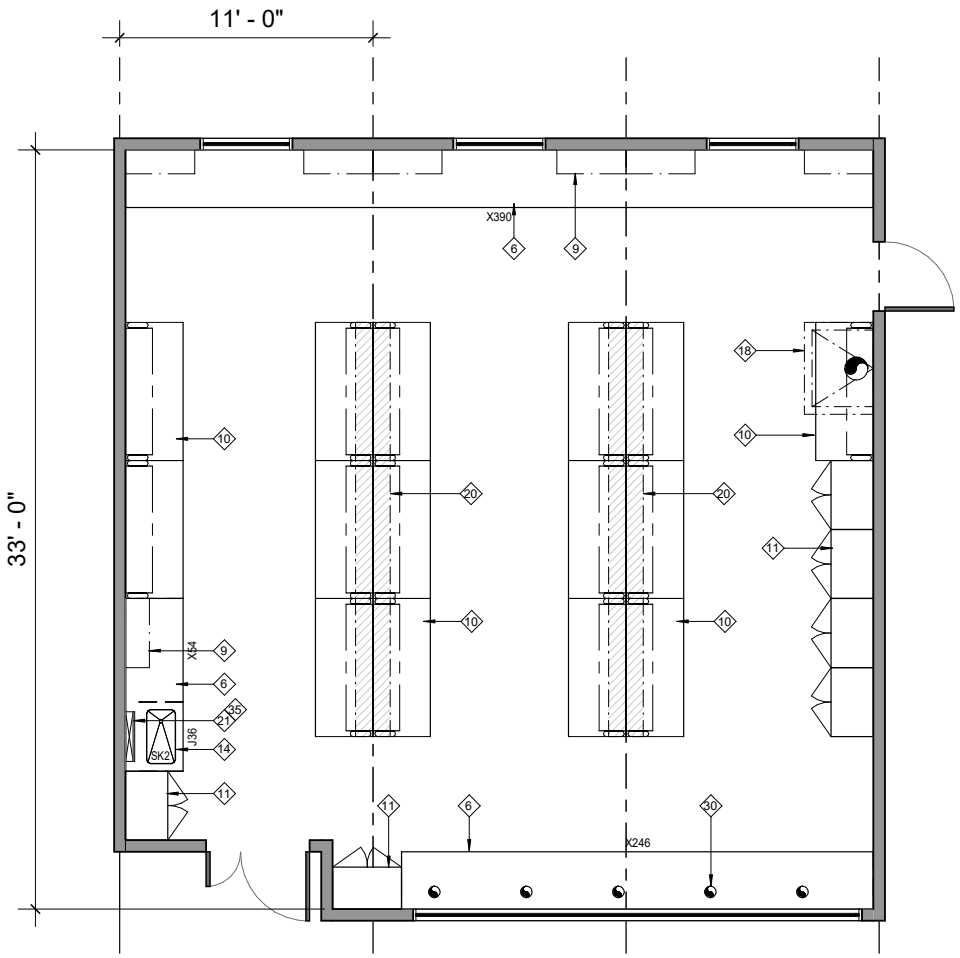
DEPARTMENT: ME **SPACE ID NO: 1.16 EB**
SPACE NAME: TECH PROJECT STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.18 EB**
SPACE NAME: MAKER SPACE **AREA NSF: 1,089**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



0' 2' 4' 8'
1/8" = 1'-0"

FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
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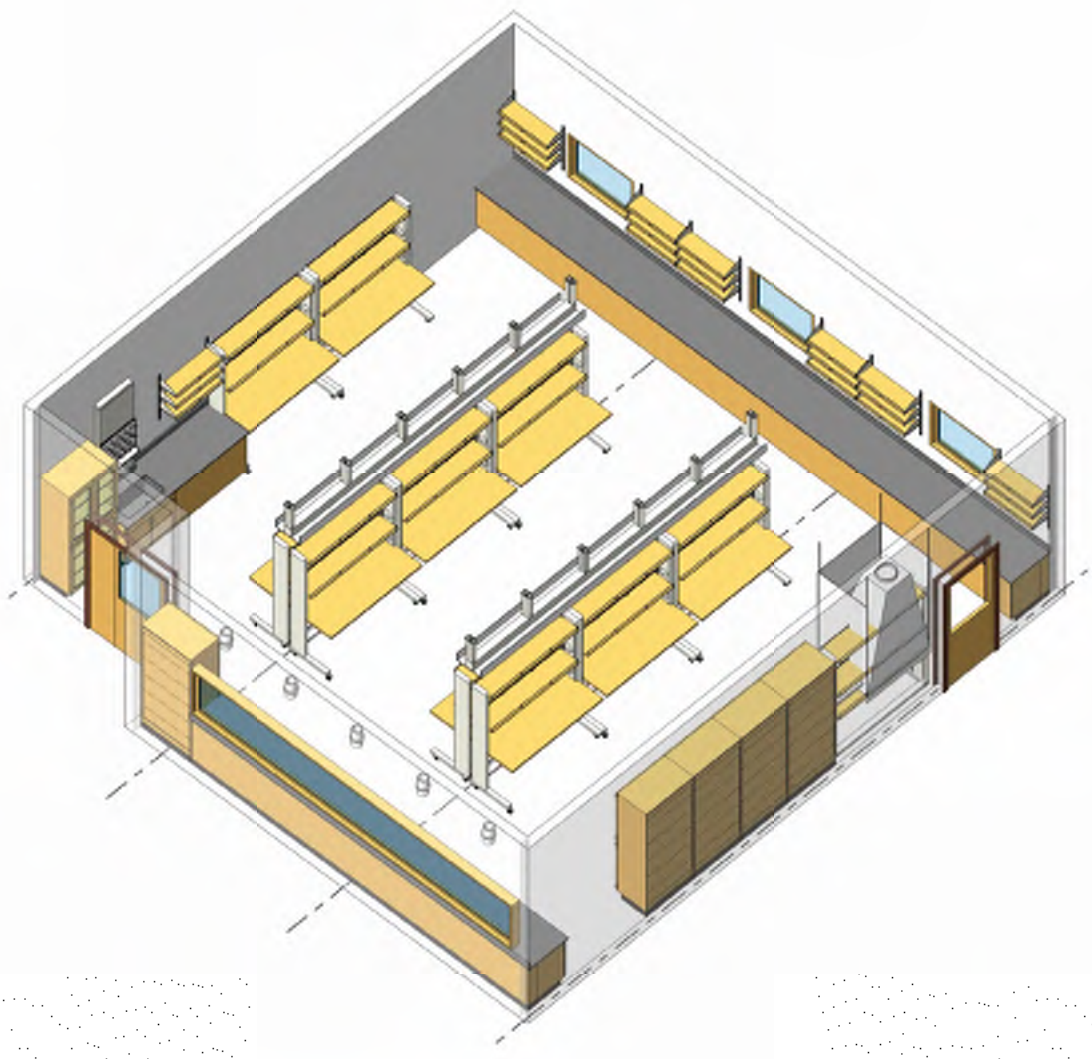
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME **SPACE ID NO: 1.18 EB**
SPACE NAME: MAKER SPACE **AREA NSF: 1,089**

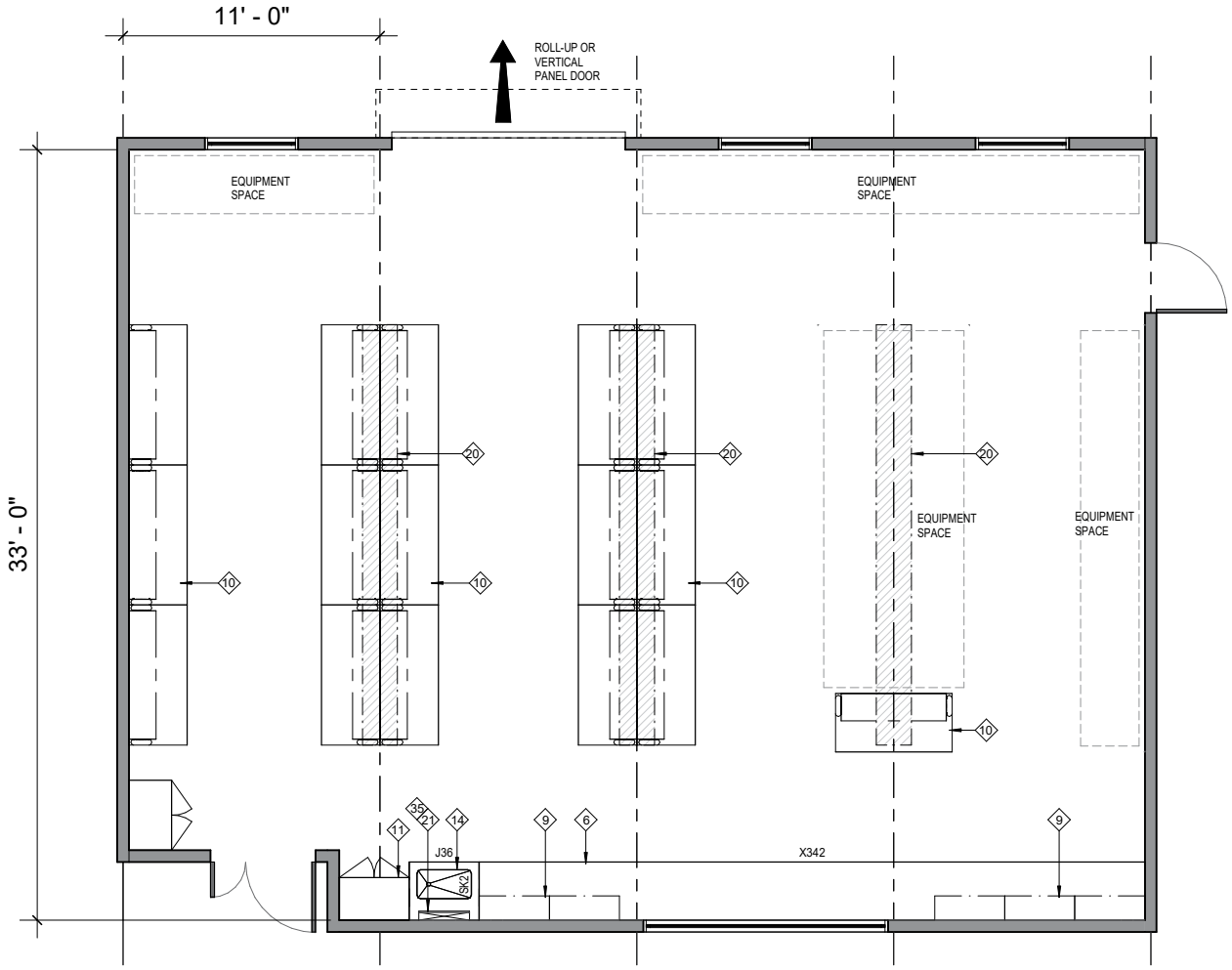
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: CLUB ROOM LAB

SPACE ID NO: 1.17 EB
AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

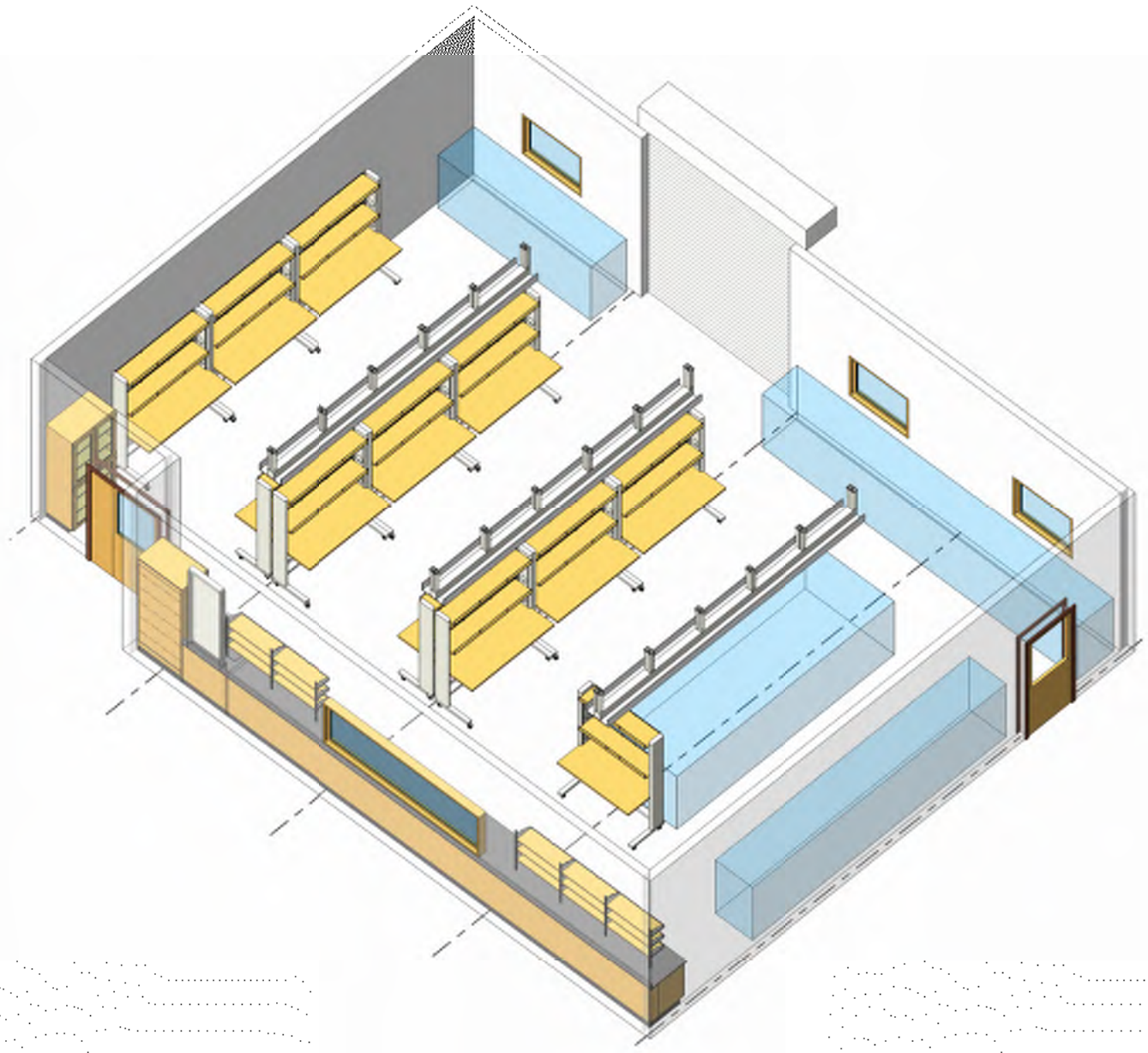


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME
SPACE NAME: CLUB ROOM LAB
SPACE ID NO: 1.17 EB
AREA NSF: 1,452

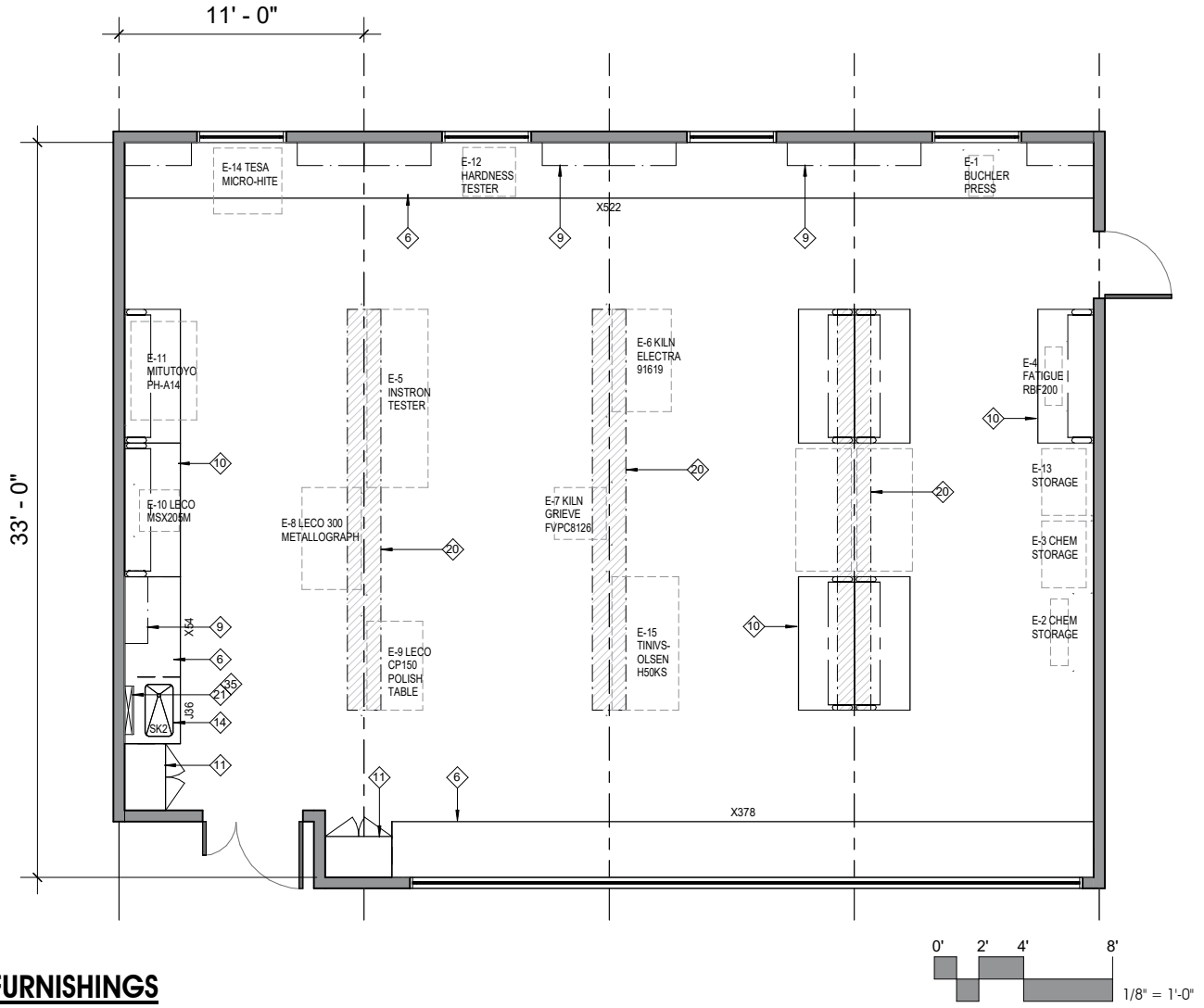
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: MATERIAL SCIENCE

SPACE ID NO: 1.04 CEB
AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

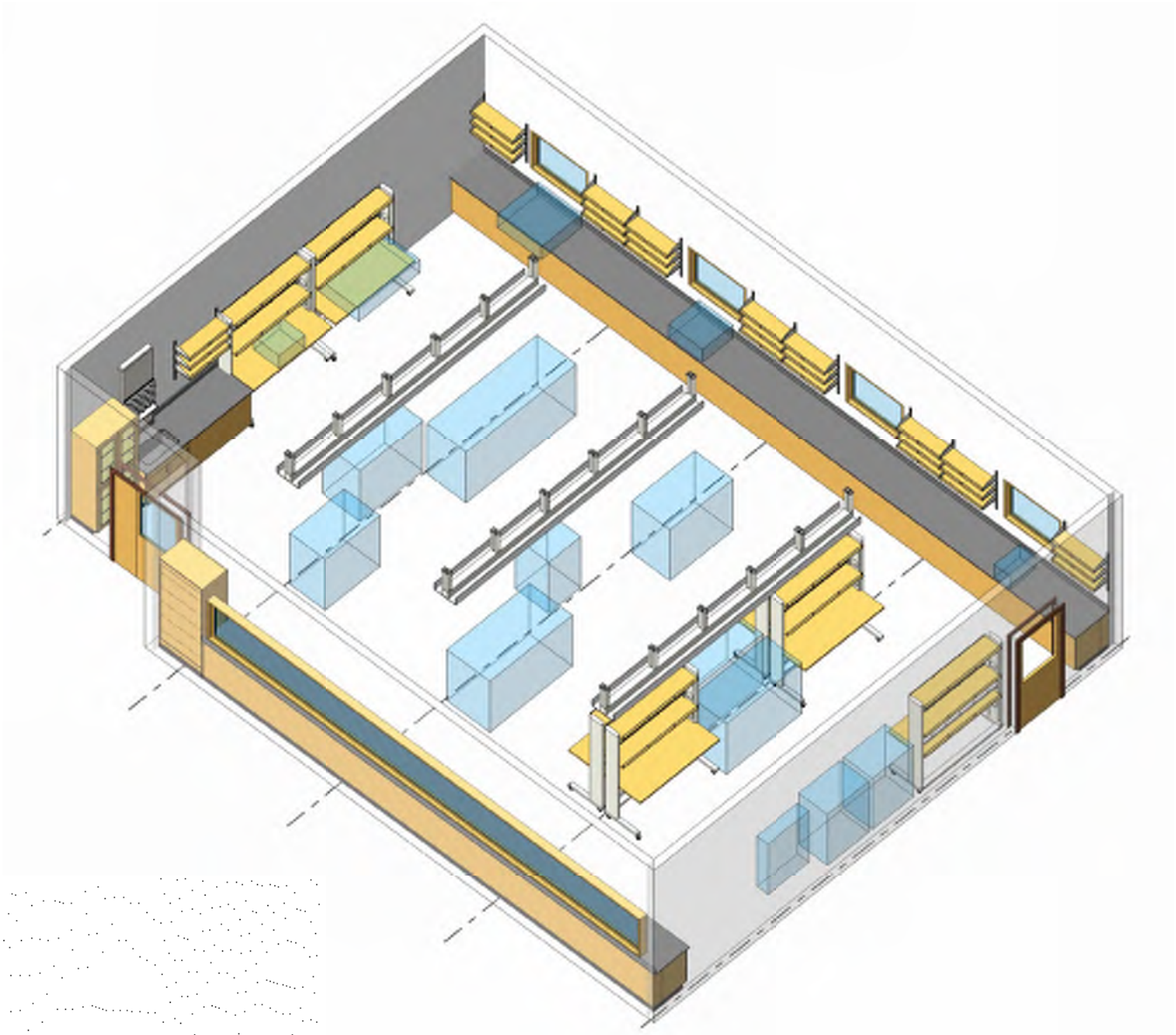


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME **SPACE ID NO: 1.04 CEB**
SPACE NAME: MATERIAL SCIENCE **AREA NSF: 1,452**

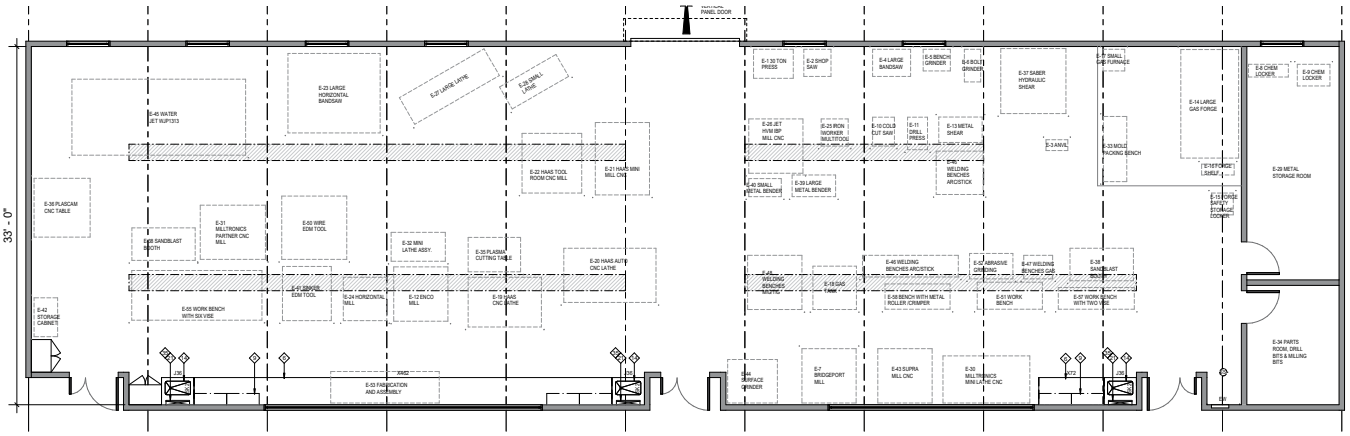
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: METALLICS LAB

SPACE ID NO: 1.02 EB
AREA NSF: 3,993

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



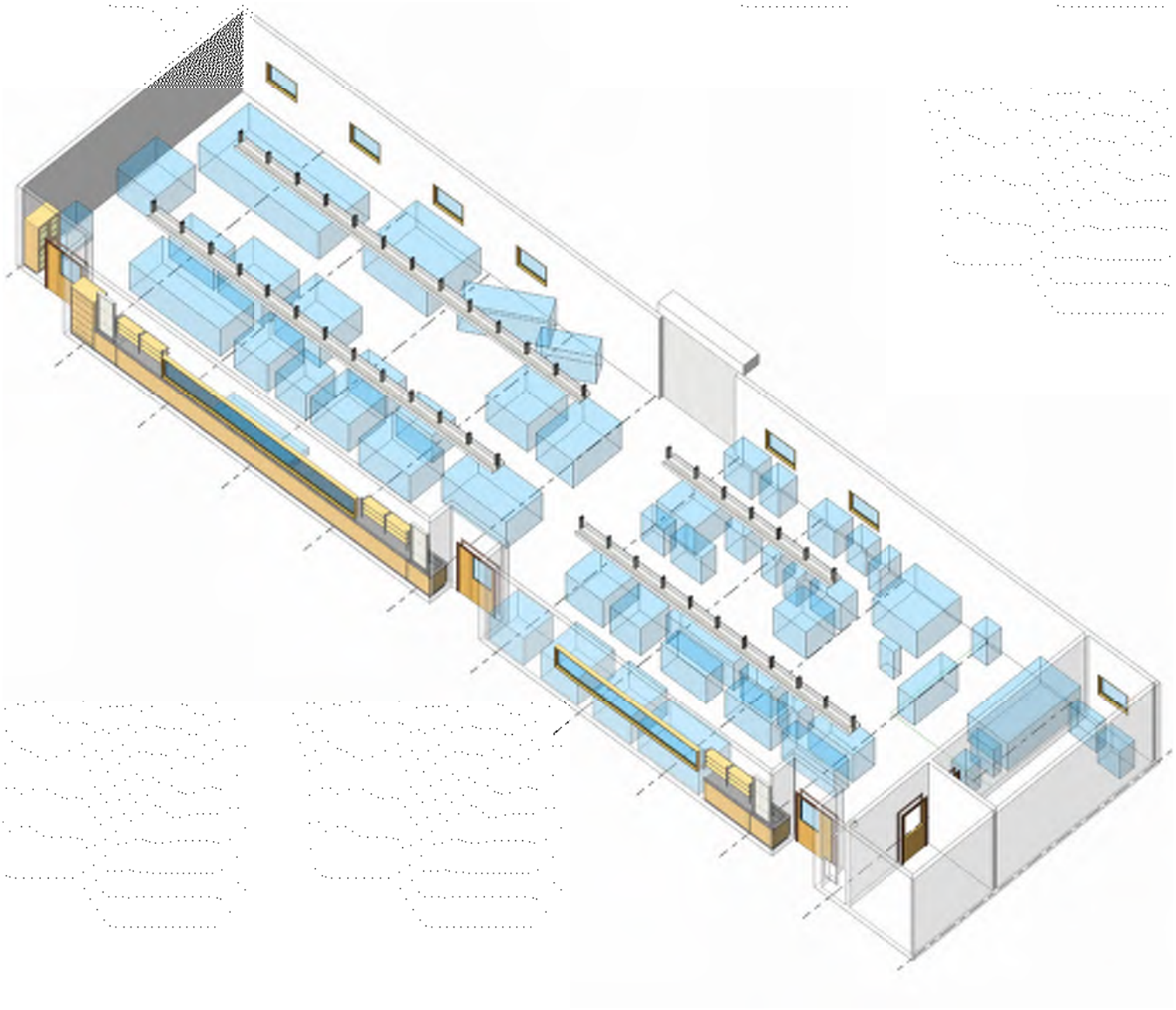
FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

DEPARTMENT: ME
SPACE NAME: METALLICS LAB

SPACE ID NO: 1.02 EB
AREA NSF: 3,993

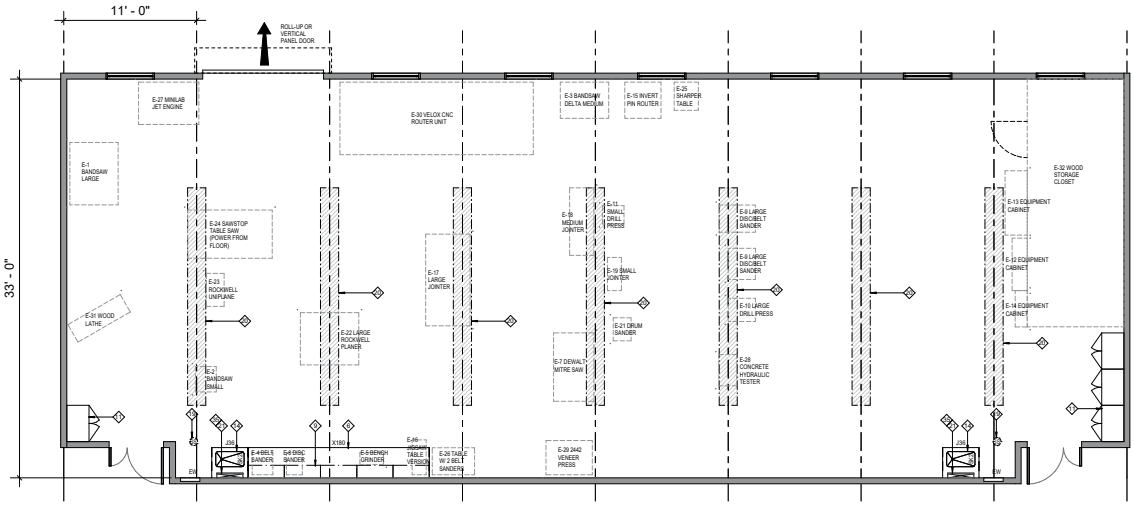
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: WOOD SHOP

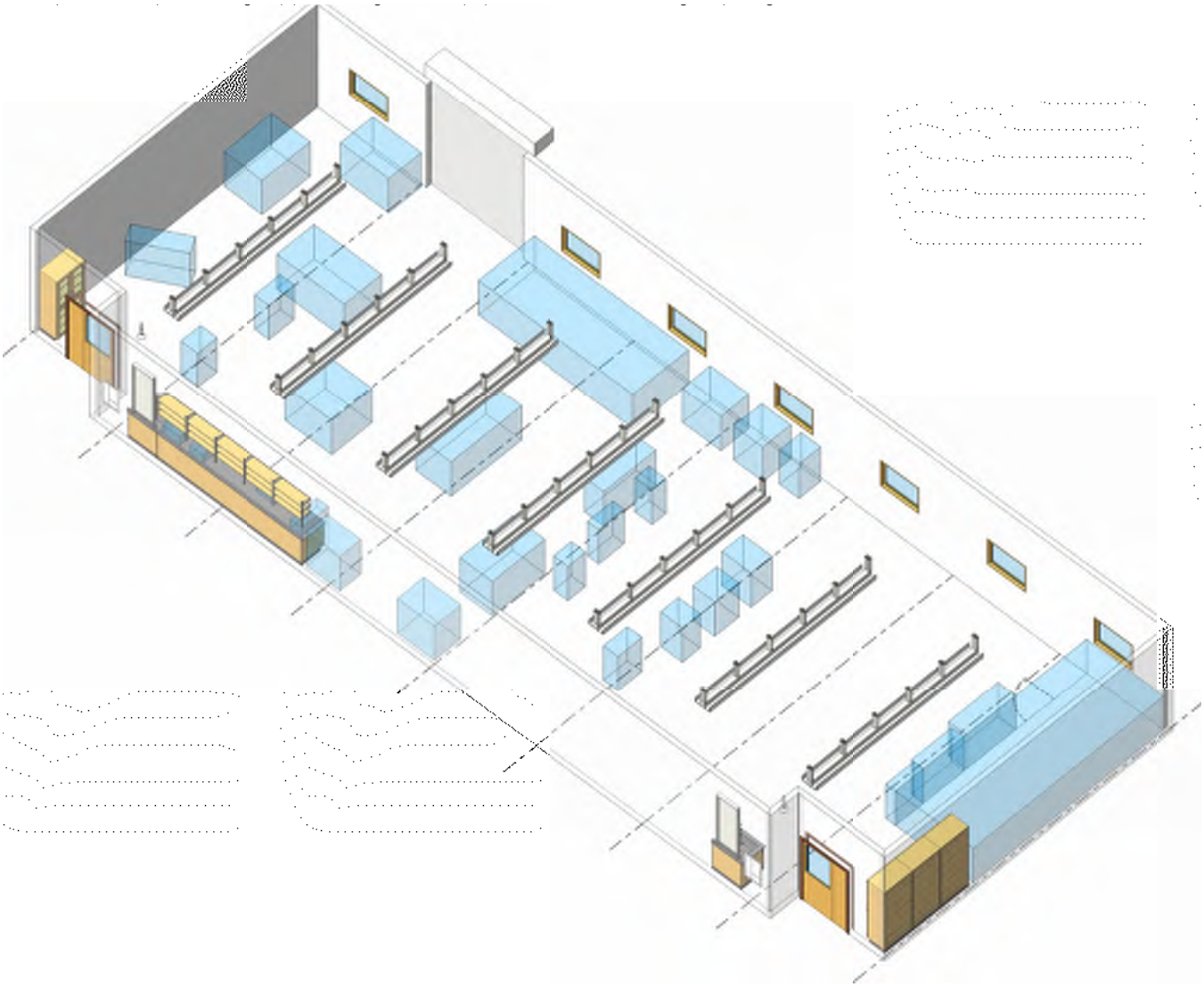
SPACE ID NO: 1.01 EB
AREA NSF: 2,904

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 1.01 EB**
SPACE NAME: WOOD SHOP **AREA NSF: 2,904**

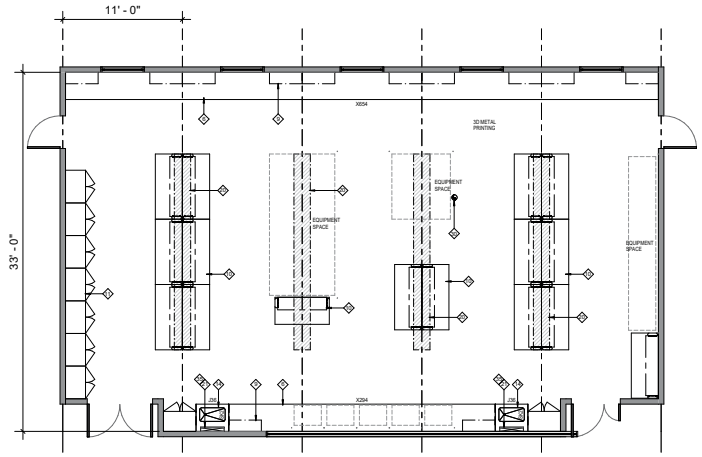
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: ADDITIVE MANUFACTURING

SPACE ID NO: 1.03 CEB
AREA NSF: 1,815

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

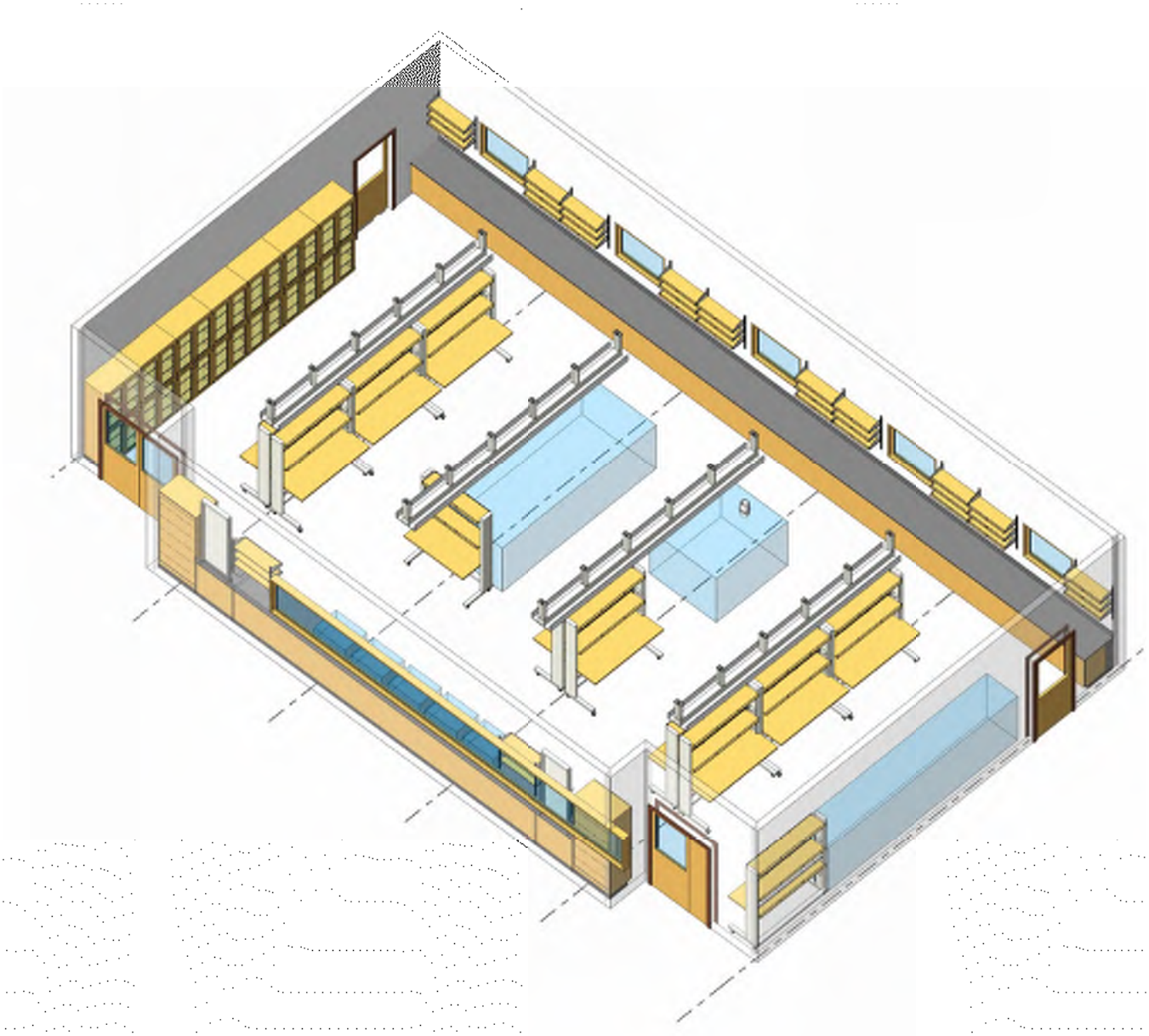


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

DEPARTMENT: ME **SPACE ID NO: 1.03 CEB**
SPACE NAME: ADDITIVE MANUFACTURING **AREA NSF: 1,815**

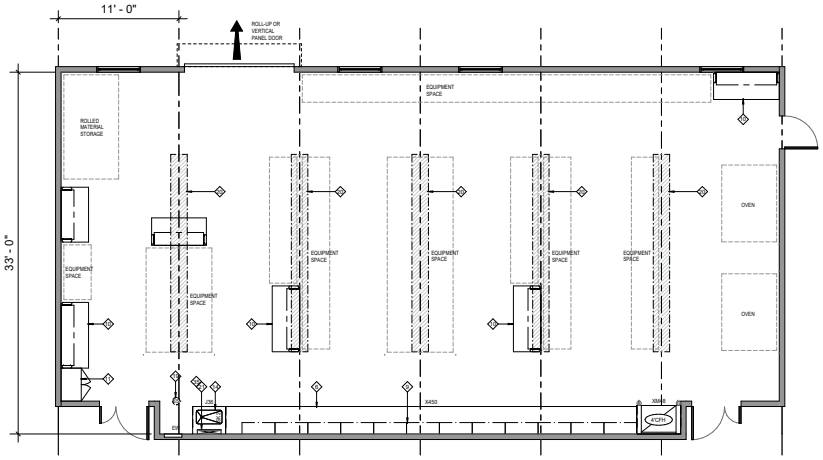
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: COMPOSITE LAB

SPACE ID NO: 1.01 CHN
AREA NSF: 2,178

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
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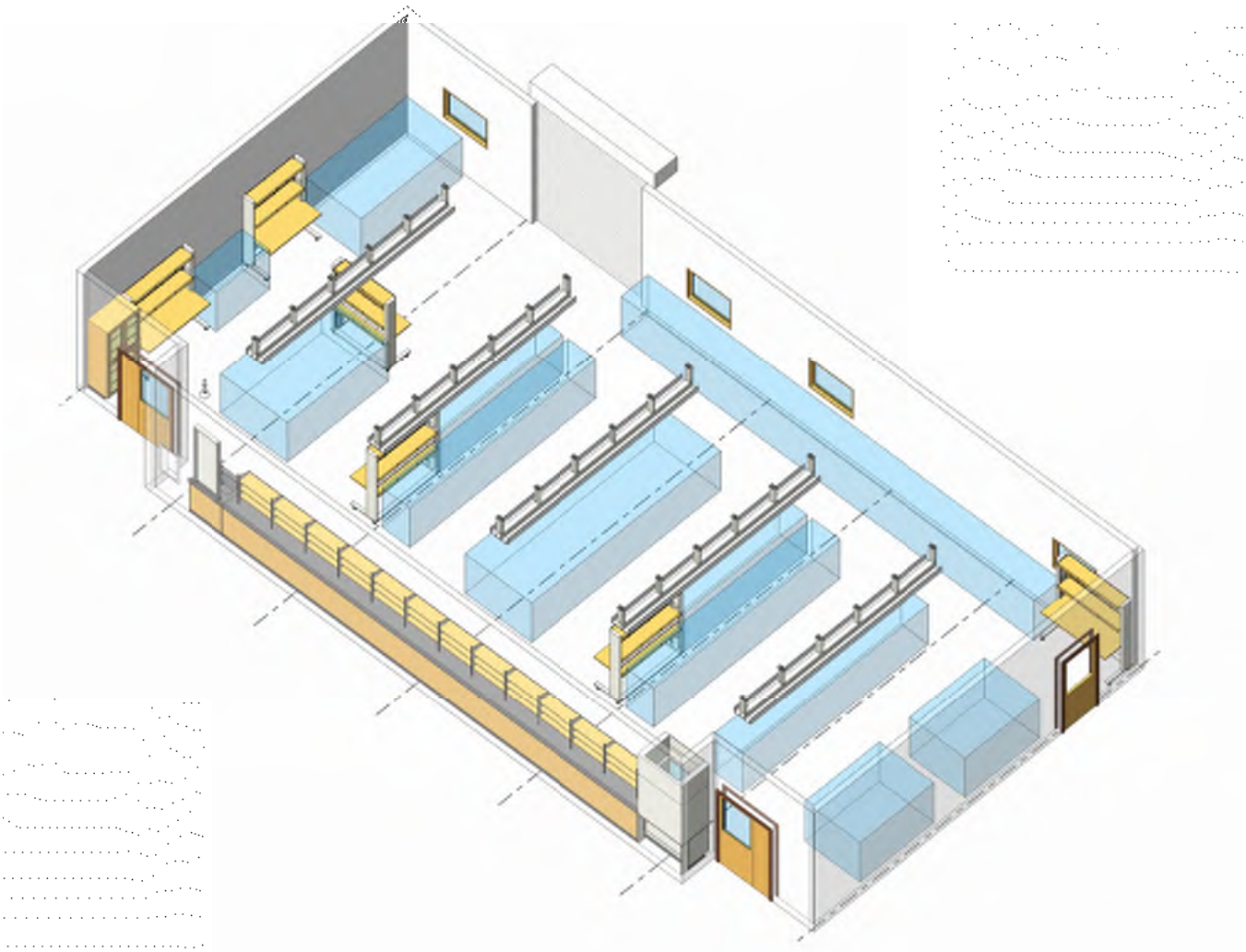
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

0' 2' 4' 8'
1/8" = 1'-0"

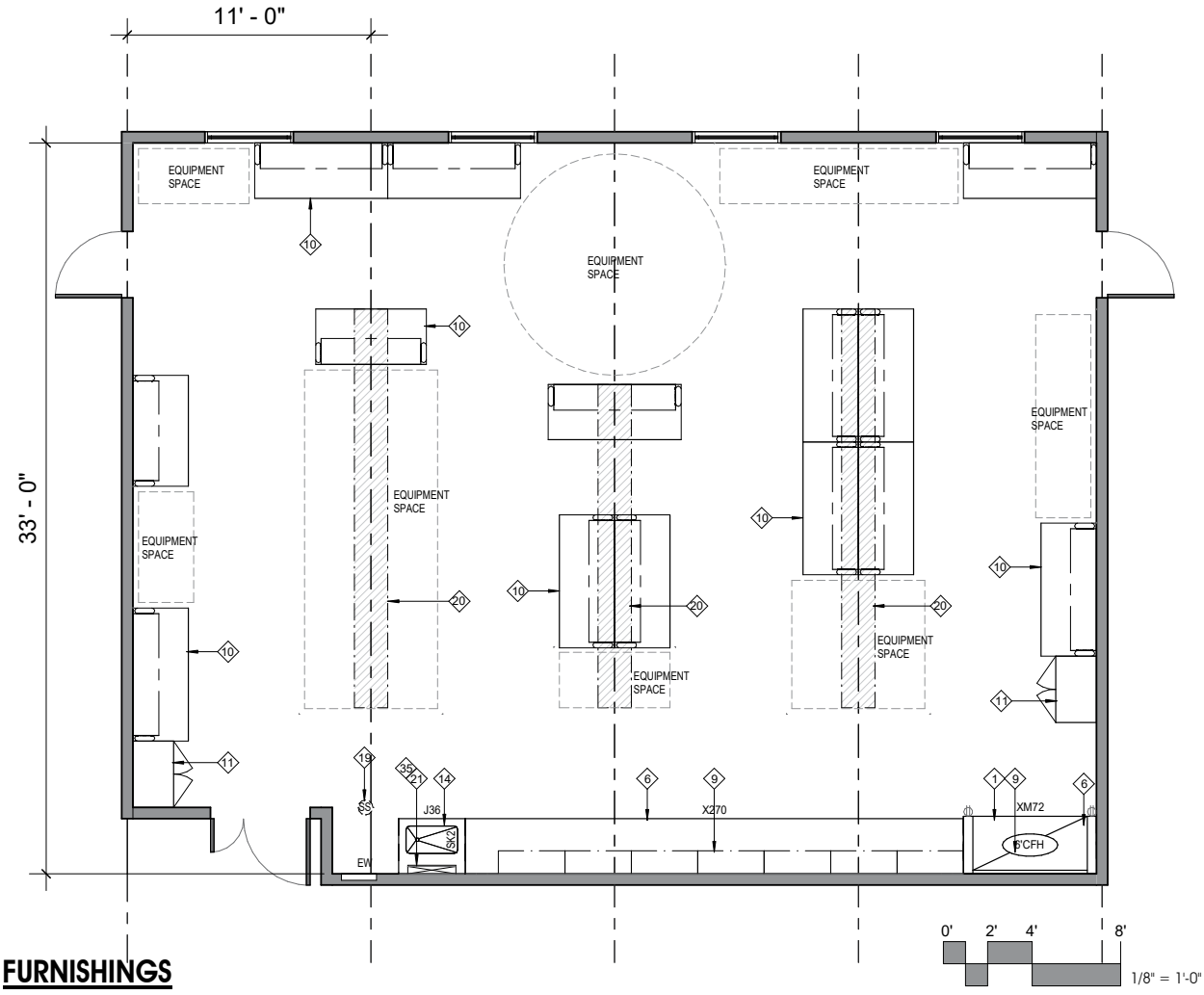
DEPARTMENT: ME **SPACE ID NO: 1.01 CHN**
SPACE NAME: COMPOSITE LAB **AREA NSF: 2,178**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME **SPACE ID NO: 2.03 EB**
SPACE NAME: ROBOTICS RESEARCH LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
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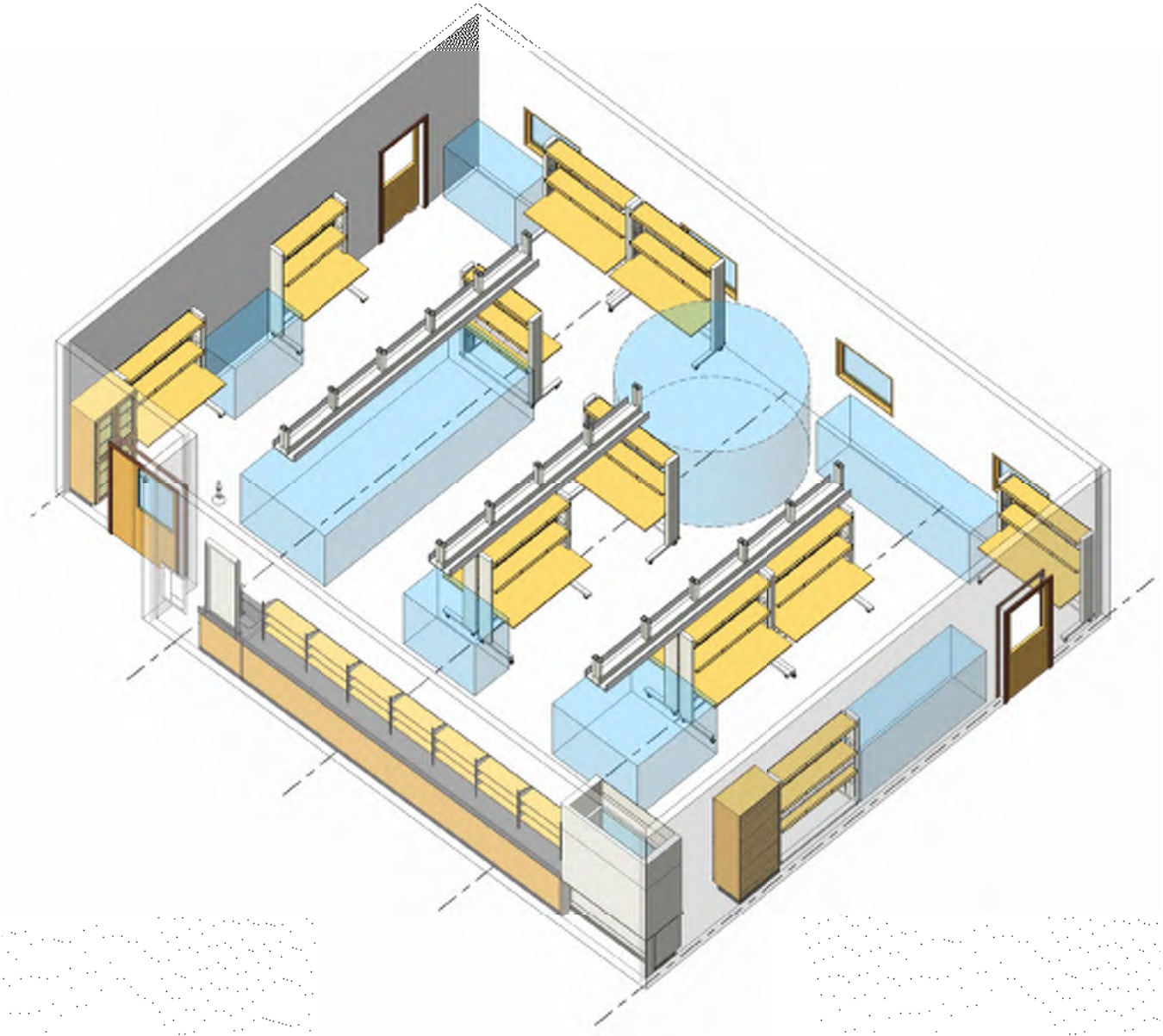
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: ME
SPACE NAME: ROBOTICS RESEARCH LAB

SPACE ID NO: 2.03 EB
AREA NSF: 1,452

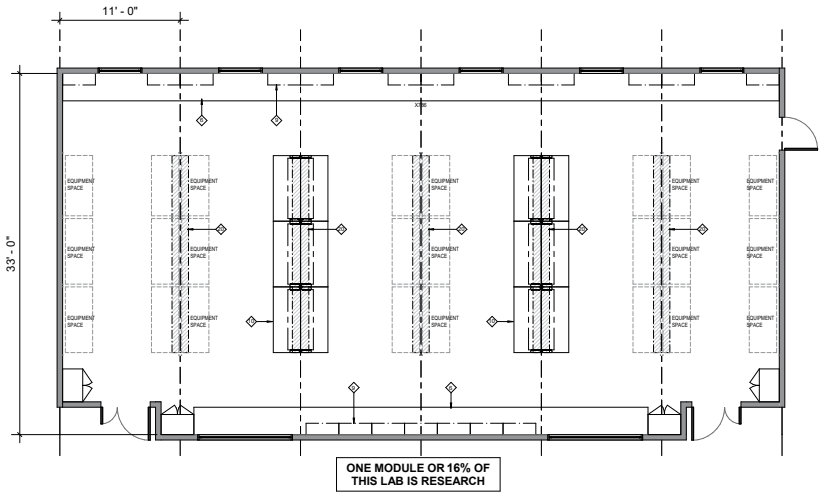
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: FLUID POWER LAB

SPACE ID NO: 1.04 EB
AREA NSF: 2,178

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.

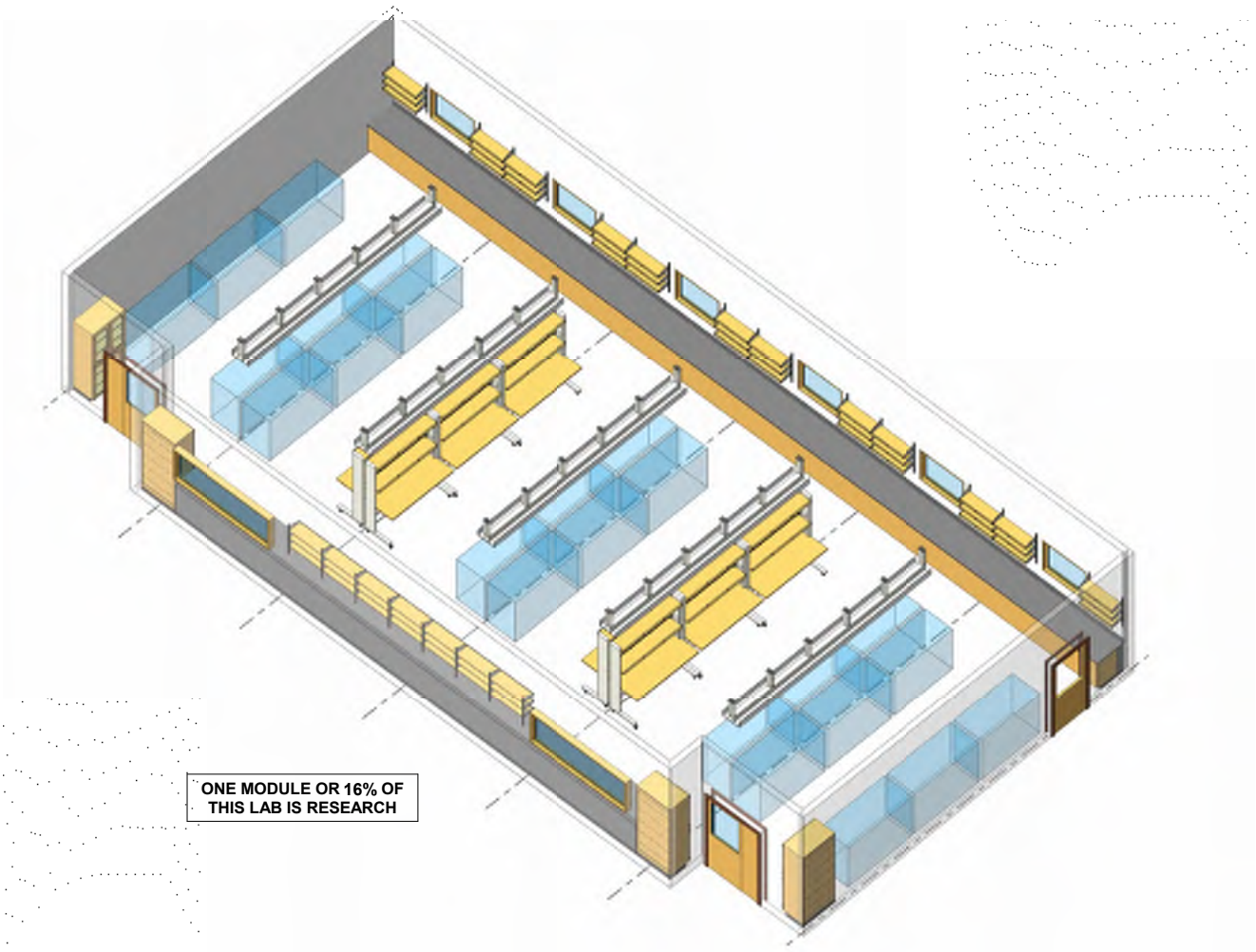


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

DEPARTMENT: ME **SPACE ID NO: 1.04 EB**
SPACE NAME: FLUID POWER LAB **AREA NSF: 2,178**

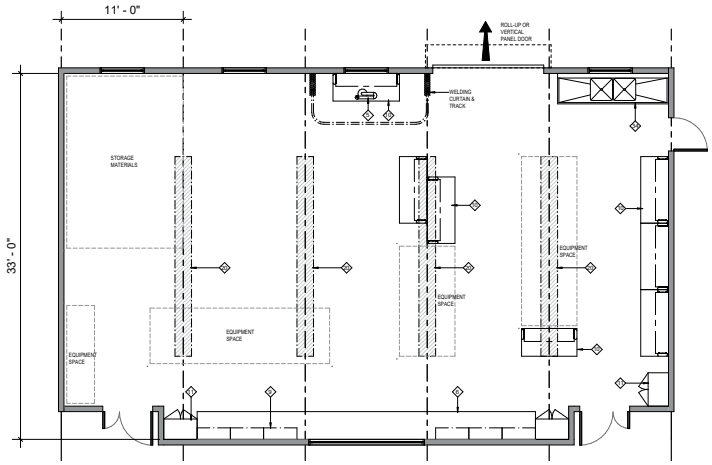
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME
SPACE NAME: CONSTRUCTION LAB

SPACE ID NO: 1.05 EB
AREA NSF: 1,815

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



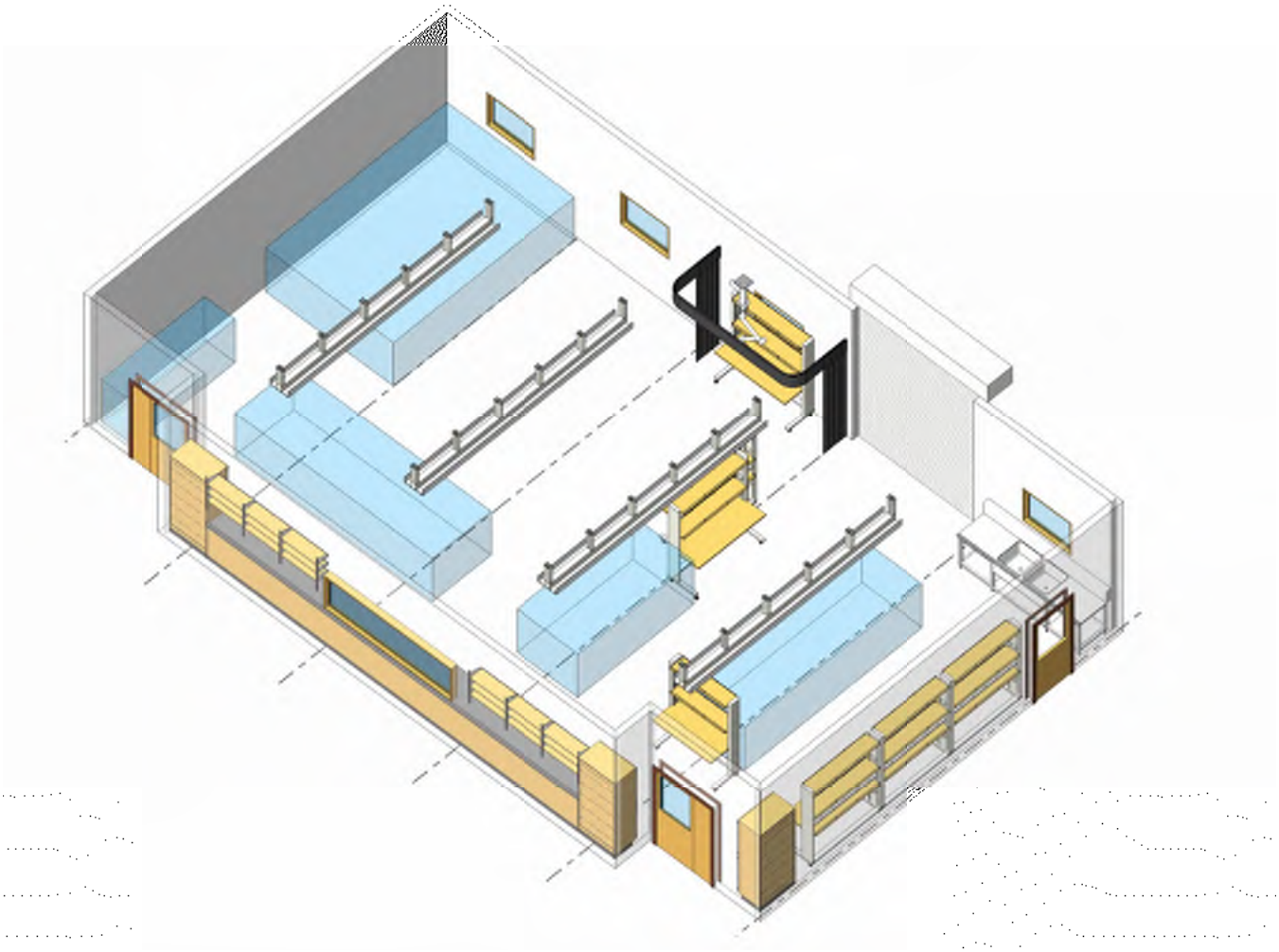
FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

DEPARTMENT: ME
SPACE NAME: CONSTRUCTION LAB

SPACE ID NO: 1.05 EB
AREA NSF: 1,815

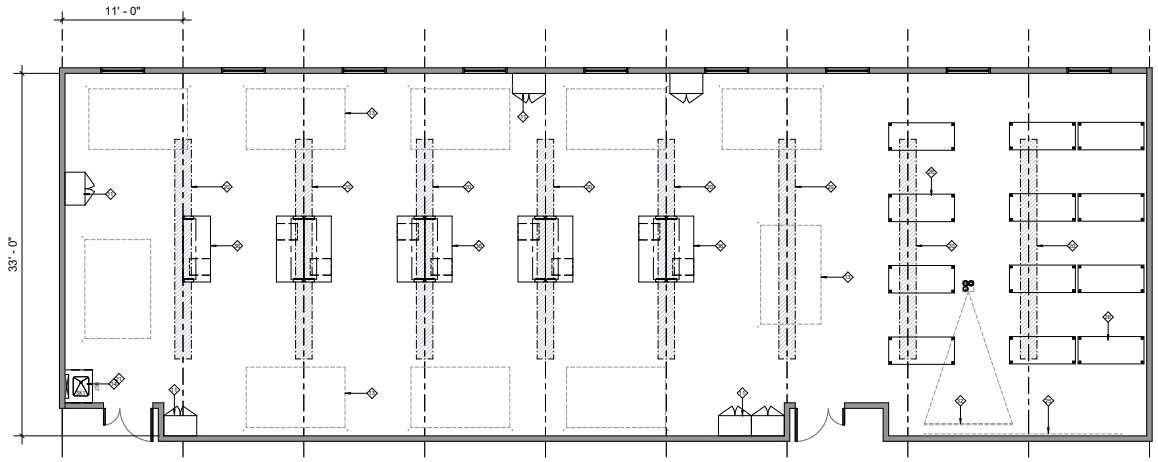
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: MET
SPACE NAME: PLC + CONTROLS + SENSORS LAB

SPACE ID NO: 1.03 CEB
AREA NSF: 3,267

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
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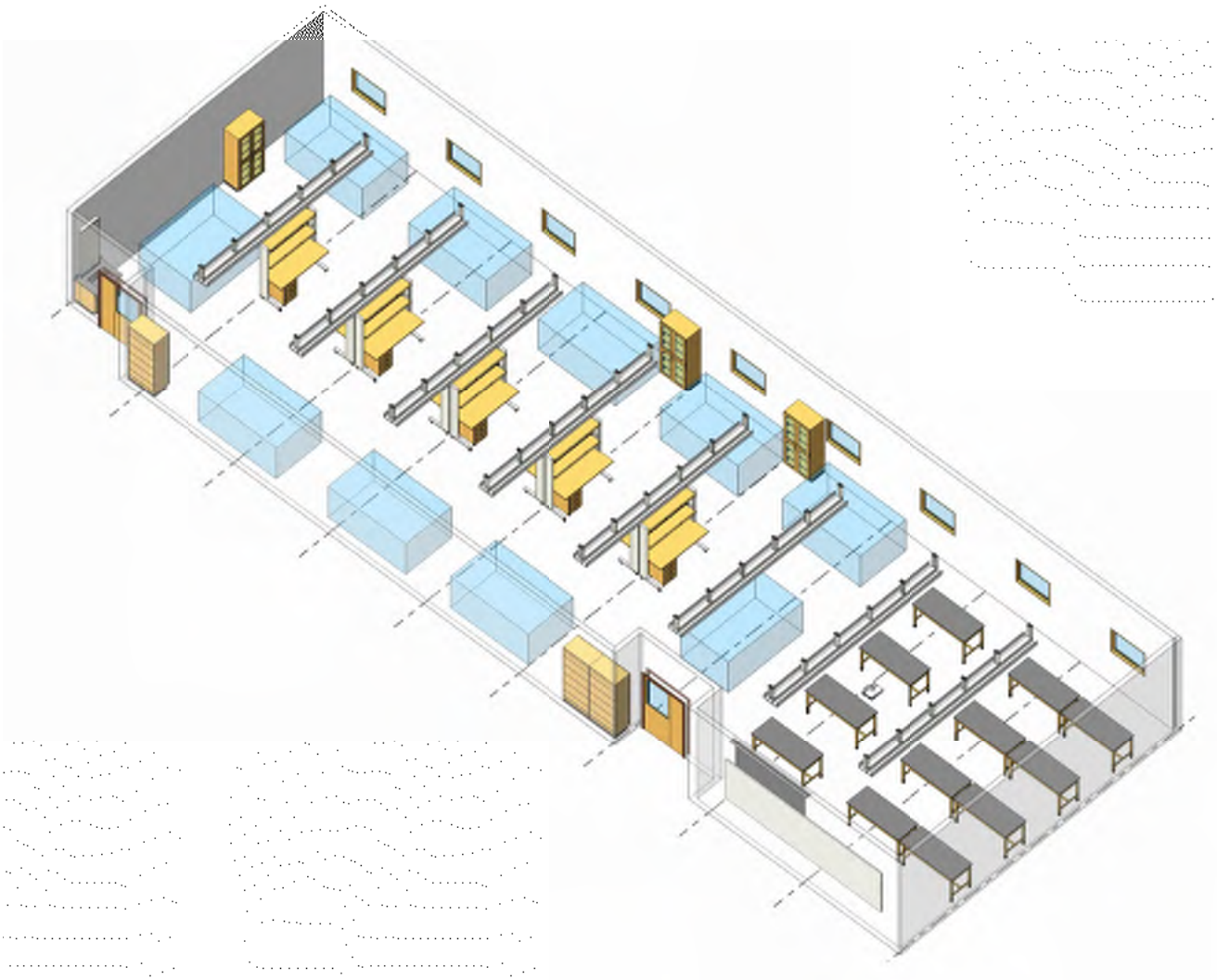
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

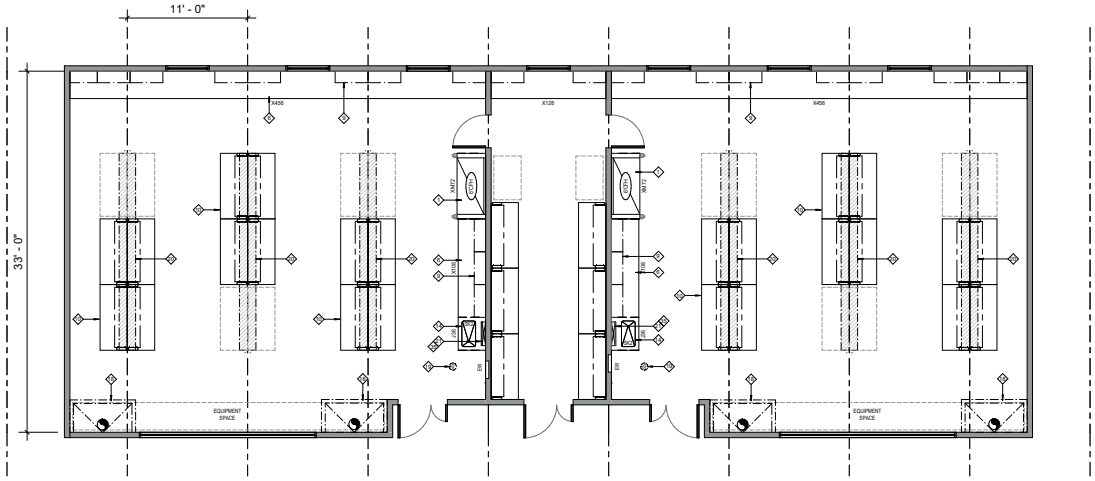
DEPARTMENT: MET **SPACE ID NO: 1.03 CEB**
SPACE NAME: PLC + CONTROLS + SENSORS LAB **AREA NSF: 3,267**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: ME / CE **SPACE ID NO: 1.01/1.02 CEB**
SPACE NAME: THERMODYNAMICS LAB **AREA NSF: 2,904**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
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16. Coat/ Bookbag Storage
17. Laser Curtain
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20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
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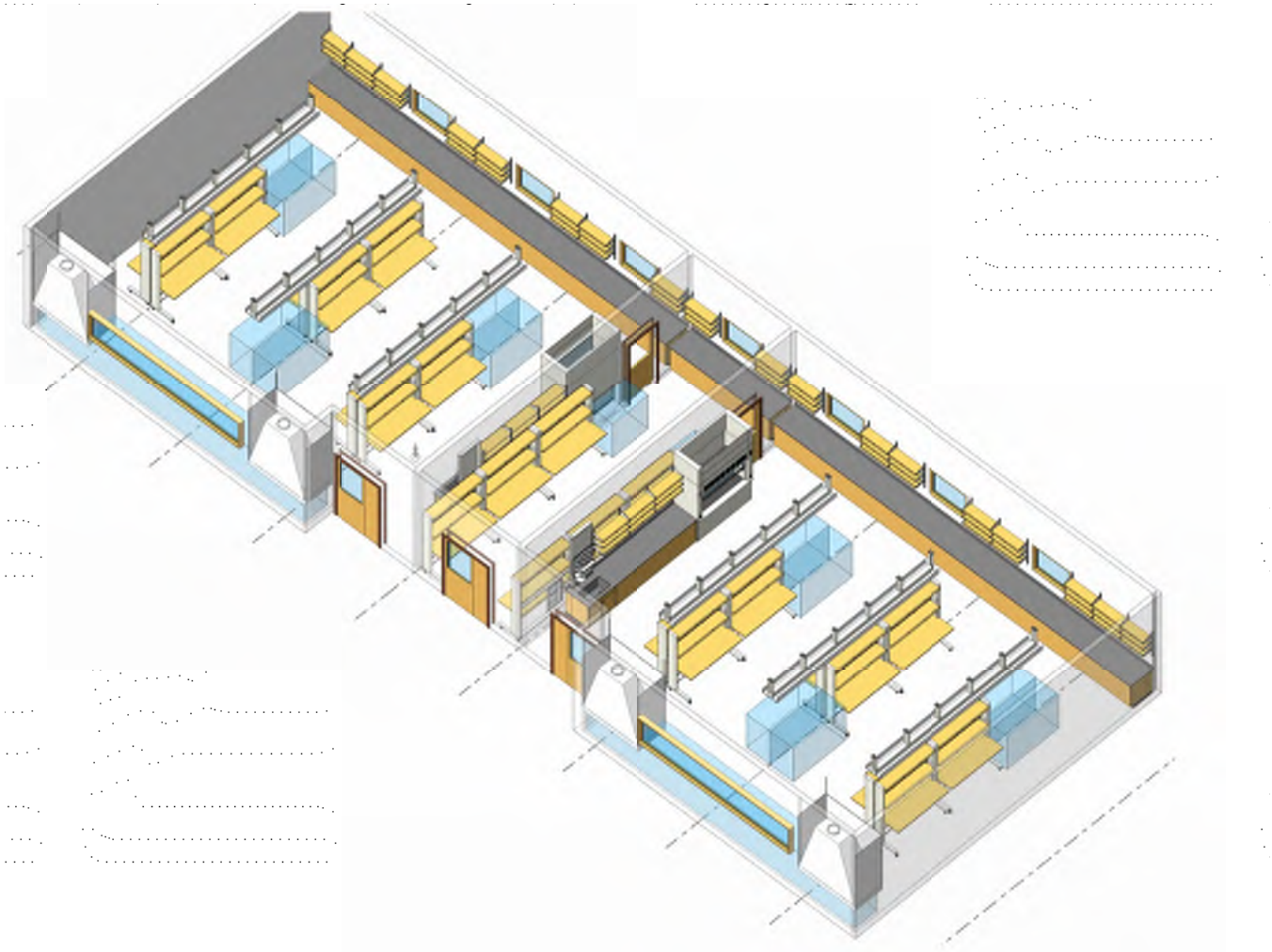
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack
36. Mobile Workstation

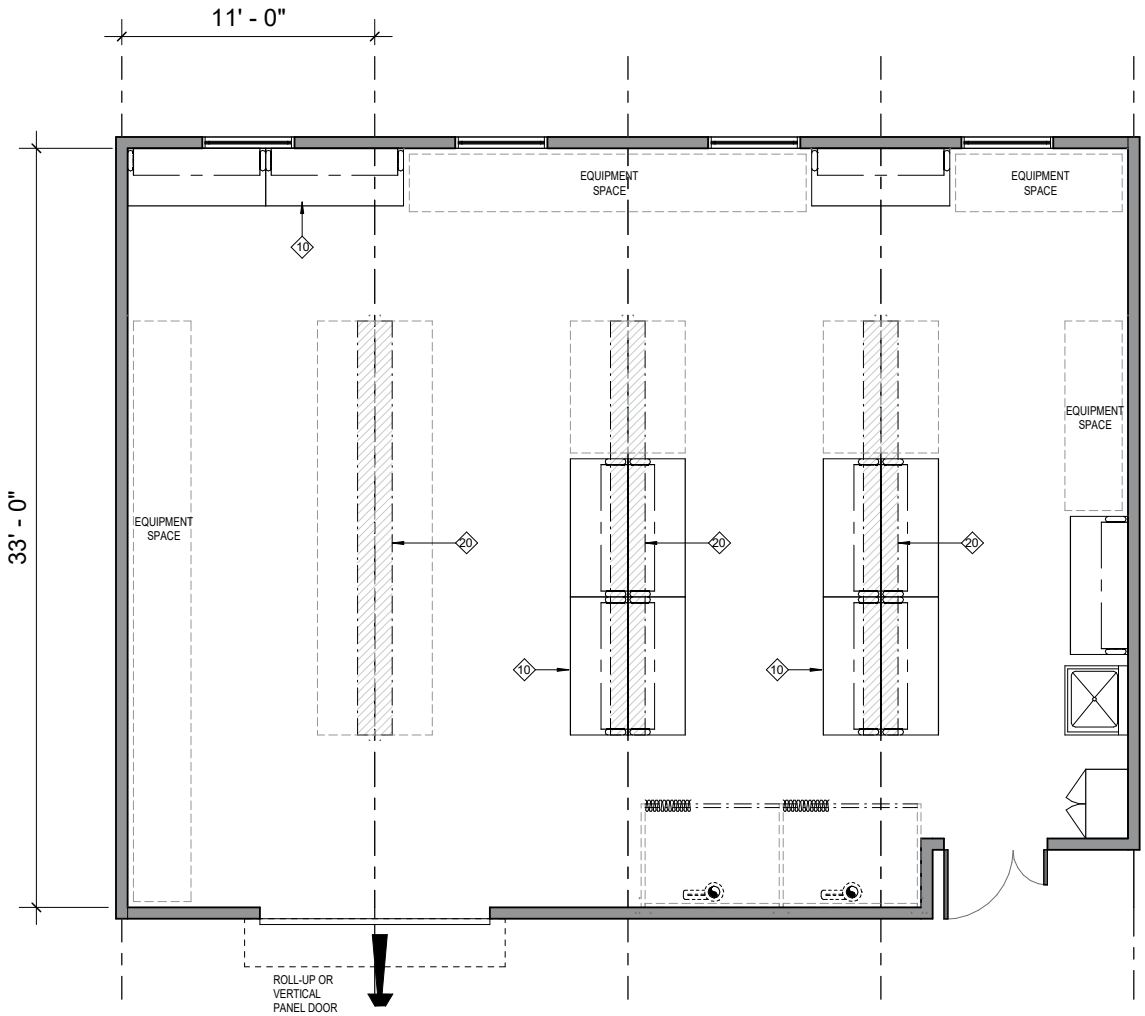
DEPARTMENT: ME / CE **SPACE ID NO: 1.01/1.02 CEB**
SPACE NAME: THERMODYNAMICS LAB **AREA NSF: 2,904**

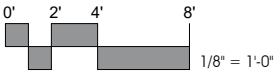
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.06 EB**
SPACE NAME: CONSTRUCTION ENGINEEERING LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.





FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
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19. Safety Shower/Eyewash
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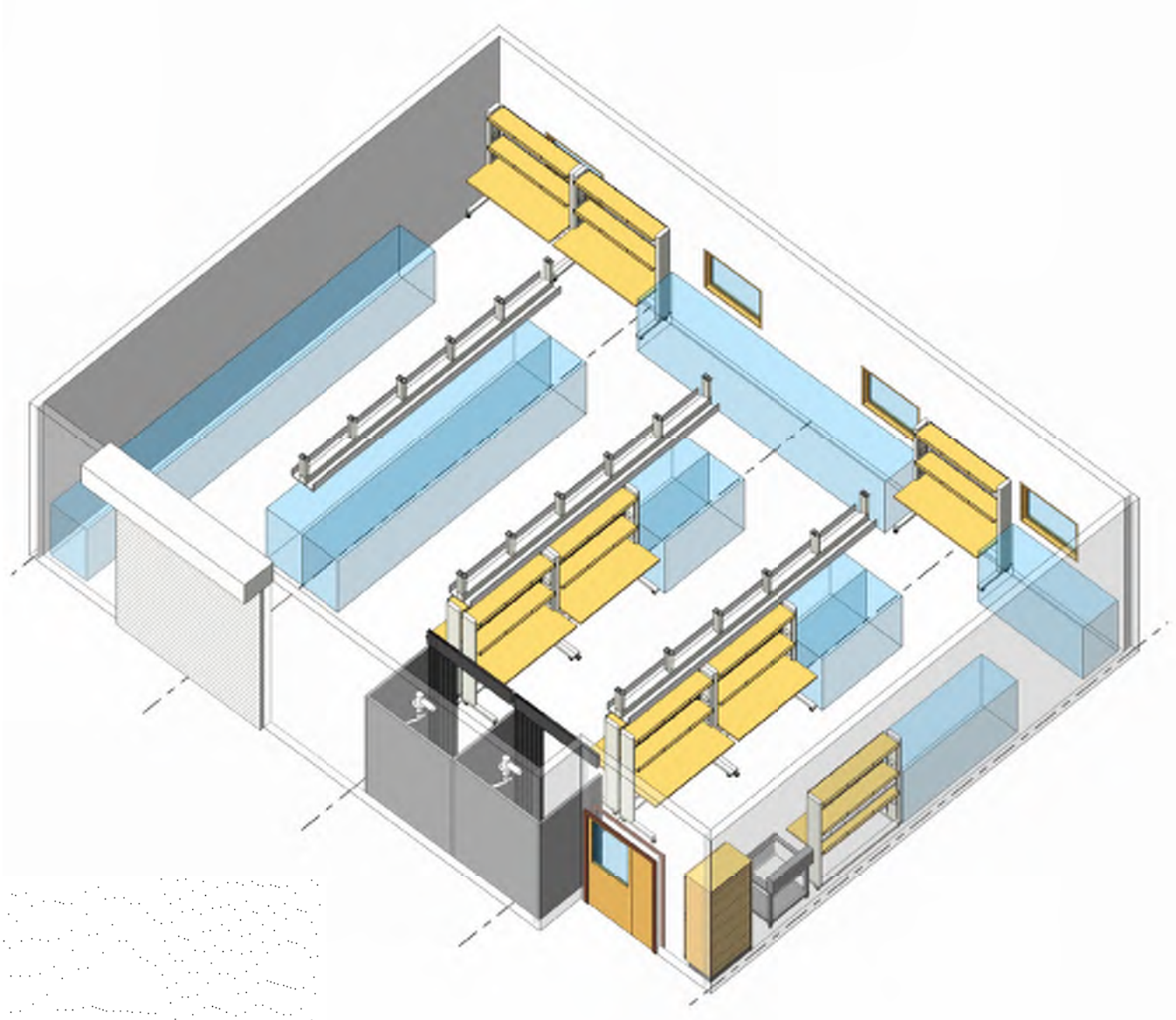
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

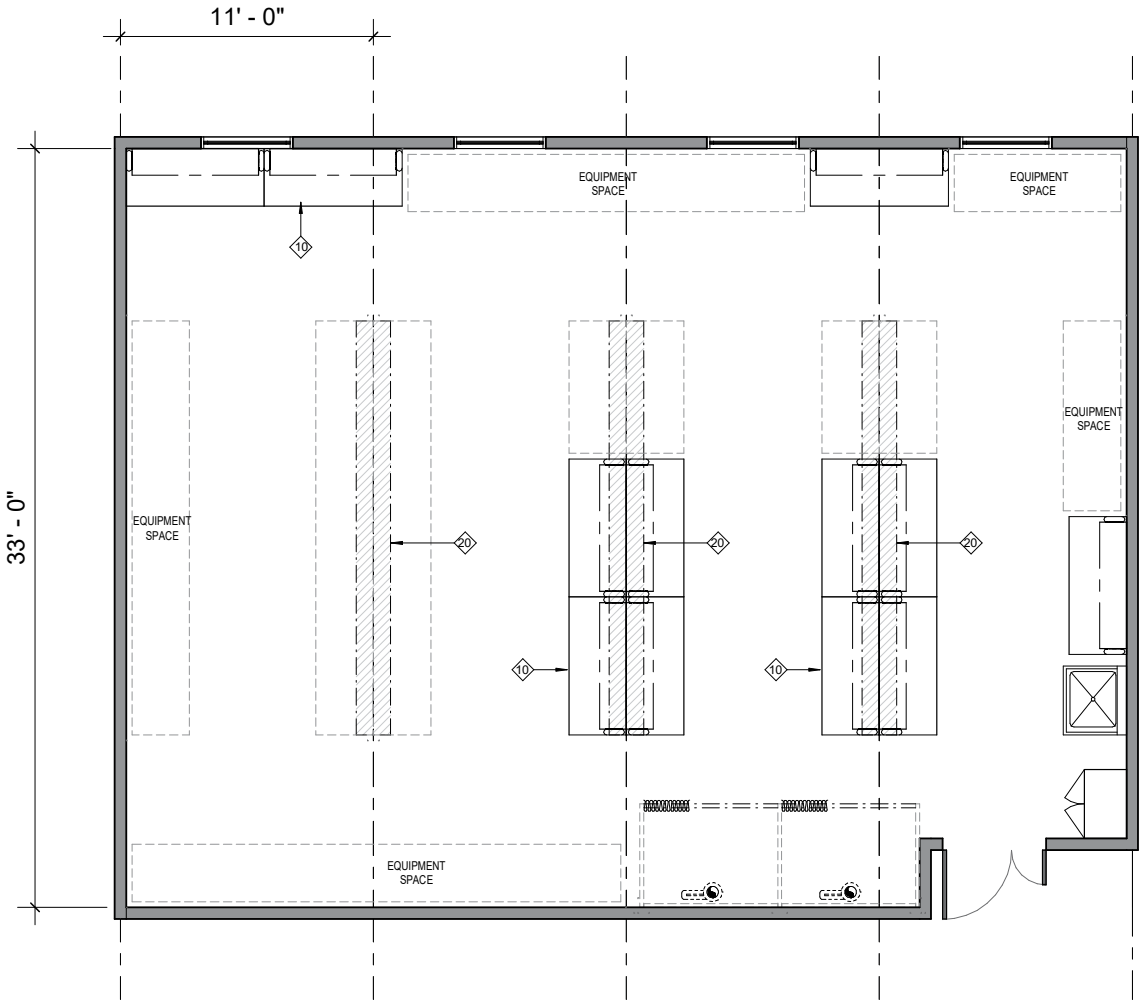
DEPARTMENT: CE **SPACE ID NO: 1.06 EB**
SPACE NAME: CONSTRUCTION ENGINEEERING LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.06 CEB**
SPACE NAME: CONSTRUCTION MATERIALS LAB / CTL BRIDGE CAPSTONE AREA NSF: 1,452

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
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16. Coat/ Bookbag Storage
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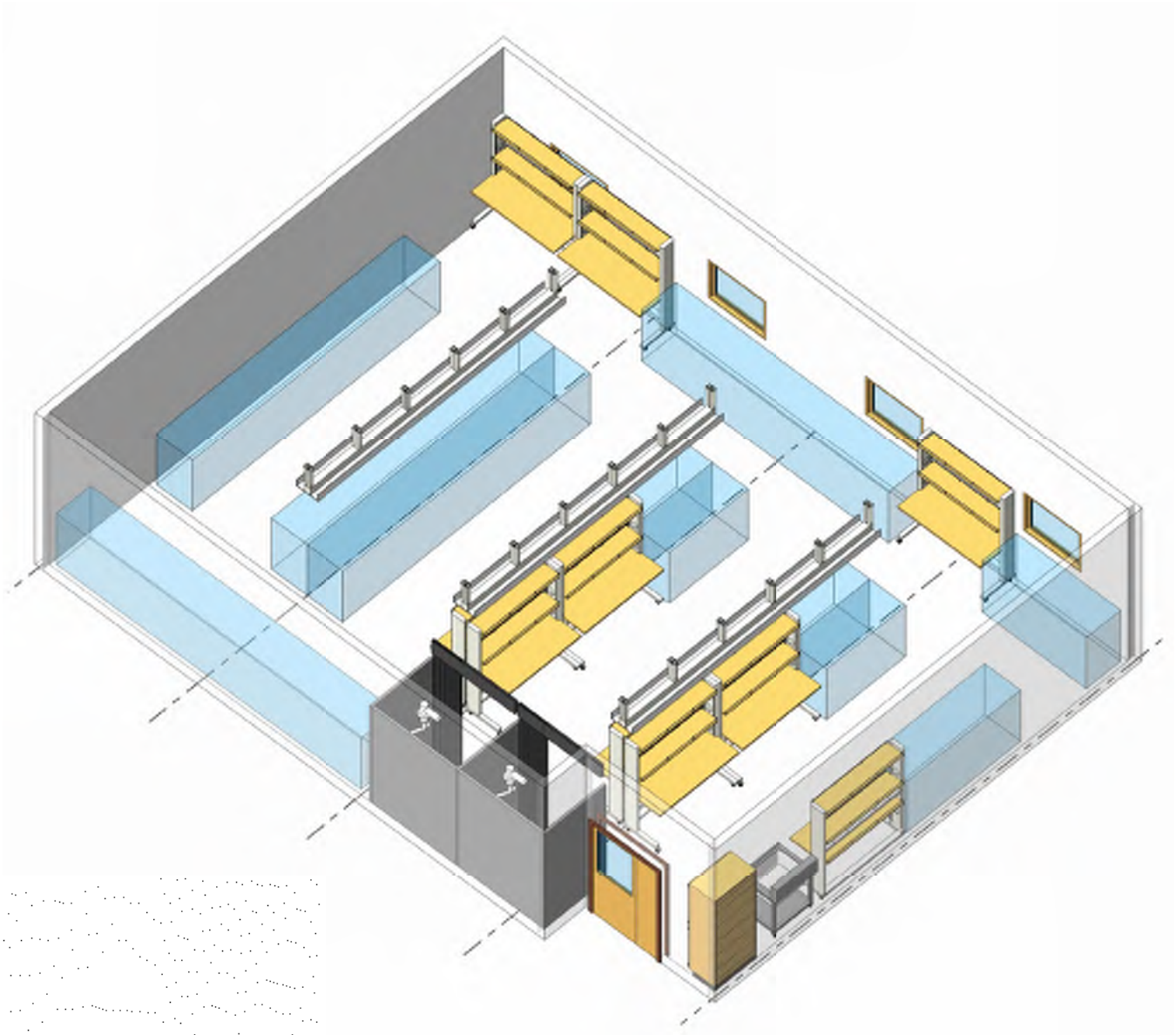
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

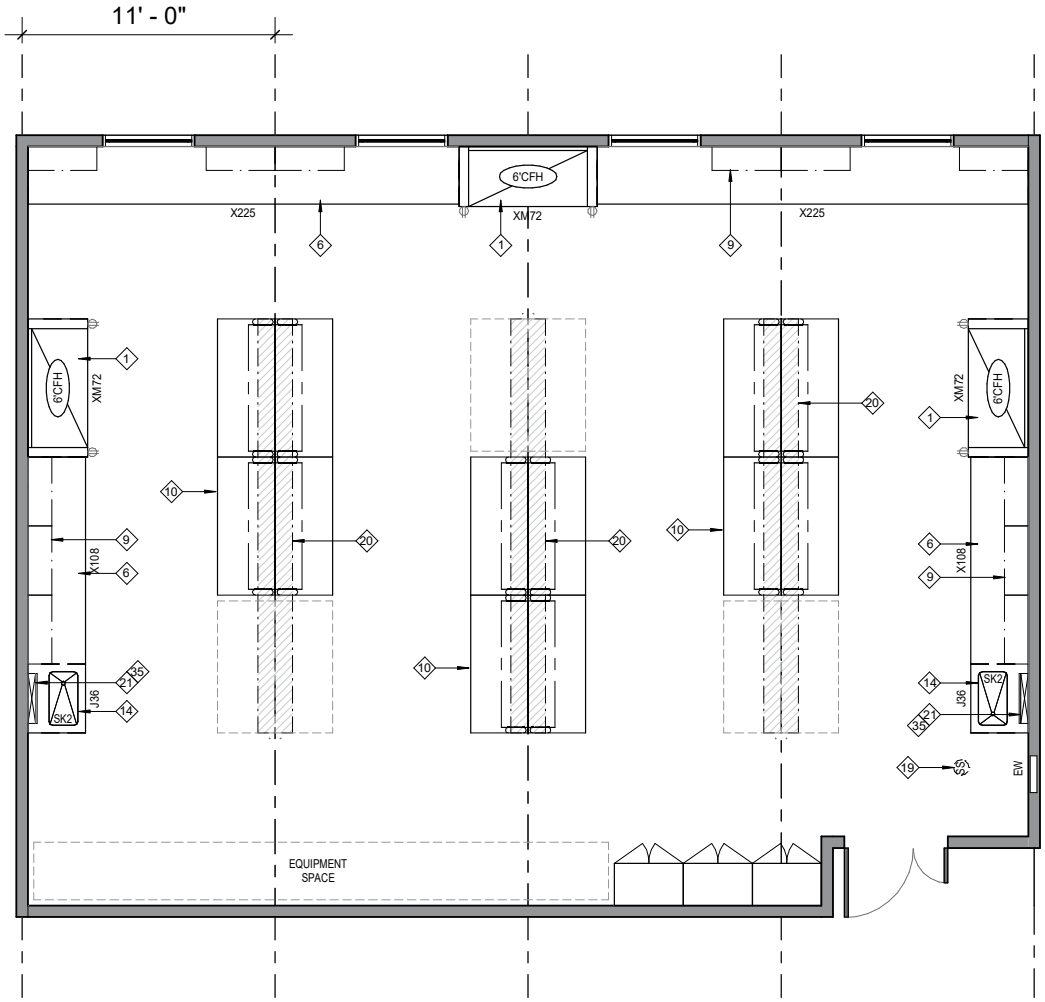
DEPARTMENT: CE **SPACE ID NO: 1.06 CEB**
SPACE NAME: CONSTRUCTION MATERIALS LAB / CTL BRIDGE CAPSTONE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.07 EB**
SPACE NAME: TRANSPORTATION & PAVEMENT ENG LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



0' 2' 4' 8'
1/8" = 1'-0"

FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
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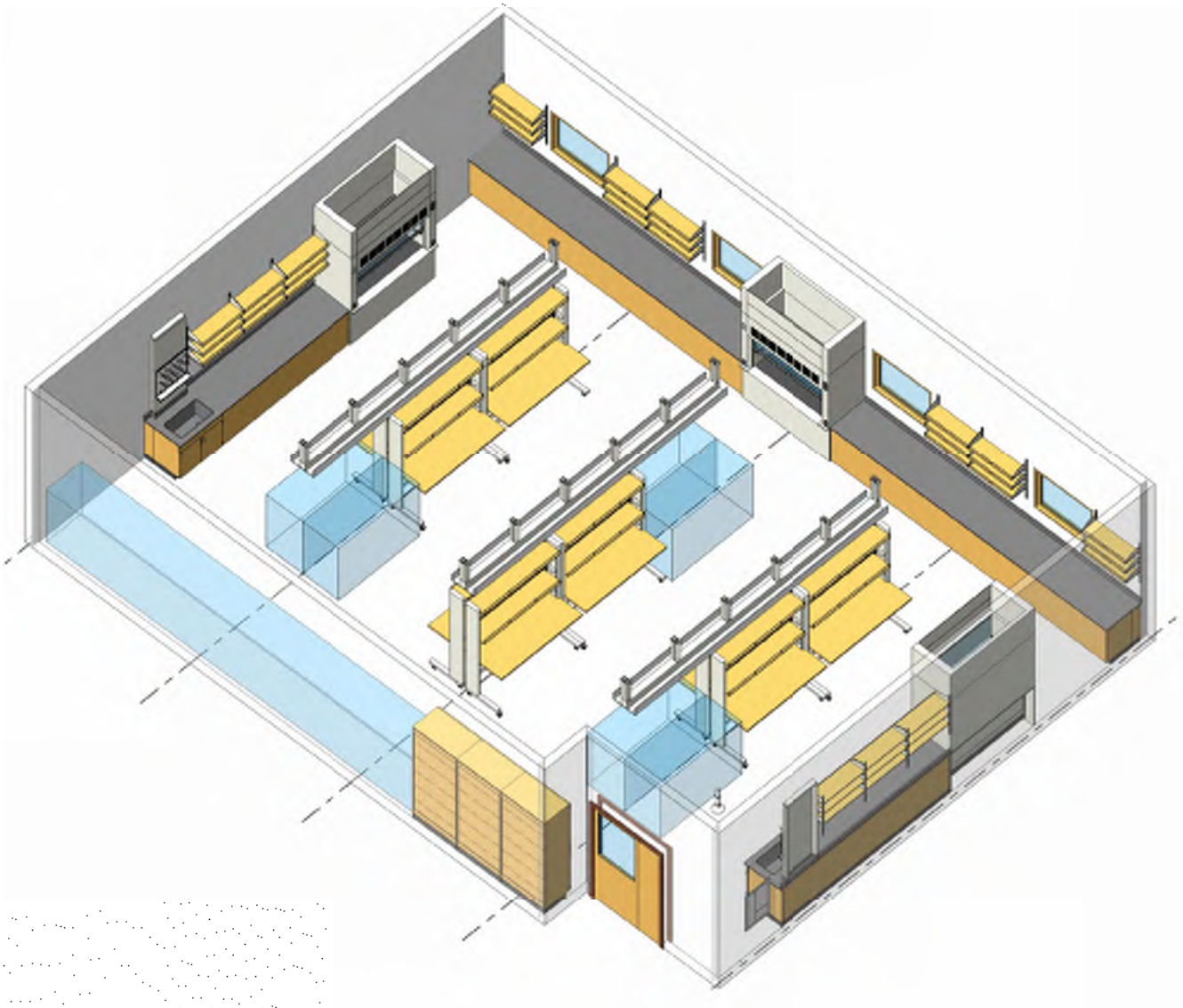
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

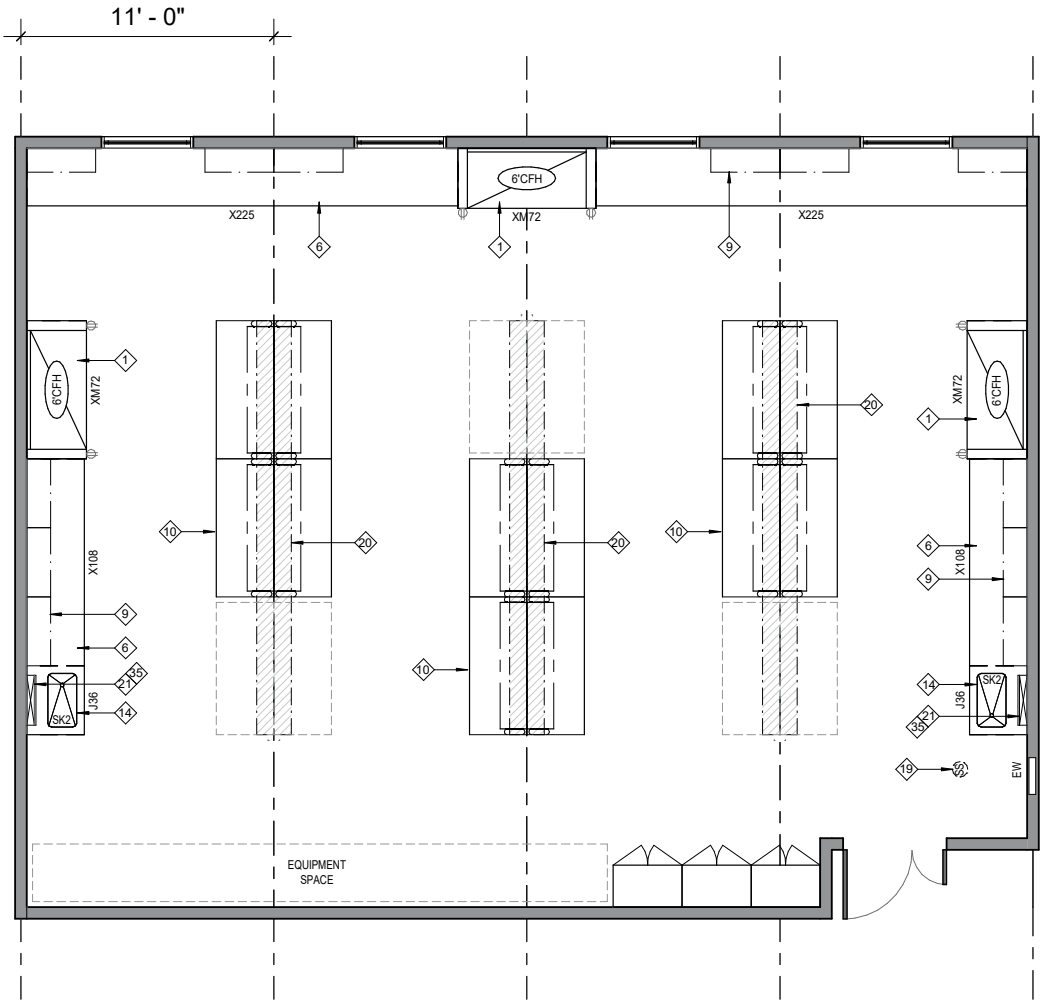
DEPARTMENT: CE **SPACE ID NO: 1.07 EB**
SPACE NAME: TRANSPORTATION & PAVEMENT ENG LAB **AREA NSF: 1,452**

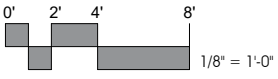
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.08 EB**
SPACE NAME: ENVIRONMENTAL ENG **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.





FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
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19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
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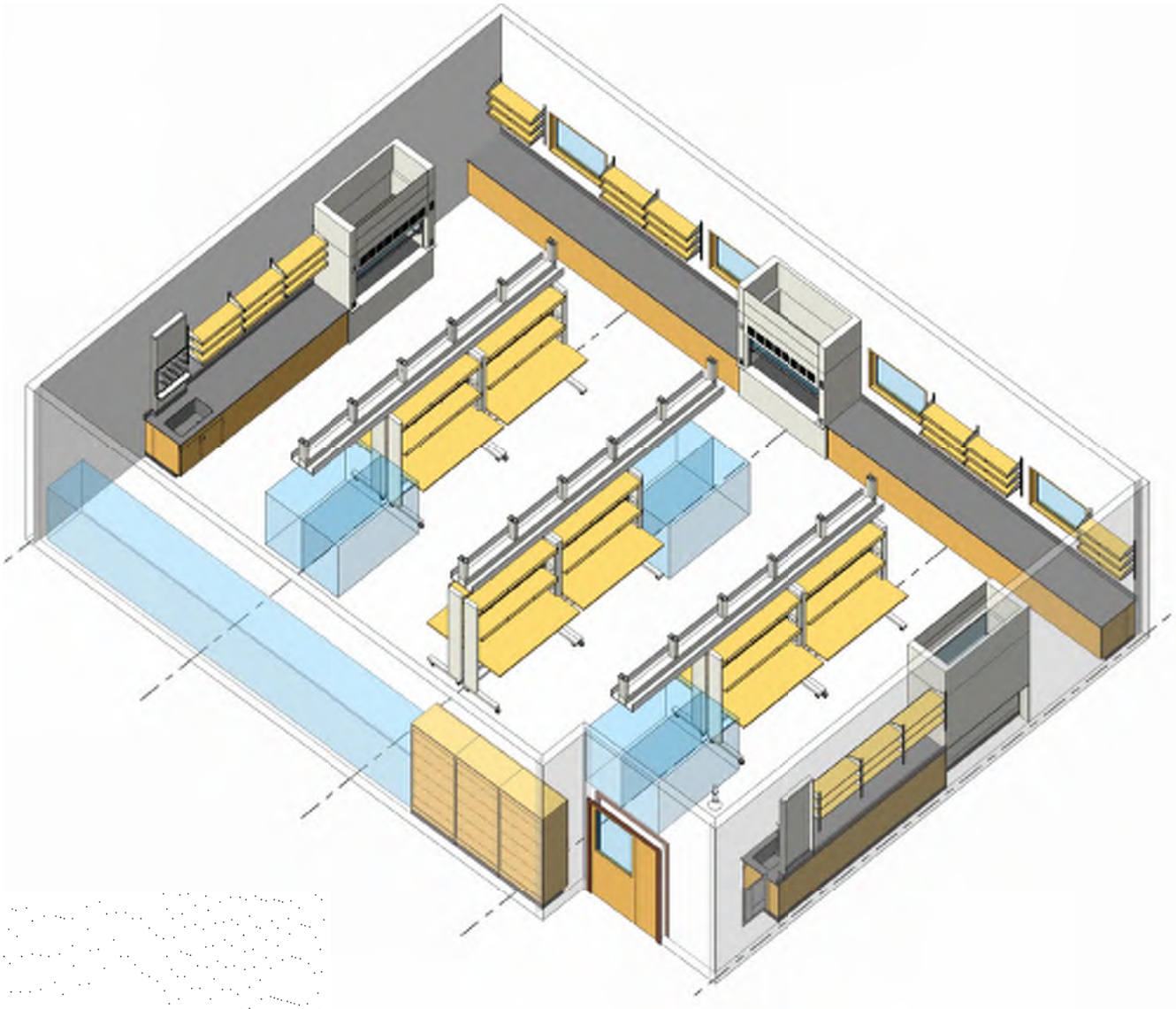
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

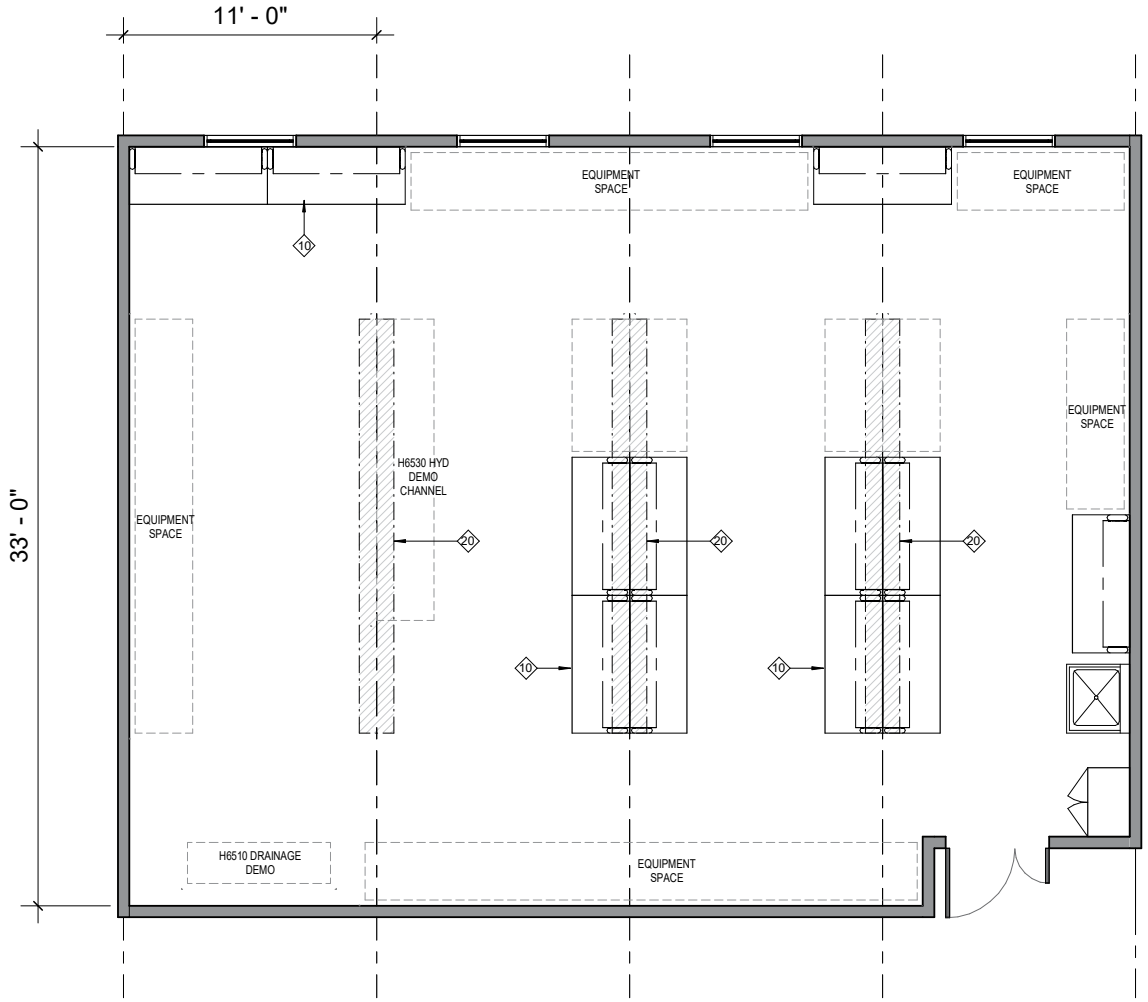
DEPARTMENT: CE **SPACE ID NO: 1.08 EB**
SPACE NAME: ENVIRONMENTAL ENG **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.09 EB**
SPACE NAME: FLUIDS / WATER RESOURCES ENGINEERING **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
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10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
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20. Overhead Cable Tray
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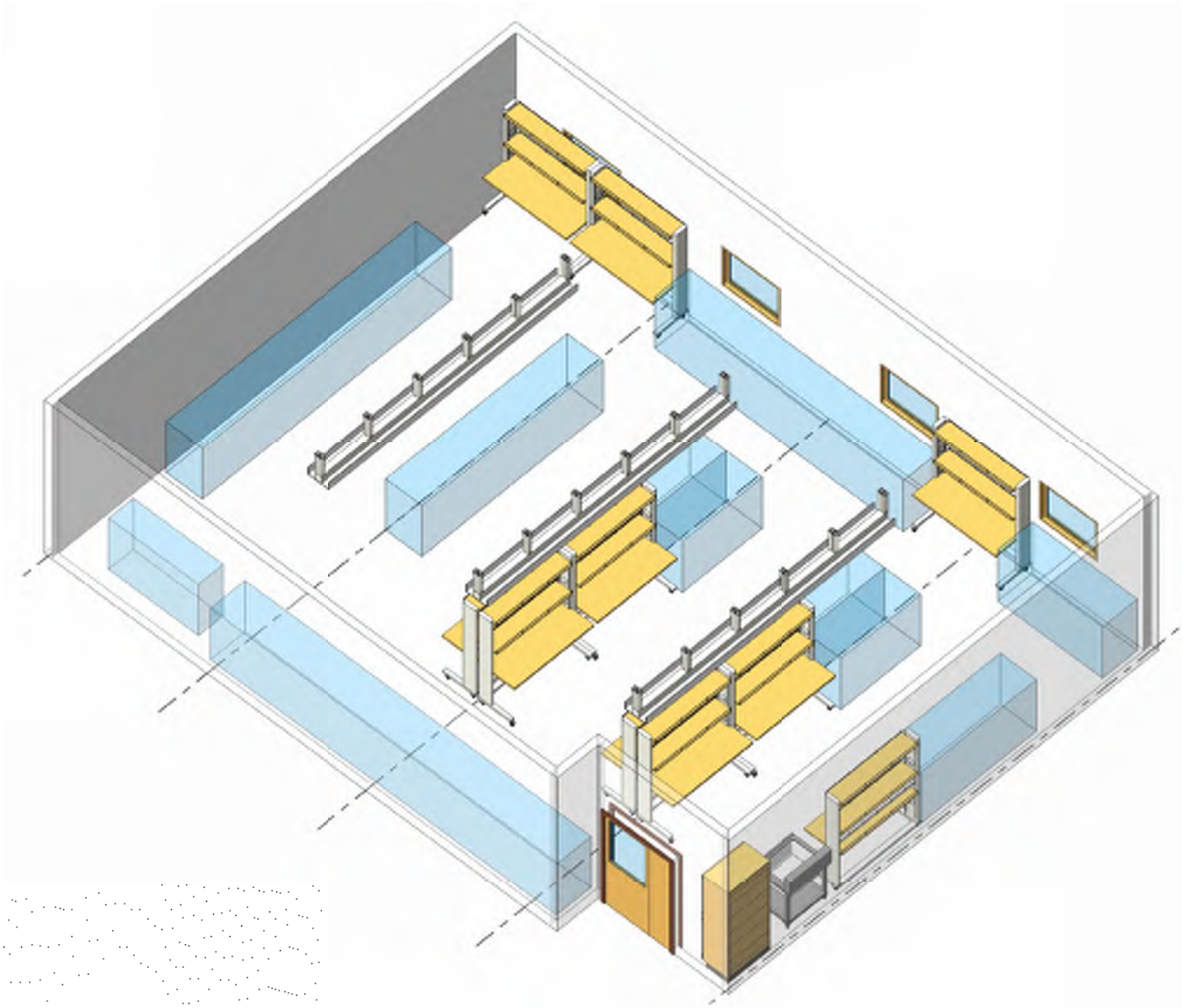
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

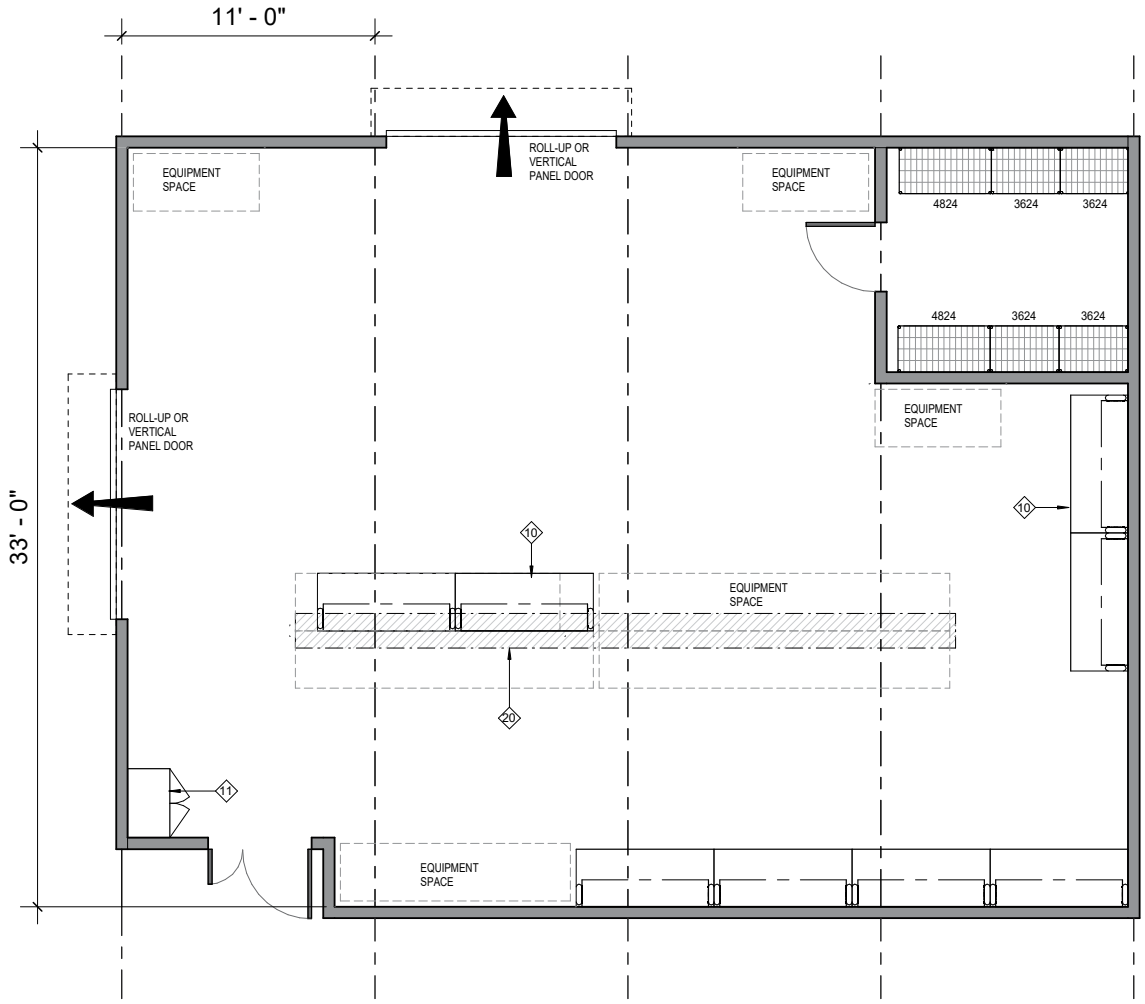
DEPARTMENT: CE **SPACE ID NO: 1.09 EB**
SPACE NAME: FLUIDS / WATER RESOURCES ENGINEERING **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.10 EB**
SPACE NAME: CONCRETE LAB **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



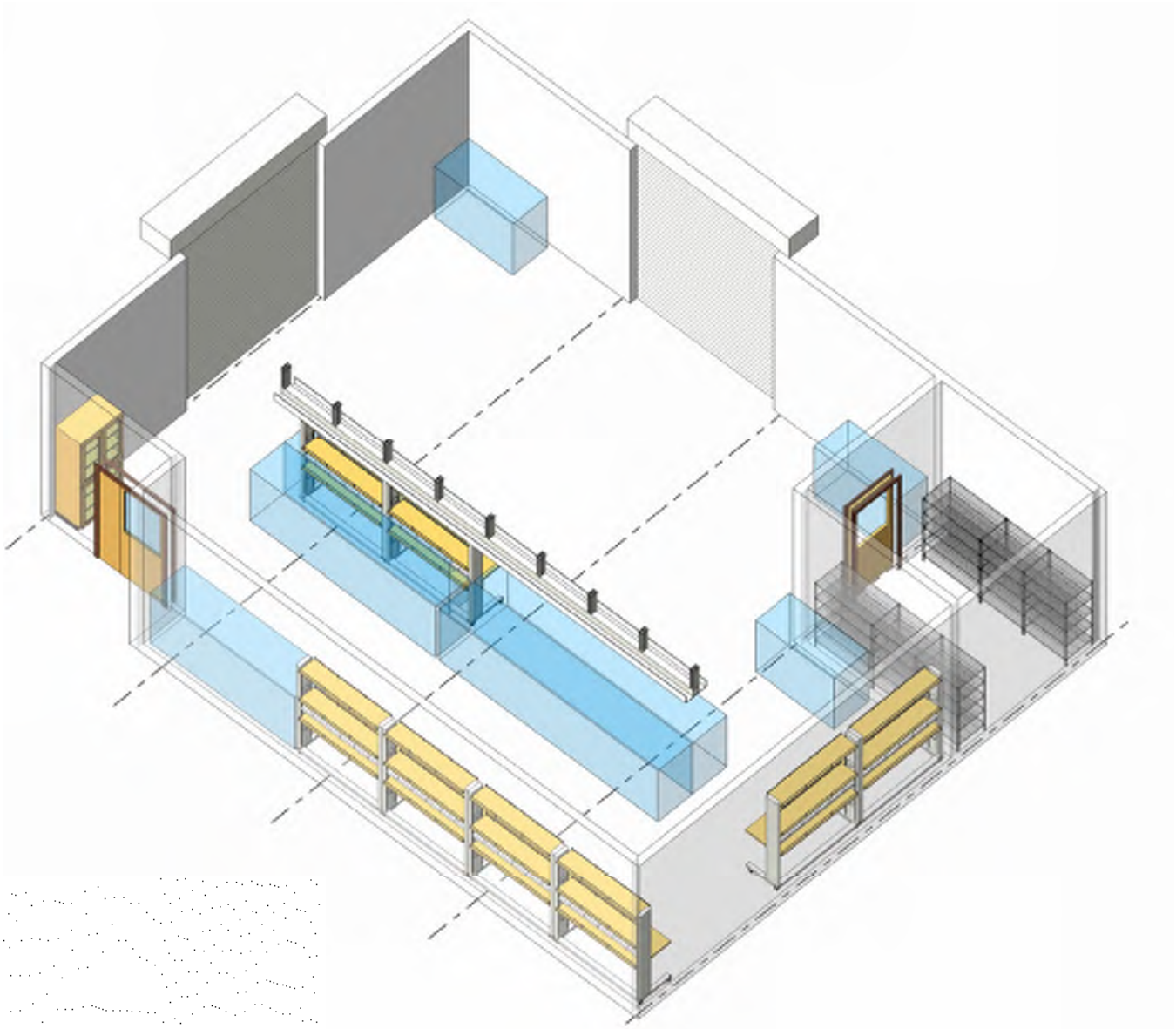
0' 2' 4' 8'
1/8" = 1'-0"

FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

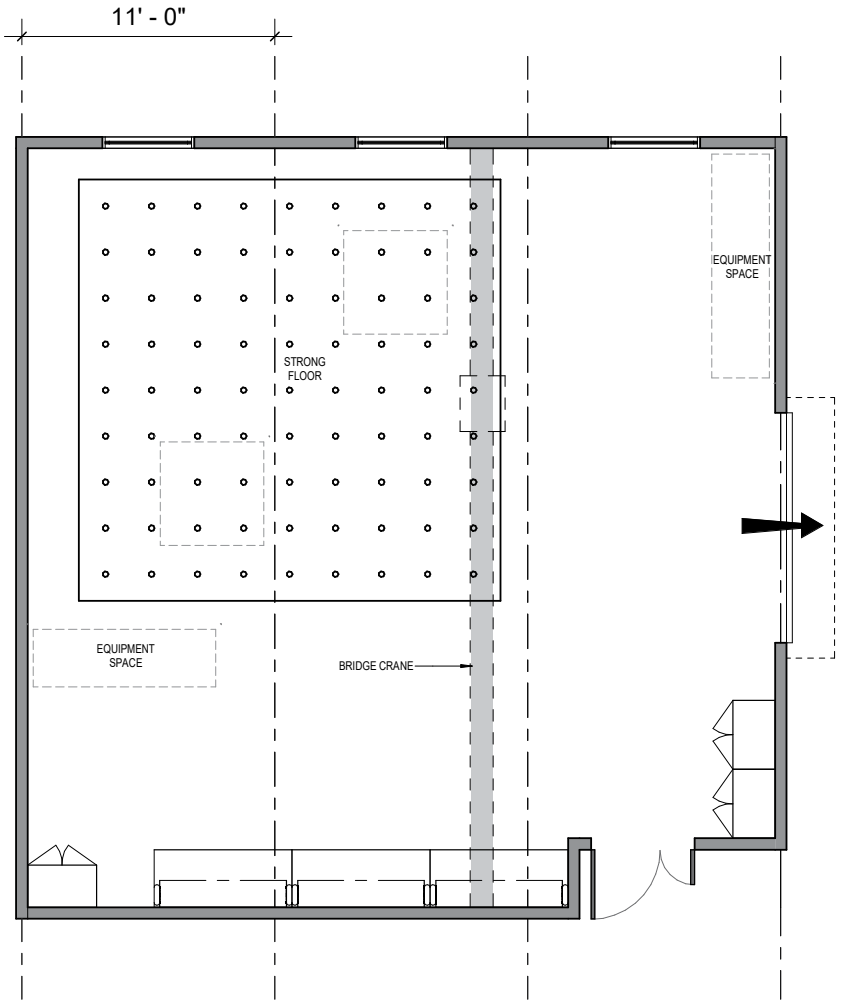
DEPARTMENT: CE **SPACE ID NO: 1.10 EB**
SPACE NAME: CONCRETE LAB **AREA NSF: 1,452**

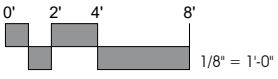
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.11 EB**
SPACE NAME: CONCRETE TESTING LAB (INCL CANOE CAPSTONE) **AREA NSF: 1,089**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.





FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
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10. Mobile Workstation
11. Tall Storage Cabinet
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13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
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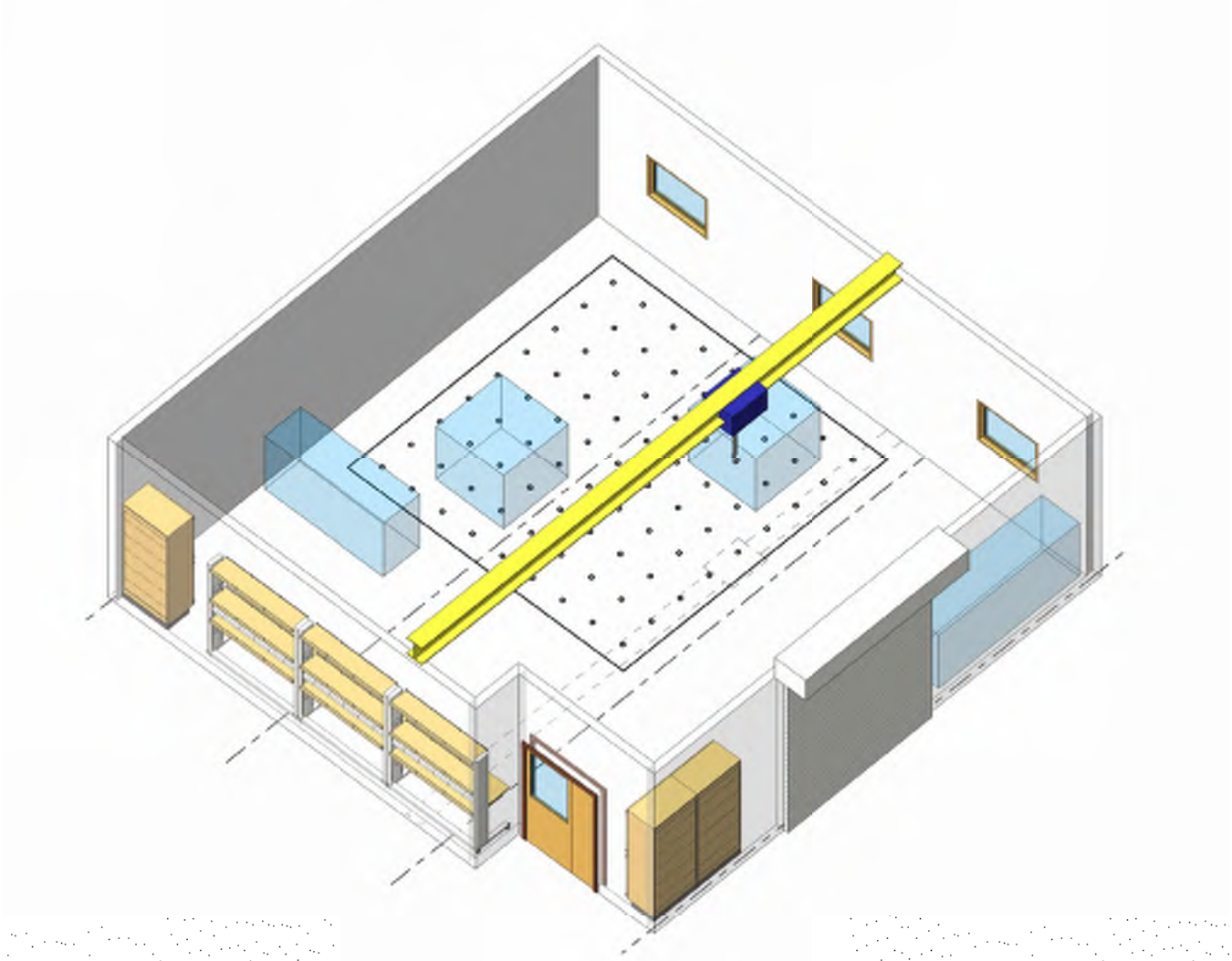
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

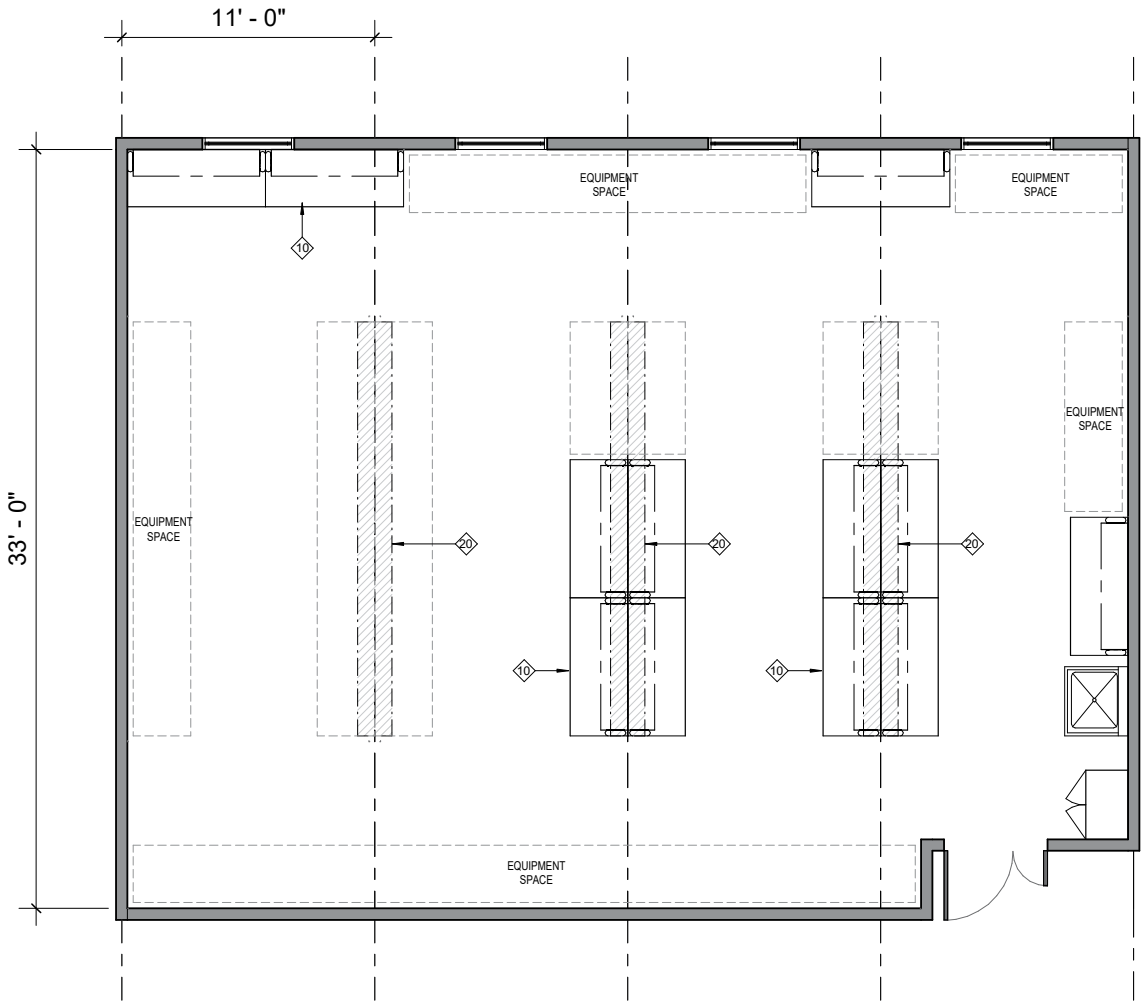
DEPARTMENT: CE **SPACE ID NO: 1.11 EB**
SPACE NAME: CONCRETE TESTING LAB (INCL CANOE CAPSTONE) **AREA NSF: 1,089**

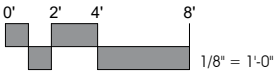
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 2.03 EB**
SPACE NAME: MASTERS RESEARCH **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



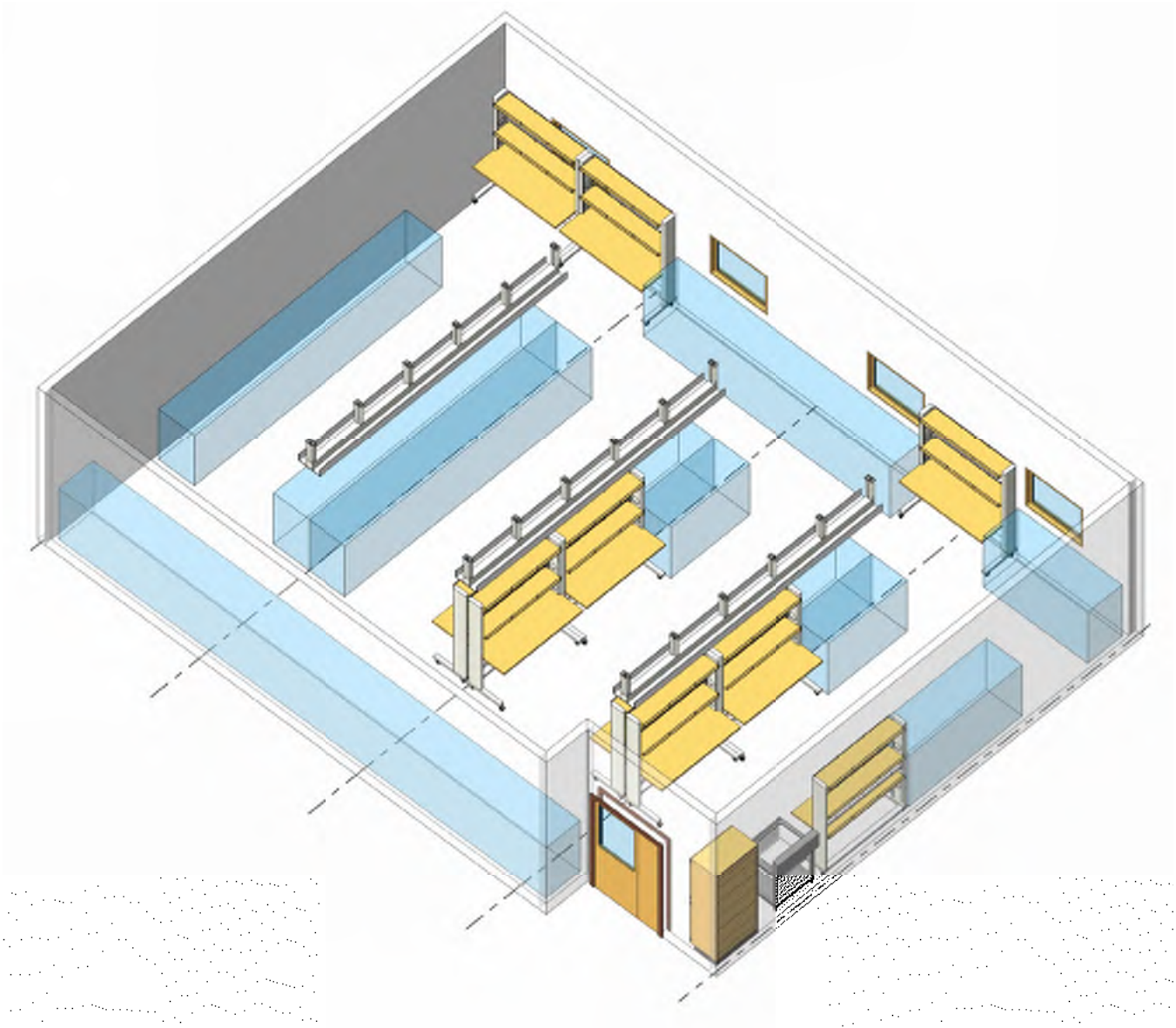


FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
23. Glassware Washer
24. Glassware Dryer
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

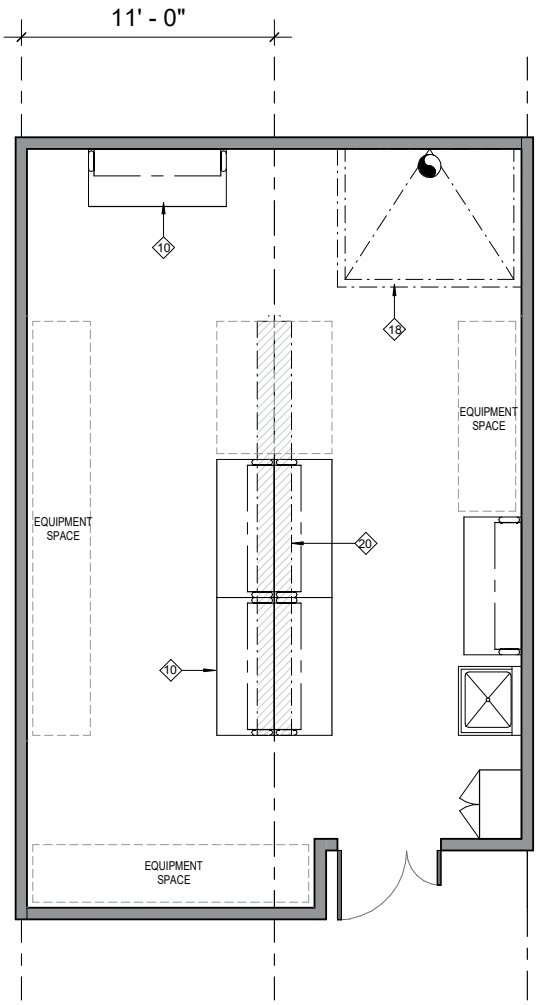
DEPARTMENT: CE **SPACE ID NO: 2.03 EB**
SPACE NAME: MASTERS RESEARCH **AREA NSF: 1,452**

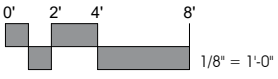
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.12 EB**
SPACE NAME: WILD FIRE **AREA NSF: 726**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.





FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
04. Cylinder Restraint
05. Snorkel Exhaust
06. Laboratory Bench, Standing Height
07. Laboratory Bench, Sitting Height
08. Wall Cabinet
09. Adjustable Wall Shelves
10. Mobile Workstation
11. Tall Storage Cabinet
12. Flammable Storage Cabinet
13. Equipment Space
14. Laboratory Sink
15. Cupsink
16. Coat/ Bookbag Storage
17. Laser Curtain
18. Canopy Hood
19. Safety Shower/Eyewash
20. Overhead Cable Tray
21. Pipe Drop Enclosure
22. Movable Demonstration Bench
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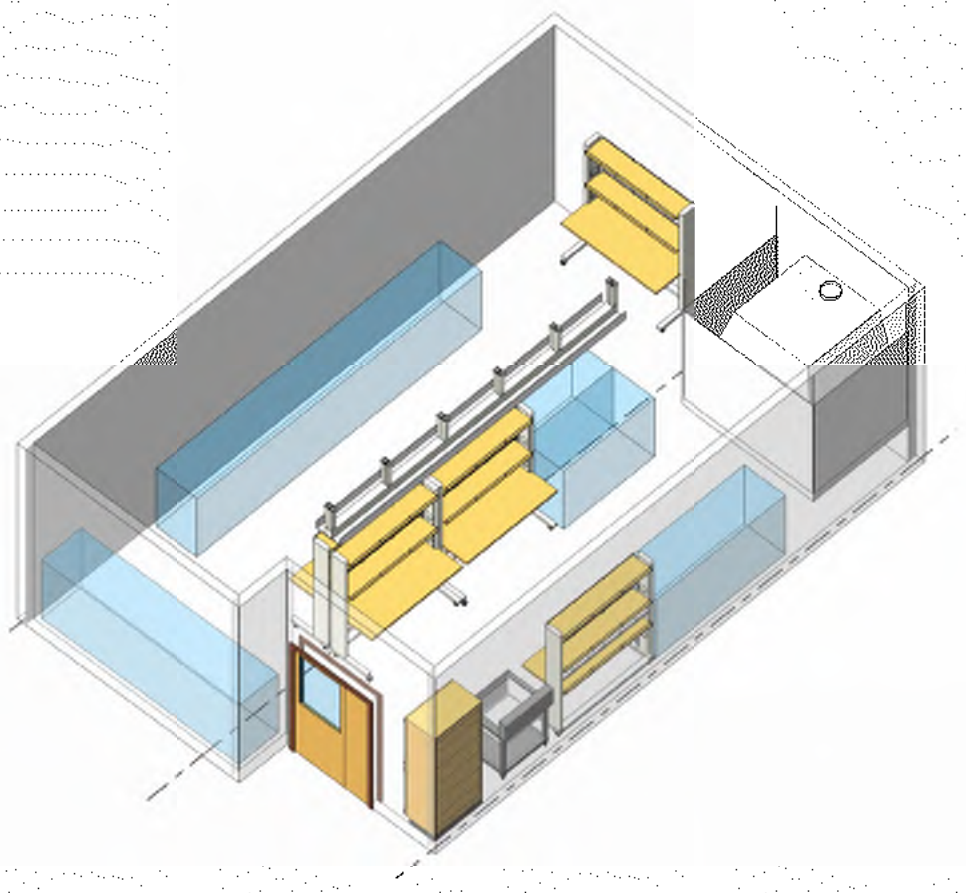
25. White Markerboard
26. Movable Laboratory Table
27. Metro Shelving
28. Tall Corrosive Storage Cabinet
29. Ice Machine
30. Equipment Exhaust
31. Full-View Hood
32. Multi-media Projector & Screen
33. Metro Shelving High Density
34. Scullery Sink
35. Drying Rack

DEPARTMENT: CE
SPACE NAME: WILD FIRE

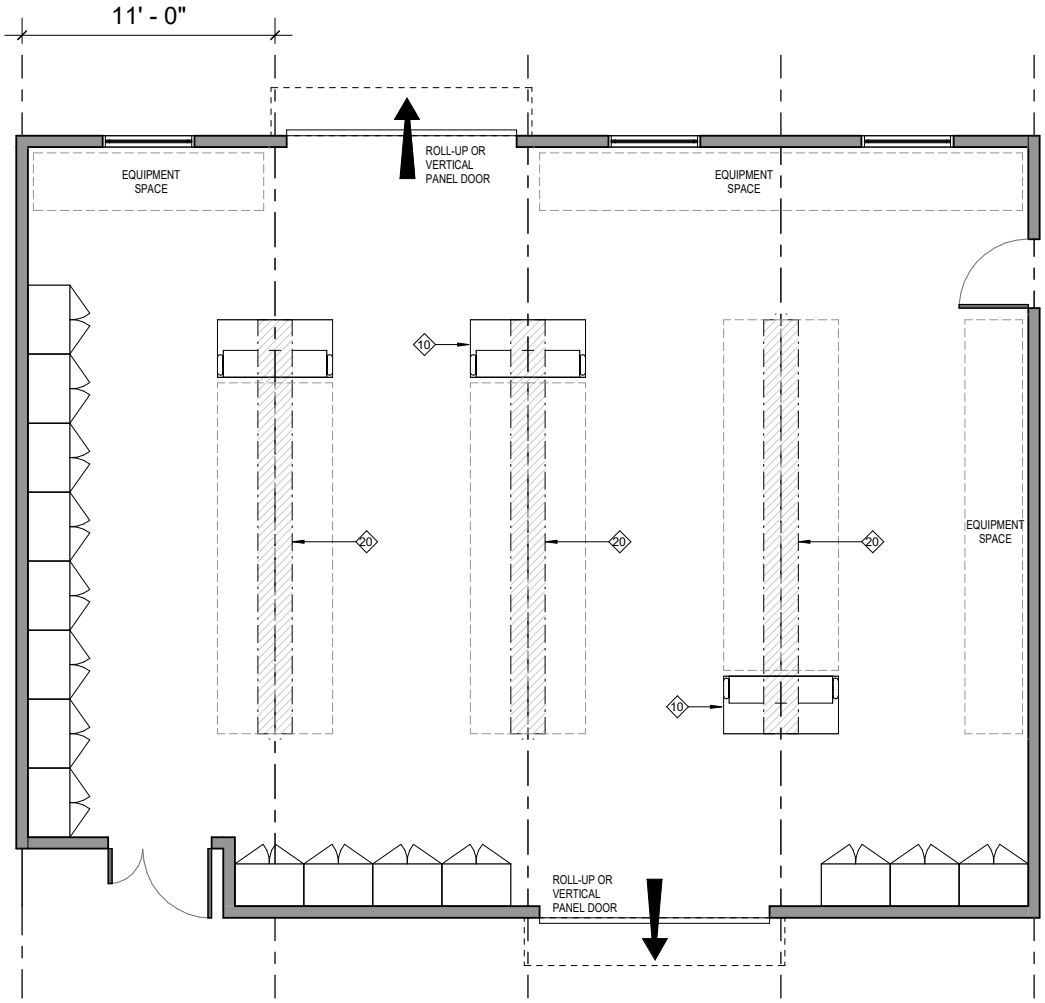
SPACE ID NO: 1.12 EB
AREA NSF: 726

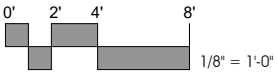
This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



DEPARTMENT: CE **SPACE ID NO: 1.19 EB**
SPACE NAME: PROJECTS STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.





FURNISHINGS

01. Chemical Fume Hood
02. Biological Safety Cabinet
03. Laminar Flow Hood
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05. Snorkel Exhaust
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31. Full-View Hood
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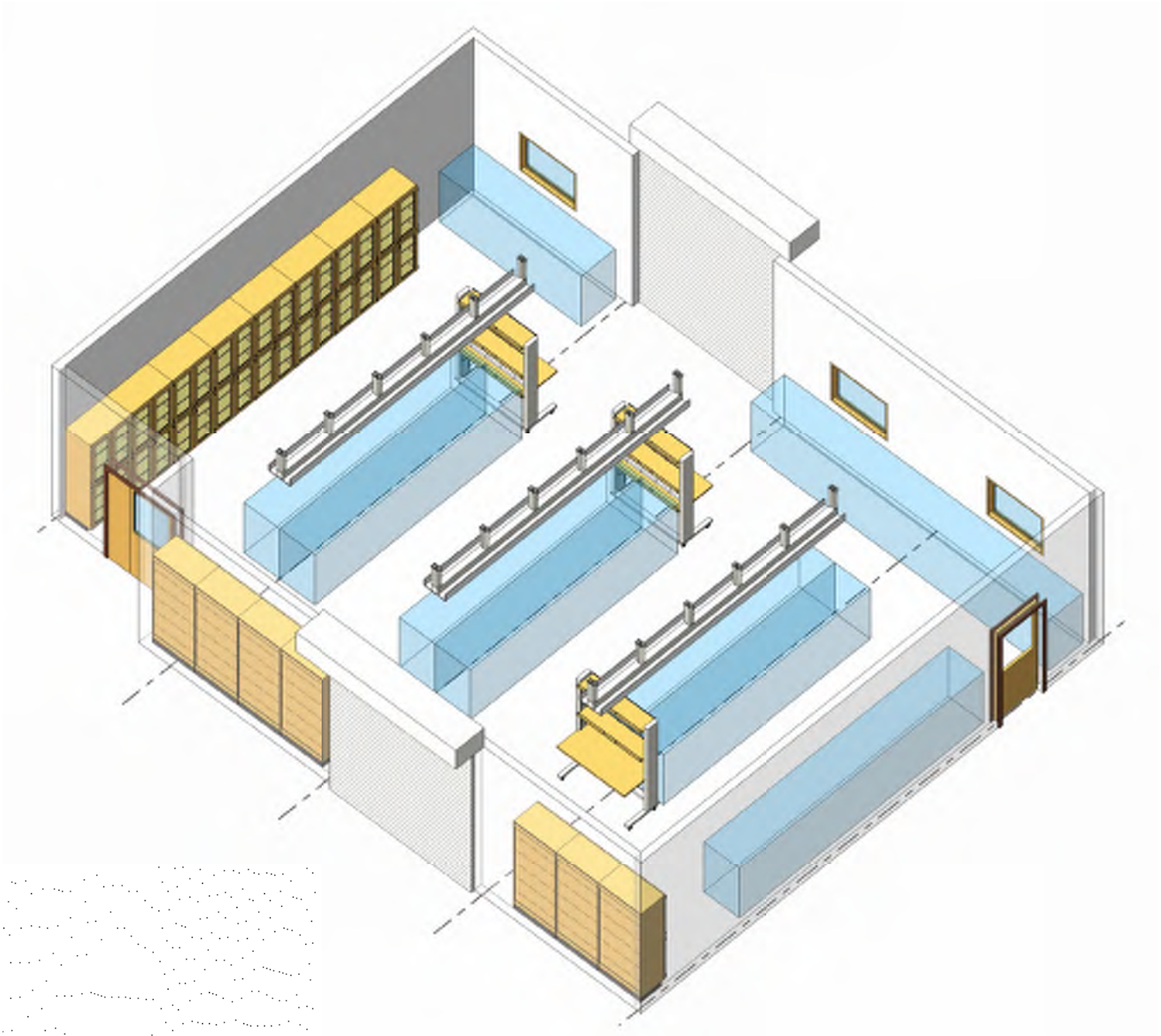
DEPARTMENT: CE **SPACE ID NO: 1.19 EB**
SPACE NAME: PROJECTS STORAGE **AREA NSF: 1,452**

This diagram is conceptual and is provided only to indicate required furnishings, equipment, and general room proportions. The actual room design may change.



Room Data Summary

Eastern Washington University - Engineering Building

Date: 6-13-24

LMN + Research Facilites Design

	Room Name	Equipment List Available	Vibration Criteria	Room Air					Services										
				Recirc Air	100% Exhasted - min. make-up	100% Exhasted with AC Rates	AC Rate Occupied (Minimum)	AC Rate Unoccupied (Minimum)	Safety Shower (Tempered) Potable	Eye Wash (Tempered) Potable	Hot & Cold (H/C) or Cold (C)	Purified Water (Type II) RO/DI	Process Cooling Water (CHWS&R)	Natural Gas (LG)	House or Local Vacuum (LV)	Local High Vacuum (Cabinet for OFOI Pump)	Shop Compressed Air (125psi with Regulator) (SA)	Clean Dry Compressed Air (125psi with Regulator) (CA)	Compressed Air (15 - 30 PSI) (LA)
	ME/MET Laboratory Space																		
	Plastics Lab					●	6	4	●	●	●						●		
	HVAC Teaching Lab				●					●	●						●		
	ME/MET Projects Lab				●					●	●						●		
	ME/MET Projects Storage				●												●		
	Tech Projects Lab				●					●	●						●		
	Tech Projects Storage				●												●		
	PLC- Controls - Sensor Lab				●					●	●							●	●
	Maker Space				●					●	●						●		
	Club Room				●					●	●						●	●	
	Material Science	●			●					●	●						●		
	Metallics Lab	●			●					●	●						●		
	Wood Shop	●			●					●	●						●		
	Additive Manufacturing				●					●	●						●		
	Composite Lab					●	6	4	●	●	●						●		
	Robotics Research Lab	●				●	6	4	●	●	●						●		
	Fluid Power Lab			●															
	Construction Lab				●					●	●						●		
	CE Laboratory Space																		
	ME/CE Thermodynamics Lab					●	6	4	●	●	●						●		
	Construction Engineering Lab					●	6	4	●	●	●						●		
	Construction Materials Lab					●	6	4	●	●	●						●		
	Transportation & Pavement Eng Lab					●	6	4	●	●	●							●	
	Environmental Eng Lab					●	6	4	●	●	●							●	
	Fluids/Water Resources Eng Lab				●					●	●						●		
	Concrete Lab				●					●	●						●		
	Concrete Testing Lab				●					●	●						●		
	Masters Research Lab				●					●	●						●		
	Wild Fire Lab					●	6	4		●	●						●		
	Project Storage				●												●		

Room Data Summary

Eastern Washington University - Engineering Building

Date: 6-13-24

LMN + Research Facilites Design

		Specialty Gasses					Power						Communications			
	Room Name	Nitrogen (N2)	Carbon Dioxide (CO2)	Specialty Gases - Inert	Specialty Gases - Flammable	Specialty Gases - Hazardous	120v	120v, Standby	208v, 1ph	208v, 1ph, Standby	208v, 3ph	480v	Video/Cable	Data Connection	Audio System	Projection or Monitors
	ME/MET Laboratory Space															
	Plastics Lab						●		●		●	●		●		
	HVAC Teaching Lab						●		●					●		
	ME/MET Projects Lab						●		●					●		
	ME/MET Projects Storage						●							●		
	Tech Projects Lab						●		●					●		
	Tech Projects Storage						●							●		
	PLC- Controls - Sensor Lab						●	●	●	●				●		
	Maker Space						●							●		
	Club Room						●							●		
	Material Science						●		●					●		
	Metallics Lab						●		●		●	●		●		
	Wood Shop						●		●		●			●		
	Additive Manufacturing						●		●		●			●		
	Composite Lab						●		●		●	●		●		
	Robotics Research Lab						●		●		●	●		●		
	Fluid Power Lab						●		●		●	●		●		
	Construction Lab						●		●		●			●		
	CE Laboratory Space															
	ME/CE Thermodynamics Lab						●		●		●			●		
	Construction Engineering Lab						●		●		●			●		
	Construction Materials Lab						●		●		●			●		
	Transportation & Pavement Eng Lab						●		●		●			●		
	Environmental Eng Lab						●		●		●			●		
	Fluids/Water Resources Eng Lab						●		●					●		
	Concrete Lab						●		●					●		
	Concrete Testing Lab						●		●					●		
	Masters Research Lab						●		●					●		
	Wild Fire Lab						●		●		●			●		
	Project Storage						●							●		

Room Data Summary

Eastern Washington University - Engineering Building

Date: 6-13-24

LMN + Research Facilites Design

	Room Name	Required 365/24/7 HVAC	Fume Hood	Exhaust Point of use	Temp. - Winter	Temp. - Summer	R.H. - Winter	R.H. - Summer
	ME/MET Laboratory Space							
	Plastics Lab			●	68°F Min	75°F Max	30% Min	70% Max
	HVAC Teaching Lab			●	68°F Min	75°F Max	30% Min	70% Max
	ME/MET Projects Lab				68°F Min	75°F Max	30% Min	70% Max
	ME/MET Projects Storage				68°F Min	75°F Max	30% Min	70% Max
	Tech Projects Lab				68°F Min	75°F Max	30% Min	70% Max
	Tech Projects Storage				68°F Min	75°F Max	30% Min	70% Max
	PLC- Controls - Sensor Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Maker Space			●	68°F Min	75°F Max	30% Min	70% Max
	Club Room				68°F Min	75°F Max	30% Min	70% Max
	Material Science			●	68°F Min	75°F Max	30% Min	70% Max
	Metallics Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Wood Shop			●	68°F Min	75°F Max	30% Min	70% Max
	Additive Manufacturing			●	68°F Min	75°F Max	30% Min	70% Max
	Composite Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Robotics Research Lab		●	●	68°F Min	75°F Max	30% Min	70% Max
	Fluid Power Lab				68°F Min	75°F Max	30% Min	70% Max
	Construction Lab			●	68°F Min	75°F Max	30% Min	70% Max
	CE Laboratory Space				68°F Min	75°F Max	30% Min	70% Max
	ME/CE Thermodynamics Lab		●	●	68°F Min	75°F Max	30% Min	70% Max
	Construction Engineering Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Construction Materials Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Transportation & Pavement Eng Lab		●	●	68°F Min	75°F Max	30% Min	70% Max
	Environmental Eng Lab		●	●	68°F Min	75°F Max	30% Min	70% Max
	Fluids/Water Resources Eng Lab				68°F Min	75°F Max	30% Min	70% Max
	Concrete Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Concrete Testing Lab				68°F Min	75°F Max	30% Min	70% Max
	Masters Research Lab				68°F Min	75°F Max	30% Min	70% Max
	Wild Fire Lab			●	68°F Min	75°F Max	30% Min	70% Max
	Project Storage				68oF Min	75oF Max	30% Min	70% Max

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9.6 PRELIMINARY CONSTRUCTION COST ESTIMATE

Construction Cost Summary

Owner: Eastern Washington University
Project: EWU Engineering Building

ESTIMATED COSTS SUMMARY

June 25, 2024

Alternative 1 - New Building with CEB Renovation

Item	Description	QTY	UOM	$ / UOM	Cost
1	New Engineering Building	82,522	BGSF	$ 696.60	$ 57,484,211
2	Existing Building Work - CEB	39,281	BGSF	$ 315.52	$ 12,393,885
3	Existing Building Work - Cheney	3,130	BGSF	$ 231.25	$ 723,811
4	Sitework	65,000	SGA	$ 69.21	$ 4,498,805
5	General Conditions & Support Services	32	MO	$ 115,000.00	$ 3,680,000
Total Estimated Construction Cost (Today's Dollars)					**$ 78,780,712**
6	Escalation to Midpoint (Q4, 2028)	18.00%	on	$ 78,780,712	$ 14,180,528
Total Construction Cost (Escalated)					**$ 92,961,240**

COMMENTS:

Design, Bid, Build delivery method is assumed
Assumes a Q3, 2027 start and a 32 month schedule
No Site Frontage Improvements are included or anticipated.

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - New Building

RØEN ASSOCIATES

Project Owner:	**Eastern Washington University**	**Architect:**	LMN Architects
Project Name:	**EWU Engineering Building**	**Project Duration:**	32 MO
Project Location:	Cheney, WA	**Building GSF:**	82,522
Project Start Date:	Q3, 2027	**Site GSF:**	65,000
Estimate Date:	June 25, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	82,522	BGSF	$ 15.36	$ 1,267,643
A20	Basement Construction	82,522	BGSF	$ 6.98	$ 575,940
B10	Superstructure	82,522	BGSF	$ 70.44	$ 5,812,905
B20	Exterior Enclosure	82,522	BGSF	$ 44.61	$ 3,681,412
B30	Roofing	82,522	BGSF	$ 14.16	$ 1,168,398
C10	Interior Construction	82,522	BGSF	$ 37.80	$ 3,119,207
C20	Stairs	82,522	BGSF	$ 2.12	$ 175,000
C30	Interior Finishes	82,522	BGSF	$ 41.11	$ 3,392,694
D10	Conveying Systems	82,522	BGSF	$ 6.36	$ 525,000
D20	Plumbing	82,522	BGSF	$ 42.00	$ 3,465,924
D30	HVAC	82,522	BGSF	$ 108.00	$ 8,912,376
D40	Fire Protection	82,522	BGSF	$ 5.50	$ 453,871
D50	Electrical	82,522	BGSF	$ 98.00	$ 8,087,156
E10	Equipment	82,522	BGSF	$ 45.00	$ 3,213,230
E20	Casework & Furnishings	82,522	BGSF	$ 11.13	$ 918,880
F10	Special Construction	82,522	BGSF	$ -	$ -
F20	Selective Demolition	82,522	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 44,769,635**
	Design Contingency			18%	$ 8,953,927
	Subtotal				$ 53,723,562
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 3,760,649
	Subtotal				$ 57,484,211
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**82,522**	**BGSF**	**$ 696.60**	**$ 57,484,211**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**						
	Foundation Earthwork						
	Footing Excavation and Backfill (Native Soil)	4,231	cy	$	45.00	$	190,400
	Footing Drains with Gravel	720	lf	$	30.00	$	21,600
	Foundations						
	Spread Footings (includes reinforcing)	160	cy	$	940.00	$	150,400
	Continuous Footings (includes reinforcing)	213	cy	$	700.00	$	149,333
	Perimeter Stem Wall (includes reinforcing)	67	cy	$	2,080.00	$	138,667
	Concrete Columns and Plinths						
	Square	89	cy	$	2,110.00	$	187,556
	Existing Building Foundation Tie-in (Drill & Epoxy)	1	ls	$	20,000.00	$	20,000
	Slab-on-Grade						
	Slab on Grade (includes reinforcing, base course and vapor barrier)	23,645	sf	$	9.50	$	224,628
	Misc. Concrete						
	Housekeeping Pads - Allowance	1,500	sf	$	20.00	$	30,000
	Elevator Pits (includes ladder, hoist beam, sump & waterproofing)	2	ea	$	30,000.00	$	60,000
	Set Column Anchor Bolts	60	set	$	350.00	$	21,000
	Grout Baseplates	60	ea	$	75.00	$	4,500
	Architectural Precast - Allowance	1	ls	$	35,000.00	$	35,000
	Perimeter Insulation / Waterproofing						
	2" Rigid Polystyrene	2,880	sf	$	4.00	$	11,520
	Stem Wall Dampproofing	2,880	sf	$	8.00	$	23,040
	SUBTOTAL FOUNDATIONS	**82,522**	**BGSF**	**$**	**15.36**	**$**	**1,267,643**
A20	**BASEMENT CONSTRUCTION**						
	Basement Excavation						
	Basement Excavation and Export (Check against Site Section G10)						
	Basement Walls						
	Perimeter 12" Basement Wall (Includes Reinforcing)	6,620	sf	$	69.00	$	456,780
	Waterproofing						
	Below Grade Assembly (2" Rigid Insul, Membrane, Drain Mat, Protection Board	6,620	sf	$	18.00	$	119,160
	SUBTOTAL BASEMENT CONSTRUCTION	**82,522**	**BGSF**	**$**	**6.98**	**$**	**575,940**
B10	**SUPERSTRUCTURE**						
	CIP Structural Concrete						
	Vertical Structure						
	Walls, Cast-In-Place with Reinforcing	288	cy	$	1,870.00	$	538,837
	Horizontal Structure						
	Topping Slabs						
	6" Slab over Metal Floor Deck with Reinforcing	58,877	sf	$	10.00	$	588,770

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Structural CMU and Masonry						
	8" CMU (Elevator)	3,976	sf	$	34.00	$	135,184
	Structural Steel						
	Floor & Roof Structure, Beams & Columns (includes 15% for connections)						
	Structural Framing (12 psf Allowance for Floor)	706,524	lbs	$	3.50	$	2,472,834
	Structural Framing (10 psf Allowance for Roof)	252,800	lbs	$	3.50	$	884,800
	Moment and Brace Frames						
	Brace Framing - Allowance	20,000	lbs	$	4.00	$	80,000
	Metal Decking						
	Floor Decking - 3"	58,877	sf	$	9.00	$	529,893
	Roofing Decking - 1.5"	25,280	sf	$	6.00	$	151,680
	Miscellaneous Metals						
	Structural Support for Vent Stacks - Allowance	1	ls	$	50,000.00	$	50,000
	Miscellaneous Metals - Allowance	82,522	gsf	$	1.00	$	82,522
	Elevator Pit Ladder and Hoist Beam	2	ea	$	2,000.00	$	4,000
	Fireproofing						
	Structural Steel Fireproofing						
	Sprayed Cementitious Fireproofing (Metal Deck Area)	58,877	sf	$	5.00	$	294,385
	Firestopping - See Interior Partitions						
	SUBTOTAL SUPERSTRUCTURE	**82,522**	**BGSF**	**$**	**70.44**	**$**	**5,812,905**
B20	**EXTERIOR ENCLOSURE**						
	Exterior Wall Construction						
	Exterior Wall Assembly (GWB - Finish 1 Side, vapor barrier, metal studs, R-13 batt insulation, sheathing, 2 1/2" rigid insulation, WRB)	19,912	sf	$	33.50	$	667,035
	Exterior Wall Finish						
	Masonry Veneer						
	Brick Veneer @ 50% of the Exterior	14,223	sf	$	45.00	$	640,013
	Galvanized Steel Lintels - Allowance	500	lf	$	40.00	$	20,000
	Sill Flashing - Allowance	500	lf	$	25.00	$	12,500
	Metal Panels						
	Composite Metal Panel @ 20% of the Exterior	5,689	sf	$	70.00	$	398,230
	Exterior Feature Elements - Allowance	1	ls	$	100,000	$	100,000
	Exterior Soffits						
	Finish to Soffits (Entry and/or Overhangs)		None Shown				
	Exterior Windows						
	Storefront/Curtain Walls (at 30% of the Exterior)	10,809	sf	$	110.00	$	1,189,007
	Premium - Glazing (Allowance)	1,200	sf	$	40.00	$	48,000
	Expansion/Seismic Joints						
	Roof Joints	103	lf	$	500.00	$	51,500
	Exterior Wall Joints	136	lf	$	500.00	$	68,000

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
	Exterior Doors				
	Storefront Entry Doors, Hardware, per leaf	8	ea	$ 7,500.00	$ 60,000
	Push Button ADA Auto Operators (per entrance)	2	ea	$ 4,000.00	$ 8,000
	Ext. HM Dr, HM Frame, Hardware, per leaf	2	ea	$ 3,600.00	$ 7,200
	Exit Devices	8	ea	$ 800.00	$ 6,400
	Overhead Roll-up Doors (Large)	16	ea	$ 18,000.00	$ 288,000
	Exterior Paint & Sealants				
	Masonry Water Repellants	14,223	sf	$ 2.50	$ 35,556
	Anti-Graffiti Coating (up to 8')	5,120	sf	$ 3.00	$ 15,360
	Paint to HM Doors and Frames	2	ea	$ 175.00	$ 350
	Exterior - Control Joints, Caulking and Joint Sealants	82,522	gsf	$ 0.50	$ 41,261
	Building Graphics				
	Allowance for Building Signage	1	ls	$ 25,000.00	$ 25,000
	SUBTOTAL EXTERIOR ENCLOSURE	**82,522**	**BGSF**	**$ 44.61**	**$ 3,681,412**
B30	**ROOFING**				
	Roof Coverings				
	Membrane Roofing System with Rigid Insulation	25,280	sf	$ 24.00	$ 606,720
	Membrane Roofing Lapping up Backside of Parapets	6,320	sf	$ 18.00	$ 113,760
	Flashing and Sheet Metal				
	Parapet Caps and Copings	1,580	lf	$ 30.00	$ 47,400
	Miscellaneous Roof Flashing and Blocking	10%	on	$ 720,480	$ 72,048
	Skylights				
	Aluminum Skylights	3,562	sf	$ 85.00	$ 302,770
	Roof Accessories				
	Walk Pads - Allowance	500	sf	$ 10.00	$ 5,000
	Fall Protection Anchors	20	ea	$ 750.00	$ 15,000
	Access Ladders	1	ea	$ 3,500.00	$ 3,500
	Roof Hatches with Safety Railing	1	ea	$ 2,200.00	$ 2,200
	SUBTOTAL ROOFING	**82,522**	**BGSF**	**$ 14.16**	**$ 1,168,398**
C10	**INTERIOR CONSTRUCTION**				
	Partitions				
	GWB Partition (GWB - Finish 2 Sides, metal studs, sound batts)	67,498	sf	$ 18.00	$ 1,214,955
	Premium for Impact Resistant Wallboard - Allowance	67,498	sf	$ 2.50	$ 168,744
	Premium for Fire & Smoke Rated Walls - Allowance	67,498	sf	$ 2.00	$ 134,995
	Fire Caulking at Penetrations	82,522	gsf	$ 0.35	$ 28,883
	Interior - Caulking and Joint Sealants	82,522	gsf	$ 0.30	$ 24,757
	Miscellaneous Carpentry - Allowance	82,522	gsf	$ 1.50	$ 123,783
	Patchwork at Existing Building - Allowance	1	ls	$ 15,000.00	$ 15,000
	CMU Walls - See B10 Superstructure Above				

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Interior Glazing						
	Interior Storefront with 1/4" tempered glazing - Allowance	3,553	sf	$	65.00	$	230,913
	HM Sidelights/Relites with 1/4" tempered glazing - Allowance	180	sf	$	35.00	$	6,300
	Interior Doors, Frames, Hardware						
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	48	ea	$	3,600.00	$	172,800
	HM / SCW Dr, HM Frame, Hardware, Complete with Vision Panel - per leaf	66	ea	$	4,000.00	$	264,000
	HM / SCW Dr, HM Frame, Hardware, Complete, Uneven Double Door with Vision Panel	4	ea	$	5,500.00	$	22,000
	Overhead Roll-up Doors (Large)	1	ea	$	18,000.00	$	18,000
	Aluminum Storefront Doors, HW, Complete - per leaf	8	ea	$	7,500.00	$	60,000
	Interior Railings						
	Balcony Rails	245	lf	$	350.00	$	85,750
	Sloping Stair Rails and Grabs - Included with Stairs Below						
	Fittings / Specialties						
	Visual Displays						
	Marker Boards / Visual Displays - Allowance	1	ls	$	75,000.00	$	75,000
101400	Signage (Code and Wayfinding)	82,522	gsf	$	0.75	$	61,892
102113	Toilet Compartments (Phenolic)						
	ADA Stalls	6	stalls	$	1,300.00	$	7,800
	Standard Stalls	12	stalls	$	1,100.00	$	13,200
	Urinal Screens	6	ea	$	350.00	$	2,100
101400	Toilet Accessories						
102800	Baby Changing Station	2	ea	$	750.00	$	1,500
	Coat Hook	20	ea	$	45.00	$	900
	Electric Hand Dryer	8	ea	$	200.00	$	1,600
	Framed Mirror	20	ea	$	150.00	$	3,000
	Grab Bars - Large ADA Stall (3 Total: 1 - Vertical, 2-Horizontal)	8	set	$	400.00	$	3,200
	Paper Towel Dispenser	8	ea	$	175.00	$	1,400
	Sanitary Napkin Dispenser	3	ea	$	75.00	$	225
	Sanitary Napkin Disposal	12	ea	$	85.00	$	1,020
	Soap Dispenser	20	ea	$	85.00	$	1,700
	Toilet Paper Dispenser	20	ea	$	60.00	$	1,200
	Toilet Seat Cover Dispenser	20	ea	$	120.00	$	2,400
	Trash Receptacle (Recessed)	8	ea	$	350.00	$	2,800
	Operable Partitions						
102233	Folding Panel Partitions - Allowance	3,300	sf	$	85.00	$	280,500
	Header Support	200	lf	$	125.00	$	25,000
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	82,522	gsf	$	0.75	$	61,892
	SUBTOTAL INTERIOR CONSTRUCTION	**82,522**	**BGSF**	**$**	**37.80**	**$**	**3,119,207**

No.	ESTIMATE SUMMARY Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
C20	**STAIRS**				
	Stair Construction (includes concrete, finishes and guard/hand rails)				
Stair 1	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	2	flights	$ 35,000.00	$ 70,000
Stair 2	Pre-Engineered Metal Stair, per floor to floor flight w/ landing	3	flights	$ 35,000.00	$ 105,000
	SUBTOTAL STAIRS	**82,522**	**BGSF**	**$ 2.12**	**$ 175,000**
C30	**INTERIOR FINISHES**				
	Wall Finishes				
	Paint to Walls, Doors, Frames and Miscellaneous	82,522	gsf	$ 5.00	$ 412,610
	Premium for Acoustic Wall Panels - Allowance	82,522	gsf	$ 4.00	$ 330,088
	Restroom Wall Tile	4,120	sf	$ 30.00	$ 123,600
	Hardwood Architectural Detailing @ Student Study Lounge / Work Area - Allowance	82,522	sf	$ 3.00	$ 247,566
	Miscellaneous Finish Carpentry Allowance	82,522	gsf	$ 0.50	$ 41,261
	Bases				
	Rubber Base	6,668	lf	$ 3.00	$ 20,004
	Tile Base @ Restrooms	515	lf	$ 30.00	$ 15,450
	Wood Base @ Corridors	2,600	lf	$ 20.00	$ 52,000
	Floor Finishes				
	Carpet	5,295	sf	$ 6.00	$ 31,770
	Ceramic Tile @ Restrooms	1,895	sf	$ 20.00	$ 37,900
	Polished or Honed Concrete	23,486	sf	$ 7.50	$ 176,145
	Sealed Concrete	39,716	sf	$ 3.00	$ 119,148
	Durable Traffic Coating @ Mechanical Penthouse	2,840	sf	$ 15.00	$ 42,600
	Walk-Off Mat	800	sf	$ 12.00	$ 9,600
	Floor Prep / Moisture Vapor Reducer	74,032	sf	$ 1.00	$ 74,032
	Ceiling Finishes				
	ACT Ceiling (2x2) - Standard @ Tech Office Suite / Offices	1,950	sf	$ 9.00	$ 17,550
	Vestibule Ceiling - Allowance	782	sf	$ 45.00	$ 35,190
	Wood Slat Ceiling Clouds @ Public Circulation & Collaboration Areas - Allowance	27,020	sf	$ 50.00	$ 1,351,000
	GWB Ceiling, Painted @ Restrooms & Storage	4,350	sf	$ 12.00	$ 52,200
	GWB Vertical Soffits - Allowance	1	ls	$ 30,000	$ 30,000
	Grid System - Allowance	1	ls	$ 25,000	$ 25,000
	Exposed Ceiling, Painted @ Remaining Spaces & Penthouse) - Allowance	42,280	sf	$ 3.50	$ 147,980
	SUBTOTAL INTERIOR FINISHES	**82,522**	**BGSF**	**$ 41.11**	**$ 3,392,694**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	Hydraulic Elevator (3) Stops	3	ea	$	75,000	$	225,000
	Hydraulic Elevator (4) Stops	4	ea	$	75,000	$	300,000
	SUBTOTAL CONVEYING SYSTEMS	**82,522**	**BGSF**	**$**	**6.36**	**$**	**525,000**
D20	**PLUMBING**						
	Plumbing						
	Per MW budget estimate dated 6-11-24	82,522	gsf	$	42.00	$	3,465,924
	SUBTOTAL PLUMBING	**82,522**	**BGSF**	**$**	**42.00**	**$**	**3,465,924**
D30	**HVAC**						
	HVAC						
	Per MW budget estimate dated 6-11-24	82,522	gsf	$	108.00	$	8,912,376
	SUBTOTAL HVAC	**82,522**	**BGSF**	**$**	**108.00**	**$**	**8,912,376**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Per MW budget estimate dated 6-11-24	82,522	gsf	$	5.50	$	453,871
	SUBTOTAL FIRE PROTECTION	**82,522**	**BGSF**	**$**	**5.50**	**$**	**453,871**
D50	**ELECTRICAL**						
	Electrical						
	Per MW budget estimate dated 6-11-24	82,522	gsf	$	98.00	$	8,087,156
	SUBTOTAL ELECTRICAL	**82,522**	**BGSF**	**$**	**98.00**	**$**	**8,087,156**
E10	**EQUIPMENT**						
115300	**Laboratory Equipment**						
	Laboratory Equipment (Incl. Fumehoods & Stainless Steel Lab Equipments) - Allowance	82,522	gsf	$	38.93	$	3,213,230
	SUBTOTAL EQUIPMENT	**82,522**	**BGSF**	**$**	**38.93**	**$**	**3,213,230**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	82,522	gsf	$	8.50	$	701,437
	Window Treatment						
	Mini Blinds - Sidelites/Relites	180	sf	$	7.00	$	1,260
	Roller Shades	10,809	sf	$	20.00	$	216,183

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
	Moveable Furnishings				
	EXCLUDED				
	SUBTOTAL FURNISHINGS	**82,522**	**BGSF**	**$ 11.13**	**$ 918,880**
F10	**SPECIAL CONSTRUCTION**				
	Special Construction				
	SUBTOTAL SPECIAL CONSTRUCTION	**82,522**	**BGSF**	**$ -**	**$ -**
F20	**SELECTIVE BUILDING DEMOLITION**				
	Selective Building Demolition				
	Hazardous Components Abatement				
	None				
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**82,522**	**BGSF**	**$ -**	**$ -**
Z10	**GENERAL REQUIREMENTS**				
	General Conditions				
	See Summary				
	SUBTOTAL GENERAL REQUIREMENTS	**82,522**	**BGSF**	**$ -**	**$ -**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - CEB Building

ROEN ASSOCIATES

Project Owner:	**Eastern Washington University**	**Architect:**	LMN Architects
Project Name:	**EWU Engineering Building**	**Project Duration:**	32 MO
Project Location:	Cheney, WA	**Building GSF:**	39,281
Project Start Date:	Q3, 2027	**Site GSF:**	-
Estimate Date:	June 25, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	39,281	BGSF	$ -	$ -
A20	Basement Construction	39,281	BGSF	$ -	$ -
B10	Superstructure	39,281	BGSF	$ -	$ -
B20	Exterior Enclosure	39,281	BGSF	$ -	$ -
B30	Roofing	39,281	BGSF	$ -	$ -
C10	Interior Construction	39,281	BGSF	$ 28.91	$ 1,135,668
C20	Stairs	39,281	BGSF	$ -	$ -
C30	Interior Finishes	39,281	BGSF	$ 32.88	$ 1,291,712
D10	Conveying Systems	39,281	BGSF	$ -	$ -
D20	Plumbing	39,281	BGSF	$ 13.30	$ 522,437
D30	HVAC	39,281	BGSF	$ 99.14	$ 3,894,156
D40	Fire Protection	39,281	BGSF	$ 3.70	$ 145,340
D50	Electrical	39,281	BGSF	$ 49.00	$ 1,924,769
E10	Equipment	39,281	BGSF	$ 6.66	$ 261,544
E20	Casework & Furnishings	39,281	BGSF	$ 7.74	$ 304,035
F10	Special Construction	39,281	BGSF	$ -	$ -
F20	Selective Demolition	39,281	BGSF	$ 8.57	$ 336,500
BUILDING CONSTRUCTION SUBTOTAL					**$ 9,816,161**
	Design Contingency			18%	$ 1,766,909
	Subtotal				$ 11,583,070
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 810,815
	Subtotal				$ 12,393,885
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**39,281**	**BGSF**	**$ 315.52**	**$ 12,393,885**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - CEB Building

ROEN ASSOCIATES

ESTIMATE SUMMARY						
No.	Description	Quantity	Unit of Measure		Unit Cost	Total Estimated Cost
A10	**FOUNDATIONS**					
	Foundations					
	SUBTOTAL FOUNDATIONS	**39,281**	**BGSF**	**$**	**-**	**$ -**
A20	**BASEMENT CONSTRUCTION**					
	Basement Construction					
	SUBTOTAL BASEMENT CONSTRUCTION	**39,281**	**BGSF**	**$**	**-**	**$ -**
B10	**SUPERSTRUCTURE**					
	Superstructure					
	SUBTOTAL SUPERSTRUCTURE	**39,281**	**BGSF**	**$**	**-**	**$ -**
B20	**EXTERIOR ENCLOSURE**					
	Exterior Enclosure					
	SUBTOTAL EXTERIOR ENCLOSURE	**39,281**	**BGSF**	**$**	**-**	**$ -**
B30	**ROOFING**					
	Roofing					
	SUBTOTAL ROOFING	**39,281**	**BGSF**	**$**	**-**	**$ -**
C10	**INTERIOR CONSTRUCTION**					
	Partitions					
	GWB Partition (GWB - Finish 2 Sides, metal studs, sound batts)	30,639	sf	$	18.00	$ 551,505
	STC Rated Walls - Allowance	15,320	sf	$	6.00	$ 91,918
	Fire Caulking at Penetrations	39,281	gsf	$	0.35	$ 13,748
	Interior - Caulking and Joint Sealants	39,281	gsf	$	0.30	$ 11,784
	Miscellaneous Carpentry - Allowance	39,281	gsf	$	1.00	$ 39,281
	Interior Glazing					
	Interior Storefront with 1/4" tempered glazing - Allowance	786	sf	$	65.00	$ 51,065
	HM Sidelights/Relites with 1/4" tempered glazing - Allowance	1,178	sf	$	35.00	$ 41,245
	Interior Doors, Frames, Hardware					
	HM / SCW Dr, HM Frame, Hardware, Complete - per leaf	47	ea	$	3,600.00	$ 169,200
	HM / SCW Dr, HM Frame, Hardware, Complete with Vision Panel - per leaf	18	ea	$	4,000.00	$ 72,000
	Fittings / Specialties					
	Visual Displays					
	Marker Boards / Visual Displays - Allowance	1	ls	$	35,000.00	$ 35,000

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
101400	Signage (Code and Wayfinding)	39,281	gsf	$	0.75	$	29,461
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	39,281	gsf	$	0.75	$	29,461
	SUBTOTAL INTERIOR CONSTRUCTION	**39,281**	**BGSF**	**$**	**28.91**	**$**	**1,135,668**
C20	**STAIRS**						
	Stairs						
	SUBTOTAL STAIRS	**39,281**	**BGSF**	**$**	**-**	**$**	**-**
C30	**INTERIOR FINISHES**						
	Wall Finishes						
	Paint to Walls, Doors, Frames and Miscellaneous	39,281	gsf	$	5.00	$	196,405
	P-Lam Wainscot - Allowance	2,000	sf	$	25.00	$	50,000
	Acoustical Wall Treatment - Allowance	39,281	gsf	$	4.00	$	157,124
	Miscellaneous Finish Carpentry Allowance	39,281	gsf	$	1.00	$	39,281
	Bases						
	Rubber Base	8,728	lf	$	3.00	$	26,185
	Wood Base (Corridor - Ground Floor)	873	lf	$	20.00	$	17,456
	Floor Finishes						
	Carpet, Polished Concrete, Sealed Concrete, VCT, LVT - Allowance	39,281	sf	$	9.50	$	373,170
	Floor Prep / Moisture Vapor Reducer	39,281	sf	$	1.00	$	39,281
	Ceiling Finishes						
	ACT Ceiling (2x2), Painted GWB Ceiling, Painted Exposed Ceiling - Allowance	39,281	gsf	$	10.00	$	392,810
	SUBTOTAL INTERIOR FINISHES	**39,281**	**BGSF**	**$**	**32.88**	**$**	**1,291,712**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	SUBTOTAL CONVEYING SYSTEMS	**39,281**	**BGSF**	**$**	**-**	**$**	**-**
D20	**PLUMBING**						
	Plumbing						
	Per MW budget estimate dated 6-11-24	39,281	gsf	$	13.30	$	522,437
	SUBTOTAL PLUMBING	**39,281**	**BGSF**	**$**	**13.30**	**$**	**522,437**
D30	**HVAC**						
	HVAC						
	Per MW budget estimate dated 6-11-24	39,281	gsf	$	50.27	$	1,974,656

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Upgrade of Existing CEB Infrastructure to connect to New Geothermal System - Allowance (per MW budget estimate dated 6-11-24)	39,281	gsf	$	48.87	$	1,919,500
	SUBTOTAL HVAC	**39,281**	**BGSF**	**$**	**99.14**	**$**	**3,894,156**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Per MW budget estimate dated 6-11-24	39,281	gsf	$	3.70	$	145,340
	SUBTOTAL FIRE PROTECTION	**39,281**	**BGSF**	**$**	**3.70**	**$**	**145,340**
D50	**ELECTRICAL**						
	Electrical						
	Per MW budget estimate dated 6-11-24	39,281	gsf	$	49.00	$	1,924,769
	SUBTOTAL ELECTRICAL	**39,281**	**BGSF**	**$**	**49.00**	**$**	**1,924,769**
E10	**EQUIPMENT**						
115300	**Laboratory Equipment**						
	Laboratory Equipment - Per RFD	1	ls	$	261,544	$	261,544
	SUBTOTAL EQUIPMENT	**39,281**	**BGSF**	**$**	**6.66**	**$**	**261,544**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	39,281	sf	$	7.50	$	294,608
	Window Treatment						
	Mini Blinds - Sidelites/Relites	1,178	sf	$	8.00	$	9,427
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**39,281**	**BGSF**	**$**	**7.74**	**$**	**304,035**
F10	**SPECIAL CONSTRUCTION**						
	Special Construction						
	SUBTOTAL SPECIAL CONSTRUCTION	**39,281**	**BGSF**	**$**	**-**	**$**	**-**
F20	**SELECTIVE BUILDING DEMOLITION**						
	Building Structural Demolition						
	Slab on grade removal and replace - Allowance	1	ls	$	25,000.00	$	25,000
	Building Exterior Demolition						
	Brace, Protect and Preserve Existing Wall @ New Openings	3	ea	$	1,500.00	$	4,500
	Building Interior Demolition						
	Existing Elevator	1	ls	$	10,000.00	$	10,000

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Partitions	2,355	lf	$	15.00	$	35,325
	Door, Frame & HW	92	ea	$	120.00	$	11,040
	Flooring	39,281	sf	$	1.50	$	58,922
	Rubber Base	8,728	lf	$	1.00	$	8,728
	Ceilings	39,281	sf	$	1.50	$	58,922
	Casework	635	lf	$	15.00	$	9,525
	Miscellaneous Demolition	240	hrs	$	120.00	$	28,800
	Temporary Partitions / Dust Control - Allowance	1,500	sf	$	25.00	$	37,500
	Phasing - Allowance	2	ea	$	2,500.00	$	5,000
	Supervision, Hauling & Dump Fees	15%	on	$	288,261	$	43,239
	Mechanical, Electrical and Plumbing	In MEP Numbers Above					
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**39,281**	**BGSF**	**$**	**8.57**	**$**	**336,500**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**39,281**	**BGSF**	**$**	**-**	**$**	**-**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Cheney Hall

Project Owner:	**Eastern Washington University**	**Architect:**	LMN Architects
Project Name:	**EWU Engineering Building**	**Project Duration:**	32 MO
Project Location:	Cheney, WA	**Building GSF:**	3,130
Project Start Date:	Q3, 2027	**Site GSF:**	-
Estimate Date:	June 25, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
A10	Foundations	3,130	BGSF	$ -	$ -
A20	Basement Construction	3,130	BGSF	$ -	$ -
B10	Superstructure	3,130	BGSF	$ -	$ -
B20	Exterior Enclosure	3,130	BGSF	$ -	$ -
B30	Roofing	3,130	BGSF	$ -	$ -
C10	Interior Construction	3,130	BGSF	$ 7.20	$ 22,532
C20	Stairs	3,130	BGSF	$ -	$ -
C30	Interior Finishes	3,130	BGSF	$ 34.88	$ 109,160
D10	Conveying Systems	3,130	BGSF	$ -	$ -
D20	Plumbing	3,130	BGSF	$ 13.30	$ 41,629
D30	HVAC	3,130	BGSF	$ 50.27	$ 157,345
D40	Fire Protection	3,130	BGSF	$ 3.70	$ 11,581
D50	Electrical	3,130	BGSF	$ 49.00	$ 153,370
E10	Equipment	3,130	BGSF	$ 8.06	$ 25,226
E20	Casework & Furnishings	3,130	BGSF	$ 7.50	$ 23,475
F10	Special Construction	3,130	BGSF	$ -	$ -
F20	Selective Demolition	3,130	BGSF	$ 9.25	$ 28,951
BUILDING CONSTRUCTION SUBTOTAL					**$ 573,270**
	Design Contingency			18%	$ 103,189
	Subtotal				$ 676,459
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 47,352
	Subtotal				$ 723,811
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**3,130**	**BGSF**	**$ 231.25**	**$ 723,811**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Cheney Hall

ROEN ASSOCIATES

ESTIMATE SUMMARY						
No.	Description	Quantity	Unit of Measure	Unit Cost		Total Estimated Cost
A10	**FOUNDATIONS**					
	Foundations					
	SUBTOTAL FOUNDATIONS	**3,130**	**BGSF**	**$**	**-**	**$ -**
A20	**BASEMENT CONSTRUCTION**					
	Basement Construction					
	SUBTOTAL BASEMENT CONSTRUCTION	**3,130**	**BGSF**	**$**	**-**	**$ -**
B10	**SUPERSTRUCTURE**					
	Superstructure					
	SUBTOTAL SUPERSTRUCTURE	**3,130**	**BGSF**	**$**	**-**	**$ -**
B20	**EXTERIOR ENCLOSURE**					
	Exterior Enclosure					
	SUBTOTAL EXTERIOR ENCLOSURE	**3,130**	**BGSF**	**$**	**-**	**$ -**
B30	**ROOFING**					
	Roofing					
	SUBTOTAL ROOFING	**3,130**	**BGSF**	**$**	**-**	**$ -**
C10	**INTERIOR CONSTRUCTION**					
	Partitions					
	GWB Interior Wall Repair - Allowance	3,130	gsf	$	3.25	$ 10,173
	Fire Caulking at Penetrations	3,130	gsf	$	0.35	$ 1,096
	Interior - Caulking and Joint Sealants	3,130	gsf	$	0.30	$ 939
	Miscellaneous Carpentry - Allowance	3,130	gsf	$	1.00	$ 3,130
	Fittings / Specialties					
	Visual Displays					
	Marker Boards / Visual Displays - Allowance	1	ls	$	2,500.00	$ 2,500
101400	Signage (Code and Wayfinding)	3,130	gsf	$	0.75	$ 2,348
	Misc. Specialties Allowance (FECs, Corner Guards, etc...)	3,130	gsf	$	0.75	$ 2,348
	SUBTOTAL INTERIOR CONSTRUCTION	**3,130**	**BGSF**	**$**	**7.20**	**$ 22,532**
C20	**STAIRS**					
	Stairs					
	SUBTOTAL STAIRS	**3,130**	**BGSF**	**$**	**-**	**$ -**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Cheney Hall

ROEN ASSOCIATES

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
C30	**INTERIOR FINISHES**						
	Wall Finishes						
	Paint to Walls, Doors, Frames and Miscellaneous	3,130	gsf	$	5.00	$	15,650
	P-Lam Wainscot - Allowance	1	ls	$	15,000.00	$	15,000
	Acoustical Wall Treatment - Allowance	1	ls	$	10,000.00	$	10,000
	Miscellaneous Finish Carpentry Allowance	3,130	gsf	$	1.00	$	3,130
	Bases						
	Rubber Base	405	lf	$	3.00	$	1,215
	Floor Finishes						
	Carpet, Polished Concrete, Sealed Concrete, VCT, LVT - Allowance	3,130	sf	$	9.50	$	29,735
	Floor Prep / Moisture Vapor Reducer	3,130	sf	$	1.00	$	3,130
	Ceiling Finishes						
	ACT Ceiling (2x2), Painted GWB Ceiling, Painted Exposed Ceiling - Allowance	3,130	gsf	$	10.00	$	31,300
	SUBTOTAL INTERIOR FINISHES	**3,130**	**BGSF**	**$**	**34.88**	**$**	**109,160**
D10	**CONVEYING SYSTEMS**						
	Elevators & Lifts						
	SUBTOTAL CONVEYING SYSTEMS	**3,130**	**BGSF**	**$**	**-**	**$**	**-**
D20	**PLUMBING**						
	Plumbing						
	Per MW budget estimate dated 6-11-24	3,130	gsf	$	13.30	$	41,629
	SUBTOTAL PLUMBING	**3,130**	**BGSF**	**$**	**13.30**	**$**	**41,629**
D30	**HVAC**						
	HVAC						
	Per MW budget estimate dated 6-11-24	3,130	gsf	$	50.27	$	157,345
	SUBTOTAL HVAC	**3,130**	**BGSF**	**$**	**50.27**	**$**	**157,345**
D40	**FIRE PROTECTION**						
	Fire Protection						
	Per MW budget estimate dated 6-11-24	3,130	gsf	$	3.70	$	11,581
	SUBTOTAL FIRE PROTECTION	**3,130**	**BGSF**	**$**	**3.70**	**$**	**11,581**
D50	**ELECTRICAL**						
	Electrical						
	Per MW budget estimate dated 6-11-24	3,130	gsf	$	49.00	$	153,370
	SUBTOTAL ELECTRICAL	**3,130**	**BGSF**	**$**	**49.00**	**$**	**153,370**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Cheney Hall

ROEN ASSOCIATES

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
E10	**EQUIPMENT**						
115300	**Laboratory Equipment**						
	Laboratory Equipment - Per RFD	1	ls	$	25,226	$	25,226
	SUBTOTAL EQUIPMENT	**3,130**	**BGSF**	**$**	**8.06**	**$**	**25,226**
E20	**CASEWORK & FURNISHINGS**						
	Fixed Casework						
	Building Allowance per Architectural Basis of Design - Custom Plastic Laminate Cabinetry / Wooden Cabinetry - Allowance	3,130	sf	$	7.50	$	23,475
	Moveable Furnishings						
	EXCLUDED						
	SUBTOTAL FURNISHINGS	**3,130**	**BGSF**	**$**	**7.50**	**$**	**23,475**
F10	**SPECIAL CONSTRUCTION**						
	Special Construction						
	SUBTOTAL SPECIAL CONSTRUCTION	**3,130**	**BGSF**	**$**	**-**	**$**	**-**
F20	**SELECTIVE BUILDING DEMOLITION**						
	Building Interior Demolition						
	Flooring	3,130	sf	$	1.50	$	4,695
	Rubber Base	405	lf	$	1.00	$	405
	Ceilings	3,130	sf	$	1.50	$	4,695
	Miscellaneous Demolition	24	hrs	$	120.00	$	2,880
	Temporary Partitions / Dust Control - Allowance	500	sf	$	25.00	$	12,500
	Supervision, Hauling & Dump Fees	15%	on	$	25,175	$	3,776
	Mechanical, Electrical and Plumbing	In MEP Numbers Above					
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**3,130**	**BGSF**	**$**	**9.25**	**$**	**28,951**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**3,130**	**BGSF**	**$**	**-**	**$**	**-**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Sitework

Project Owner:	**Eastern Washington University**	**Architect:**	LMN Architects
Project Name:	**EWU Engineering Building**	**Project Duration:**	32 MO
Project Location:	Cheney, WA	**Building GSF:**	82,522
Project Start Date:	Q3, 2027	**Site GSF:**	65,000
Estimate Date:	June 25, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	65,000	SGA	$ 26.82	$ 1,743,564
G20	Site Improvements	65,000	SGA	$ 11.17	$ 726,364
G30	Site Civil / Mech Utilities	65,000	SGA	$ 4.40	$ 285,700
G40	Site Electrical Utilities	65,000	SGA	$ 10.31	$ 670,000
G50	Other Site Construction	65,000	SGA	$ 2.12	$ 137,500
SITEWORK SUBTOTAL					**$ 3,563,128**
	Design Contingency			18%	$ 641,363
	Subtotal				$ 4,204,491
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 294,314
	Subtotal				$ 4,498,805
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**65,000**	**SGA**	**$ 69.21**	**$ 4,498,805**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	**SITE PREPARATION**				
	Mobilization	1	ls	$ 30,000.00	$ 30,000
	Site Demolition & Relocation				
	Building Demolition (Cadet Hall)	13,200	gsf	$ 12.00	$ 158,400
	Building Demolition includes temporary enclosure (at Existing Building)	1,940	sf	$ 25.00	$ 48,500
	Sawcut Existing Asphalt Paving Lines	600	lf	$ 2.50	$ 1,500
	Remove Wheel Stops	10	ea	$ 75.00	$ 750
	Remove Trees	5	ea	$ 200.00	$ 1,000
	Remove Asphalt Paving	37,300	sf	$ 1.50	$ 55,950
	Remove Concrete Walks	9,800	sf	$ 2.50	$ 24,500
	Remove Dumpster/Mechanical Enclosure	800	sf	$ 10.00	$ 8,000
	Demo Utilities	160	lf	$ 30.00	$ 4,800
	Misc. Site Clearing	1	ls	$ 7,500.00	$ 7,500
	Site Earthwork				
	TESC Erosion Control				
	Filter Fabric Fence	650	lf	$ 8.00	$ 5,200

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
	Catch Basin Inlet Protection	10	ea	$	300.00	$	3,000
	Stabilized Construction Entry	2,800	sf	$	3.50	$	9,800
	Tree Protection Fencing	300	lf	$	25.00	$	7,500
	Clear and Grub	42,000	sf	$	0.30	$	12,600
	Excavation						
	Strip Topsoil (to stockpile)	1,556	cy	$	6.50	$	10,114
	Export Unsuitable - Allowance	138	cy	$	45.00	$	6,210
	Imported Fill - Allowance	1,158	cy	$	55.00	$	63,690
	Rock Excavation - Allowance	2,056	cy	$	70.00	$	143,920
	Shoring - Allowance	1	ls	$	25,000.00	$	25,000
	Basement Excavation and Export	13,704	cy	$	45.00	$	616,680
	Pilings (includes mobilization)	52	ea	$	6,500.00	$	338,000
	Finish Grading	96,500	sf	$	0.30	$	28,950
	Hazardous Waste Remediation						
	Allowance	13,200	gsf	$	10.00	$	132,000
	SUBTOTAL SITE PREPARATON	**65,000**	**SGA**	**$**	**26.82**	**$**	**1,743,564**
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving (Base Courses Included)						
	Medium Duty (3" HMA over 4" Crushed Rock)	24,000	sf	$	3.75	$	90,000
	Concrete Site Work (Base Courses Included)						
	Curbs - Standard	880	lf	$	25.00	$	22,000
	Hardscape - Concrete	18,200	sf	$	9.00	$	163,800
	8" Concrete Paving	3,400	sf	$	10.00	$	34,000
	Brick Pavers - Allowance	1	ls	$	30,000	$	30,000
	Retaining Wall - Allowance	1	ls	$	75,000	$	75,000
	Pavement Markings/Site Signage						
	Striping - ADA Stalls with Signage	2	ea	$	1,200.00	$	2,400
	Striping - Standard Stalls	50	ea	$	75.00	$	3,750
	Stop Signs	2	ea	$	800.00	$	1,600
	Tactile Warning Strips	40	sf	$	30.00	$	1,200
	Site Development						
	Site Furnishings (Allowance)	1	ls	$	35,000	$	35,000
	Site Improvements not shown (Allowance)	1	ls	$	100,000	$	100,000
	New Electrical/Trash Enclosure - Allowance	1	ls	$	35,000	$	35,000
	Landscaping/Irrigation						
	Landscaping/Irrigation (Allowance)	35,000	sf	$	3.50	$	122,500
	Place Topsoil (from stockpile)	1,556	cy	$	6.50	$	10,114
	SUBTOTAL SITE IMPROVEMENTS	**65,000**	**SGA**	**$**	**11.17**	**$**	**726,364**

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G30	**SITE CIVIL / MECHANICAL UTILITIES**						
	Water Service						
	Tie-in at Existing (includes gate valve)	1	ea	$	3,000.00	$	3,000
	Water/Fire Line, 8" Ductile Iron (includes trench, bedding and backfill)	150	lf	$	85.00	$	12,750
	Water/Fire Line, 6" Ductile Iron (includes trench, bedding and backfill)	100	lf	$	65.00	$	6,500
	Water Meter	1	ea	$	5,000.00	$	5,000
	Irrigation Meter	1	ea	$	1,500.00	$	1,500
	Irrigation Line, 1" PVC (includes trench, bedding and backfill)	30	lf	$	30.00	$	900
	Double Check Valve (in vault)	1	ea	$	12,500.00	$	12,500
	Pressure Reducing Valve (Domestic)	1	ea	$	3,700.00	$	3,700
	Domestic Water, 2" Ductile Iron (includes trench, bedding and backfill)	100	lf	$	45.00	$	4,500
	Fire Line - Dry (4" Ductile Iron)	100	lf	$	55.00	$	5,500
	FDC - Fire Department Connection	1	ea	$	2,750.00	$	2,750
	PIV - Post Indicator Valve	1	ea	$	2,500.00	$	2,500
	Hydrant Assembly	1	ea	$	4,500.00	$	4,500
	Sanitary Sewer Systems						
	Tie-in at Existing	1	ea	$	750.00	$	750
	Side Sewer, 6" PVC (includes trench, bedding and backfill)	130	lf	$	55.00	$	7,150
	Cleanouts	1	ea	$	750.00	$	750
	Storm Drainage						
	Drain Line, 8" PVC (includes trench, bedding and backfill)	100	lf	$	65.00	$	6,500
	Roof Drain Line, 4"/6" PVC (includes trench, bedding and backfill)	500	lf	$	35.00	$	17,500
	Underslab Pipe (Allowance)	1,000	lf	$	40.00	$	40,000
	Footing Drainpipe (Allowance)	500	lf	$	35.00	$	17,500
	Storm Drainage in Parking Lot (Allowance)	1	ls	$	25,000.00	$	25,000
	Cleanouts	3	ea	$	650.00	$	1,950
	Detention Tanks	2	ea	$	35,000.00	$	70,000
	Control and Access Structures	2	ea	$	14,000.00	$	28,000
	Gas:						
	Natural Gas Trench and Backfill (Gas Line by Utility Purveyor)	200	lf				NIC
	Existing Street Surface Repair/Traffic Control	200	sf	$	25.00	$	5,000
	SUBTOTAL SITE CIVIL / MECHANICAL UTILITIES	**65,000**	**SGA**	**$**	**4.40**	**$**	**285,700**
G40	**SITE ELECTRICAL UTILITIES**						
	Electrical and Telecom Utilities						
	Relocation of Existing Electrical Services for new Main Entry	1	ls	$	550,000.00	$	550,000
	Exterior Lighting - Allowance	1	ls	$	120,000.00	$	120,000
	SUBTOTAL SITE ELECTRICAL UTILITIES	**65,000**	**SGA**	**$**	**10.31**	**$**	**670,000**

Eastern Washington University
EWU Engineering Building
Pre-Design Estimate - Sitework

ROEN ASSOCIATES

ESTIMATE SUMMARY							
No.	Description	Quantity	Unit of Measure		Unit Cost		Total Estimated Cost
G50	**OTHER SITE CONSTRUCTION**						
	Service Tunnels - Allowance						
	Utilidor Tunnel extended to beyond site footprint for future buildir	20	lf	$	4,500	$	90,000
	Utilidor Tunnel - Excavation Allowance	1	ls	$	17,500	$	17,500
	Landscaping Repair - Allowance	1	ls	$	5,000	$	5,000
	Other Site Construction						
	50' HDPE SDR-11 Pipe for Low Temperature Heating Water Piping (To be Direct Buried, Insulated & Jacketed) - Allowance	1	ls	$	20,000.00	$	20,000
	Trenching and Backfill - Allowance	1	ls	$	5,000.00	$	5,000
	SUBTOTAL OTHER SITE CONSTRUCTION	**65,000**	**SGA**	**$**	**2.12**	**$**	**137,500**
Z10	**GENERAL REQUIREMENTS**						
	General Conditions						
	See Summary						
	SUBTOTAL GENERAL REQUIREMENTS	**65,000**	**SGA**	**$**	**-**	**$**	**-**

9.7 CHENEY HALL, CEB & CADET HALL FCS REPORTS

Eastern Washington University	**Institution ID**	370	
Eastern Washington University	**Site ID**	OFMSID00002	
Cheney Hall	**Facility ID**	1163	
Facility Size - Gross	31,018	**Facility Size- Assignable**	21,295
Original Year Of Construction	1966	**Year Of Last Renovation**	2005
Facility Use Type	Teaching Labs		
Construction Type	Medium		
Survey Date	12/01/15	**Survey Done By**	SEK

Facility Condition Summary

Overall Facility Condition Score **2.6**

Facility Components

Uniformat II Components	Component Scores	Component Comments
A Substructure:	**2.0**	
Foundations		
Standard Foundations	2	
Slab on Grade	2	
B Shell:	**2.3**	
Superstructure		
Floor Construction	2	
Roof Construction	2	
Exterior Closure		paint shop score - 3 fab shop score - 5, internal stairwell rails not to code
Exterior Walls	2	
Exterior Windows	4	
Exterior Doors	3	
Roofing		
Roof Coverings	3	
Roof Opening	3	
Projections	2	
C Interiors:	**2.8**	
Interior Construction		
Fixed and Moveable Partitions	3	
Interior Doors	3	
Specialties	3	
Staircases		
Stair Construction	2	
Stair Finishes	2	

Print Date: 08/24/18

Interior Finishes		
Wall Finishes	3	
Floor Finishes	2	
Ceiling Finishes	4	
D Services:	**3.0**	
Vertical Transportation		life cycle met - good working condition though (C. Opsal)
Elevators and Lifts	3	
Plumbing		1st floor - 1, 2nd floor - 4 (J. Butler)
Plumbing Fixtures	4	
Domestic Water Distribution	3	
Sanitary Waste	3	
Rain Water Drainage	3	
Special Plumbing Systems	3	
HVAC		score - 2 (J. Butler)
Energy Supply	3	
Heat Generating Systems	3	
Cooling Generating Systems		
Distribution Systems	3	
Terminal and Package Units	4	
Controls and Instrumentation	4	
Special HVAC Systems and Eq	4	
Fire Protection		
Fire Protection Sprinkler Syste	5	
Stand-Pipe and Hose Systems		
Fire Protection Specialties	3	
Special Fire Protection System		
Electrical		
Electrical Service and Distributi	2	
Lighting and Branch Wiring	2	
Communication and Security S	4	
Special Electrical Systems		
E Equipment and Furnishings:	**1.3**	
Equipment and Furnishings		
Fixed Furnishings and Equipm	1	
Moveable Furnishings (Capital	2	
E Special Construction:		
Special Construction		
Integrated Constr. & Special Co		
Special Controls and Instrume		

Facility Survey Summary

Eastern Washington University	Institution ID	370
Eastern Washington University	Site ID	OFMSID00002
Computing and Engineering Sc	Facility ID	1160

Facility Size - Gross	98,383	Facility Size- Assignable	54,910
Original Year Of Construction	2005	Year Of Last Renovation	
Facility Use Type	Teaching Labs		
Construction Type	Medium		

Survey Date	12/01/15	Survey Done By	SEK

Facility Condition Summary

Overall Facility Condition Score 1.6

Facility Components

Uniformat II Components	Component Scores	Component Comments
A Substructure:	2.2	
Foundations		
Standard Foundations	1	
Slab on Grade	4	
B Shell:	1.0	
Superstructure		
Floor Construction	1	
Roof Construction	1	
Exterior Closure		fab shop score - 1
Exterior Walls	1	
Exterior Windows	1	
Exterior Doors	1	
Roofing		
Roof Coverings	1	
Roof Opening	1	
Projections	1	
C Interiors:	1.4	
Interior Construction		
Fixed and Moveable Partitions	1	
Interior Doors	1	
Specialties	1	
Staircases		
Stair Construction	1	
Stair Finishes	2	

Print Date: 07/25/16

Eastern Washington University	Institution ID	370
Eastern Washington University	Site ID	OFMSID00002
Computing and Engineering Sc	Facility ID	1160

Interior Finishes	
Wall Finishes	2
Floor Finishes	2
Ceiling Finishes	1
D Services:	**2.1**
Vertical Transportation	
Elevators and Lifts	2
Plumbing	
Plumbing Fixtures	2
Domestic Water Distribution	2
Sanitary Waste	2
Rain Water Drainage	2
Special Plumbing Systems	2
HVAC	
Energy Supply	2
Heat Generating Systems	2
Cooling Generating Systems	
Distribution Systems	3
Terminal and Package Units	2
Controls and Instrumentation	2
Special HVAC Systems and Eq	3
Fire Protection	
Fire Protection Sprinkler Syste	2
Stand-Pipe and Hose Systems	
Fire Protection Specialties	2
Special Fire Protection System	
Electrical	
Electrical Service and Distributi	2
Lighting and Branch Wiring	2
Communication and Security S	1
Special Electrical Systems	
E Equipment and Furnishings:	**2.4**
Equipment and Furnishings	
Fixed Furnishings and Equipm	3
Moveable Furnishings (Capital	1
E Special Construction:	
Special Construction	
Integrated Constr. & Special Co	
Special Controls and Instrumen	

Print Date: 07/25/16

Eastern Washington University	**Institution ID**	370	
Eastern Washington University	**Site ID**	OFMSID00002	
Cadet Hall	**Facility ID**	1157	

Facility Size - Gross	10,187	**Facility Size- Assignable**	7,760
Original Year Of Construction	1956	**Year Of Last Renovation**	1978
Facility Use Type	General Classroom		
Construction Type	Heavy		

Survey Date	12/01/15	**Survey Done By**	SEK

Facility Condition Summary

Overall Facility Condition Score 2.7

Facility Components

Uniformat II Components	Component Scores	Component Comments
A Substructure:	**3.0**	
Foundations		
Standard Foundations	3	
Slab on Grade	3	
B Shell:	**2.9**	
Superstructure		
Floor Construction	3	
Roof Construction	3	
Exterior Closure		fab shop score - 5, inside staircase rail & 2nd floor fire escape not to code
Exterior Walls	3	
Exterior Windows	3	
Exterior Doors	3	
Roofing		
Roof Coverings	2	
Roof Opening	2	
Projections	2	
C Interiors:	**3.0**	
Interior Construction		
Fixed and Moveable Partitions	3	
Interior Doors	3	
Specialties	3	
Staircases		
Stair Construction	3	
Stair Finishes	3	

Eastern Washington University	Institution ID	370
Eastern Washington University	Site ID	OFMSID00002
Cadet Hall	Facility ID	1157

Interior Finishes		
Wall Finishes	3	
Floor Finishes	3	
Ceiling Finishes	3	
D Services:	**3.8**	
Vertical Transportation		NA
Elevators and Lifts		
Plumbing		
Plumbing Fixtures	4	
Domestic Water Distribution	3	
Sanitary Waste	3	
Rain Water Drainage	3	
Special Plumbing Systems		
HVAC		score - 3 (J. Butler)
Energy Supply	4	
Heat Generating Systems		
Cooling Generating Systems	3	
Distribution Systems	4	
Terminal and Package Units	4	
Controls and Instrumentation	5	
Special HVAC Systems and Eq		
Fire Protection		Detection/Reporting in place of suppression
Fire Protection Sprinkler Syste	5	
Stand-Pipe and Hose Systems		
Fire Protection Specialties	4	
Special Fire Protection System		
Electrical		life cycle met (C. Opsal)
Electrical Service and Distributi	4	
Lighting and Branch Wiring	4	
Communication and Security S	3	
Special Electrical Systems		
E Equipment and Furnishings:	**3.0**	
Equipment and Furnishings		
Fixed Furnishings and Equipm	3	
Moveable Furnishings (Capital	3	
E Special Construction:		
Special Construction		
Integrated Constr. & Special Co		
Special Controls and Instrume		

9.8 OUTLINE SPECIFICATIONS

The following outline specifications form the basis for the Engineering Building construction costs:

A Substructure

A10 Foundations

A prior geotechnical report for this project was prepared by AMEC Earth and Environmental Inc. dated October 8, 2001. The geotechnical report recommends shallow foundation system for new Engineering Building. Existing soft clay soils will be over-excavated approximately 2 to 4 feet below bottom of footings and replaced with compacted structural fill to accommodate for the shallow foundation. Compacted fill will likely need to be imported as existing site soil is not considered appropriate due to its long term compressibility. Perched ground water was encountered at depth of 6 to 10 feet below ground surface during the soil exploration.
New column foundation at the vicinity of an existing utility tunnel traversing at the west of the building site will be designed to minimize the surcharge load to the tunnel.

A20 Basement

Basement wall will consist of 12" thick concrete wall with continuous wall footing and slab on grade can be 5" thick reinforced concrete slab underlain by properly prepared subgrade.
A soil report addendum will be required to provide updated design information per the current building code.

B Shell

B10 Substructure

Floor to Floor Height: A height of 18'-0" floor to floor at the ground level and level two is established to accommodate the robust mechanical and electrical equipment serving the 'shop' like laboratories. A height of 16'-0" floor to floor will be used at levels one to align with the floor to floor of CEB for ease of connecting into the existing building.

Codes:
The governing building code will be the International Building Code, latest edition with Washington State amendments, WAC 51-50. Other referenced design codes are anticipated to include the AISC Manual of Steel Construction (LRFD), Second Edition, ACI Building Code, Commentary, ACI 318 14, ASCE 7-16 and AWS Structural Welding Code (AWS D 1.1 10).

Design Load

- Live Loads:

Classrooms, Offices and Interior Spaces	81 psf, reducible
Lobby, Exterior and Exit Areas	100 psf, reducible
Light Storage	125 psf, non-reducible
Laboratory and Laboratory Support Area	100 psf, reducible
Roof	20 psf, reducible

- Dead Loads:
  General: Estimated weight of construction material.
  Partitions: 10 psf included in seismic mass per building code requirement; 15 psf minimum for gravity design.
  Typical ceiling and finishes: 5 psf.
  Mechanical Equipment: 100 psf or actual weight of mechanical equipment.

- Lateral Loads:

Seismic design criteria will be based on ASCE 7-16.

Seismic Design Parameters:

Risk Category	III
Seismic Design Category	D
Design Spectral Response Coefficient	SDS = 0.312
Design Spectral Response Coefficient	SD1 = 0.177
Importance Factor	I= 1.25
Structural Response Modification	R= 8 (Steel Buckling-Restrained Brace Frame)
Deflection Amplification Factor	Cd = 5
Drift Limit	2.0%
Seismic Design Category	E

Wind Design Parameters:

Wind Basic Wind Speed	115 miles per hour
Wind Exposure	B
Wind Importance Factor	I = 1.0

Materials

Concrete

f'c = 5,000 psi (NWC); All columns
f'c = 5,000 psi (NWC); All beams and slab
f'c = 5,000 psi (NWC); Basement Walls
f'c = 4,000 psi (NWC); Column Footings
f'c = 4,000 psi (NWC); Basement Wall Footings
f'c = 4,000 psi (NWC); Slab on grade
f'c = 3,000 psi (LWC); Concrete on Metal Deck

Reinforcing steel

ASTM A615 Grade Steel 60 ksi or 75 ksi except as noted on the drawings.

Structural Steel

ASTM 992 for all structural shapes except as noted otherwise
ASTM A500, Grade B for all structural tubes
A490 Anchor bolts
A325 High strength bolts, except as noted otherwise

Gravity-Load Resisting System

- Steel construction with concrete filled metal decks supported on steel beams is proposed. The elevated floors and roof diaphragms will consist of 3 ¼" light-weight concrete over 3" metal deck on steel beams and girders, supported by steel columns.

Lateral-Load Resisting System:

Braced Frame above Level 1 and concrete shear walls below are used to provide seismic bracing for the Engineering Building. Buckling Restraint Braced Frames (BRBF) will be used in both directions at the upper floors and evenly distributed throughout the building and strategically located within the stair and shaft walls. BRBF's will transition to concrete shear walls at the Ground Level.

BRBF/Concrete shear wall scheme was selected over others because it offered added values and opportunities that significantly enhanced the project. Benefits of the proposed structural scheme

include:

- Provides a much more sustainable, lighter and a very high-performing structure.
- BRBF/Concrete shear wall are ideal for drift control due to their inherent stiffness. Strategic placement of the braced frames and shear walls adjacent to stair and restroom walls or partition allows total flexibility for space planning.
- The building, as designed, is very stiff and will have significantly less inter-story drift than what the code permits.
- The smaller story drift will limit the building damage in an earthquake event and allow restoration of building functionality and occupancy much more expeditiously than would be possible with other more flexible lateral force resisting systems.
- This is no vertical discontinuity in the braced frames. This not only simplifies the construction but also yields a structure which is much more robust.
- The proposed structural system is very cost-effective and also minimizes the construction time.
- Long-span roof structure over the Metallic Lab can be achieved economically with steel beams.

Penthouse Construction: Construction will be structural steel columns and bracing, and steel roof framing.

B20 Exterior Enclosure

Exterior Walls:

- The brick wall system will include; an air cavity, rigid insulation, air barrier, sheathing, steel framing, batt insulation, a vapor barrier, and interior drywall.
- Steel framing will support curtain walls and window systems, and metal panel and louvered penthouse enclosure walls.

Exterior Windows, Doors and Louvers:

- Punched aluminum frame windows at laboratories within brick wall system, curtain walls at building entries and laboratory facades parallel to Washington Street and the Art Walk as well as glazed entrance doors will all be aluminum with anodized finish. All glazing will be insulated low-E performance glass.
- Operable vertical panel doors at laboratories to exterior.
- Hollow metal exterior doors and interior doors at mechanical spaces.
- Painted hollow metal doors and frames at mechanical spaces, service entrances, and emergency exits.
- Louvers will be painted aluminum, fixed and drainable.

B30 Roofing

Roofing materials will include the following: thermoplastic membrane roofing over tapered rigid insulation, roof walkway pads, painted sheet metal coping at parapets, and roof stanchion tie-offs.

C Interiors

C10 Interiors Construction

Partitions: Typical interior partitions will be metal studs with 5/8" type 'x' gypsum wallboard, impact resistant gypsum wallboard on all corridor walls, and acoustic insulation where required. All demising walls will be built to underside of structure. Fire and smoke stopping will be provided at all rated wall and floor penetrations.

Doors: Interior doors will be of formaldehyde free solid core particle board, or mineral cores at labeled doors, with stained hardwood veneer faces. Doors will have satin stainless steel finish hardware with required accessories. Interior door and relight frames will be of hardwood or

painted hollow metal, with fire rated glass where required.

C20 Stairs
The two egress stairs will also serve as the communicating stairs and are located adjacent to the building entries and will have steel structure with architectural detailing including precast concrete treads and perforated metal risers.Doors into egress stair will be design to remain open on hold opens and automatically close in event of fire.

C30 Interior Finishes
Floor Finishes: Interior floor finishes will include polished concrete in circulation areas and lobby/ work area/ event space paralleling Washington Street, resilient tile in controlled research and Sensor Tech Lab and sealed concrete in all other teaching, project and research laboratories. Additional floor finishes include low VOC carpet tile at collaboration spaces and classrooms, ceramic tile at restrooms, sealed concrete at Tech Offices, support and back of house spaces and a durable traffic coating at the penthouse.
Wall Finishes: Interior wall finishes will include painted gypsum wallboard, ceramic tile at restrooms, acoustic wall panels in classrooms and at circulation, hardwood architectural detailing in the open student study lounge/work area, and corner guards as required. Sections of storefront glazing provide visibility into the teaching, project and research laboratories.

Ceiling Finishes: Interior ceiling finishes include exposed structure, painted gypsum wallboard, suspended acoustical ceiling systems, and wood slat ceiling clouds in public circulation area and collaboration areas.

Interior specialties: See E2015 Non-Laboratory Casework and Other Specialties.

D Services
D10 Conveying Systems
One 3 stop MRL passenger and one 4 stop MRL freight elevator with roof access will be provided, with ladders to the elevator pits.

D20 Plumbing
D2010 Plumbing Fixtures:

Restroom wall hung water closets, urinals and lavatories will be constructed of commercial grade vitreous china. Lavatory traps and supplies will be insulated per accessibility requirements.

Hands free sensor operated electric faucets with integral thermostatic mixing controls will be provided on toilet room lavatories. Sensor operated electric flush valves will be used for water closets and urinals.

Lab sinks will either be epoxy as part of the casework or stainless steel for chemical resistance or durability. Custodial sinks will be provided with wall faucet and lever handles.

Emergency showers and eyewash stations within the labs/shops, as provided under E10, will be serviced from a new centralized tempered water system that delivers potable tepid water between 60 and 95 degrees to the safety stations.

Laboratory fume hoods, as provided under E10, will be pre-piped with utility connections at the top and rear of hood.

Water Conservation- The following items will be reviewed by the design team and Eastern

Washington University for Water Conservation and Long Term Campus Standardization / Maintenance considerations; dual flush (1.6/1.0 GPF) water closets, ultra-low flow water closets (1.28 GPF), pint flow urinals, and lavatory faucets to deliver 0.5 GPM.

D2020 Domestic Water Distribution:
Domestic cold water and 115-120°F hot water distribution systems will be provided throughout the building. The existing water heaters will be modified to service both the new addition and existing building.

A hot water recirculation system controlled through the campus energy management system (EMS) will be provided and distributed at low velocities, using “in-line” all-bronze circulating pumps.

Hot water will be generated from water-to-water heat exchangers connected to the new low temperature heating water system, serviced by the newly proposed geothermal heating water system. Domestic hot water will be generated between 115-120°F. The existing water heating system in the basement of the existing building will be modified for expanded program demands.

Valves will be provided at all branch take-offs to individual fixture groups, and zone valves will also be provided. Balancing valves will be placed in return loops at connections of the hot water piping.

Materials:
Water Piping: Copper type L

D2030 Sanitary Waste System
A gravity sanitary drainage system will be provided to serve all plumbing fixtures and equipment (see also Lab Waste and Vent System under Section D2090).

Floor drains will be provided at safety showers in keeping with campus standards with the exception of metal shops that have the possibility of introducing oil into the sanitary sewer. Oil water separators are not anticipated at this time.

Materials:
Drain, Waste, Vent Piping (above grade) : Cast Iron
Waste Piping (below grade): PVC, ABS, or cast Iron

D2040 Rainwater Drainage
Gravity primary and overflow storm drainage systems will be provided to serve the roof levels with each system piped separately outside of the building. Rain leaders will be located within the heated portion of the building to prevent freezing of the pipe and will be insulated to prevent condensation from developing on the pipe. Overflow drains will terminate at grade level on splash blocks.

Materials:
Storm Drain Piping (above grade): Cast Iron
Storm Drain Piping (below grade): PVC, ABS, Cast Iron

D2090 Other Plumbing Systems
Compressed Air System: The existing air compressors are having issues with breakdowns due to age and wear. A new central compressed air system with duplex compressors, air drier and receiver storing 125 psig air will be provided for shop uses. Compressed air will be delivered at

100 psig and be piped throughout the laboratory/shop spaces. Isolated areas that require clean/dry air will have point of use driers and filters and air pressure regulators. The compressors will be located in the new addition to allow space for expanded water heaters in the existing mechanical room.

Lab Vacuum System: The existing vacuum pumps are obsolete and do not have available parts. A new vacuum pump and receiver will be provided in the new mechanical room to make room for expanded water utilities in the existing mechanical room. High vacuum needs will be provided from owner furnished, owner installed local pumps.

Natural Gas System: Natural gas from the existing building will be extended to the foundry for use in the kilns. Extensive use of natural gas is not anticipated.

Lab Specialty Gas Systems: Central house system for nitrogen and specialty gases are not anticipated. If required, these will be Owner provided at the point of use.

Welding Gas Systems: Central welding gas systems are not anticipated. Welding gases will be Owner provided from movable welding carts on wheels.

Industrial Water Systems: Cold and 115-120°F hot non-potable water distribution systems will be provided throughout the new addition to selected equipment and lab faucets. The systems will be isolated from the domestic water system with a reduced pressure backflow preventer assembly. Hot water heat exchangers and storage tanks will be the same as described in Section D2020 and will be located within the existing mechanical room.

Industrial Hot Water Recirculation System: A recirculation system will be provided and distributed at low velocities to ensure fixtures and equipment requiring hot water will have hot water readily available through the use of “in-line” all-bronze circulating pumps.

Tempered Water System: Potable cold water will be tempered by mixing domestic cold water and domestic hot water at a new master mixing valve located in the existing mechanical room to deliver tempered water to the emergency showers and eyewash stations throughout the building.

Lab Waste and Lab Vent System: Laboratory sinks in casework, chemical fume hood cup sinks and floor drains in chemical use areas will be piped in a dedicated waste system that will allow for future monitoring by regulatory authorities for possible discharges. Outside the building, after the monitoring point, the lab waste system will combine with the building sanitary sewer. Waste and vent piping will be chemical resistant.

Snow Melt System: A hydronic snowmelt system will be provided for exterior walkways at main entrances and site stairs that are difficult to access with mechanical snow removal equipment. Hydronic heat for the snowmelt system will be generated from a water-to-water heat exchanger connected to the new additions hot water heating system.

Materials:
Compressed Air Piping: Copper
Lab Air Piping: Copper
Lab Vacuum Piping: Copper
Lab Natural Gas Piping: Black steel
Industrial Hot/Cold Water/Tempered Water Piping: Copper
Lab Waste Piping: Polypropylene
Snowmelt Piping (buried in slab): Polypropylene

D30 HVAC Systems- General

Campus Chilled Water Plant: The campus has a central chilled water plant that distributes chilled water to the buildings on campus through an underground tunnel system. The new open-source geothermal plant will be connected to the existing campus chilled water piping network, providing an ultra-high efficiency first stage of cooling and an opportunity to trade energy between this project and all other buildings on campus currently connected to the campus chilled water system, improving the overall campus energy efficiency. The new addition basement mechanical room is in close proximity to the campus tunnel and the tunnel will be extended to connect to the basement mechanical room with a 6" service for the new addition.

Campus Steam Plant: The campus has a central steam plant that distributes steam and condensate to the buildings on campus through an underground tunnel system. The new addition basement mechanical room is in close proximity to the campus tunnel and the tunnel will be extended to connect to the basement mechanical room with a 4" high pressure steam service for the new addition.

Heating System: Primary heating will be provided from campus low temperature heating water (120°F) supplied by the new open-source geothermal heating plant. Low temperature heating Water (LTHW) will be routed to this building via 6"Ø supply and return pipes. The LTHW will then be distributed through the building via fully redundant building heating water pumps. Glycol hot water solution will be piped to the air handlers, hydronic heating systems, and snow melt heat exchangers. Since the nature of the new addition is primarily heating and cooled with 100% outside air ventilation systems, radiant heating should be provided for off-hour heating requirements.

Ventilation Requirements: It is anticipated that the lab/shop spaces in the new addition will be 100% outside air systems with heat recovery where air quality is suitable for passing through filters and equipment. Six (6) labs with fume hoods should be located in close proximity to be zoned from the same air handling unit if practical, so that they can be efficiently ventilated 24 hours a day (minimum 6 air changes per hour in the occupied mode and 4 air changes per hour in the unoccupied mode).

Acoustic Considerations: Vibration isolation of pumps and compressors will be provided. Additional acoustic considerations will include limiting duct velocities through ductwork, terminal units and air inlets/outlets to achieve space NC, use of sound attenuators in the duct systems, and vibration isolation of mechanical equipment with spring isolators and flexible connections will also be employed.

Outdoor Design Conditions: Heating Systems will be sized for the ASHRAE median of extremes for Cheney, Washington which is-9°F. Cooling systems will be sized for the ASHRAE 0.1% design condition temperature for Cheney, Washington which is 99°F dry bulb and 69°F wet bulb.

Indoor Design Conditions:
When occupied, office and lab spaces will be maintained between 68 and 75°F.
Telecommunication rooms will control to 68-75°F 24 hours per day, 7 days per week. Mechanical and electrical spaces will control to 55-85°F.

D3010 Energy Supply

Electrical service to the EWU Campus primary distribution system is provided by the City of Cheney.

Campus low temperature heating water and chilled water will be delivered from the GeoEco Plant. The GeoEco Plant will provide all-electric heating and cooling to the building utilizing a ground source heat pump. This new GeoEco Plant will provide higher efficiency chilled water to the building that the existing chilled water plant, and will allow energy trading between all buildings on campus that are currently connected to the existing chilled water distribution system.

Steam will be provided for laboratory steam sterilizers.

D3040 HVAC Distribution

New Addition Supply: The new addition lab/shop areas will be serviced from 100% outside air systems with heat recovery and perimeter heat (estimated at 80-85,000 cfm). Units will have supply fans, hot water heating coils, chilled water coils and filters with VAV controls and multiple fans installed in an array for redundancy. Each zone will have its own air terminal unit for regulation of airflow based upon occupied/unoccupied airflows and temperature requirements. The non-lab core spaces will be serviced from high efficiency VAV systems (estimated at 32,000 cfm) although alternative systems such as DOAS system with chilled beam terminal units should be evaluated in the design phase.

New Addition Exhaust: Exhaust will be ducted to exhaust fans with heat recovery at the roof level. Fans will be manifolded for partial redundancy and spaces will have pressure independent exhaust terminal units. Specialty exhaust for products of combustion such as foundry furnaces/ kilns will be ducted separately out the building without heat recovery. Air will be filtered at grilles prior to entering the exhaust air terminal units of each space. Exhaust systems are anticipated to be 70-75,000 cfm.

Renovation:

Ground Floor:

Due to reconfiguration of this zone, all mechanical upgrades in this area should be considered Heavy Renovation

Additive manufacturing: This zone is serviced by a 22,000 cfm AHU which has 100% outside air and 100% exhaust capabilities, has too much air volume and is too energy intensive for the new proposed use. This scope should replace or rebuild existing AHU-5 and associated relief/exhaust fan to provide capacity in the 5-7,500 cfm range. Due to the industrial use of former metallics lab all ductwork in this zone should be removed and replaced with new.

Teams room, storage, and student lounge: Remove existing ductwork and exhaust fans including wood working exhaust systems. Provide new hot and cold duct VAV mains from existing AHU-1 in the north ground floor mechanical room and new dual duct VAV terminal units for these spaces.

Material Science Lab, CE Construction Materials, and shared Research: AHU-4 (10,000 cfm with 100% osa capability) and a VFD controlled relief fan currently feeds the wood shop. Extend AHU-4 ductwork to service this zone. Provide supply and exhaust terminal units for each zone with hot water reheat from the new addition. Provide VAV controls on the supply fan. Retrofit or provide new exhaust fan for increased exhaust duct static pressure.

The existing dust collectors will not be required for the new scope and should be removed as they have had several breakdowns and should not be considered reliable for continued long term use for the expanded woodworking/construction shop areas.

Second Floor

This floor should be considered light tenant improvement work for HVAC systems and moderate

plumbing renovations in the expanded thermodynamics lab and shared research which is nearly doubling in size.

This floor is serviced by dual duct VAV air handling systems. Provide new VAV terminal units and new branch ductwork to accommodate new zoning. Modify plumbing as required for new use.

Third Floor
This floor should be considered light tenant improvement work for HVAC and plumbing systems.

This floor is serviced by dual duct VAV air handling systems. Provide new VAV terminal units and new branch ductwork to accommodate new zoning. Modify plumbing as required for new use. Potential scope in this zone could include relocation or removal of a sink in the existing kitchen area and potential relocation of vent pipes in walls.

Dust Collector: A dust collection system will be provided for the wood shop. The dust collector will be located on the south side of the new addition outside the shop area with access for dustbin service. Air will be filtered with final filters and recirculated back to the space for energy conservation.

Process Exhaust: Provide exhaust for point source particulates. Consider filtration units for welding that clean the air prior to recirculating back to the space.

Supply/return and non fume hood exhaust ductwork: Galvanized steel
Chemical fume hood exhaust ductwork: Stainless steel although galvanized will be considered for manifolded systems diluted with general exhaust.

D3050 Terminal and Packaged Units
Areas that have 24-hour process cooling loads such as the main telecommunication rooms will be serviced from dedicated standalone cooling units.

D3060 HVAC Instrumentation and Controls

Direct Digital Control (DDC): The project will utilize a Direct Digital Control (DDC) for the control of the HVAC systems, providing for heating and cooling control, peak load demand limiting and start/stop optimization. Damper and valve actuators will be electronic. Room thermostats will be an electronic adjustable type with override switch for occupant activation to occupied mode during unoccupied periods.

Energy Management System (EMS): The EMS controls will be compatible with EWU's campus BACnet system and existing computing and engineering facility controls manufactured by Alerton. Controls will interface and communicate with this network and front-end operator's terminal for the purpose of remote operation and maintenance. The EMS will include display and report real-time building systems performance data. The EMC controls will provide energy metering interface for the new and existing water, chilled water, low temperature heating water, steam and electric utilities servicing the existing building and new addition to a Skyspark control system.

Within the existing facility, the scope will include an upgrade of the Global Building Controller for compatibility with the new facility software. Existing supply and exhaust VAV will also be considered for controls upgrade due to cleaning issues associated with airflow measurement and improved airflow accuracy with new controllers for building pressurization.

Chemical Fume Hood Controls: Variable air volume controls shall be considered for the hoods for

acoustics and energy conservation.

D3070 Testing, Adjusting and Balancing

Air systems (supply, return, and exhaust), hydronic, and domestic hot water recirculation systems will be completely balanced in accordance with Associated Air Balance Council or National Environmental Balancing Bureau.

D40 Fire Protection

General System: The existing system will be extended from the existing building to the new addition and the addition will be sprinklered in accordance with the City of Cheney requirements.

Sprinklers: The building light hazard areas (office, lecture rooms, circulation spaces) will be sprinkled to light hazard requirements. Electrical, mechanical and non-chemical use labs will be sprinklered to ordinary hazard group 1 requirements. Labs, shops, and other higher hazard areas will be sprinklered to ordinary hazard group 2 requirements. The fire system will be divided into multiple zones by floor for identification and annunciation at the central fire alarm panel.

Standpipe: A fire protection standpipe will be required and provided at each exit stairwell if the highest occupied level of the building exceeds 30 feet above grade.

D50 Electrical Systems General

The building electrical systems will be designed in accordance with the latest revised edition of the following codes:

National Electrical Code
- International Building Code (IBC)
- International Fire Code (IFC)
- Regulations of the State Fire Marshal
- Electrical Safety Order of the Washington State Department of Labor and Industries
- Washington Administrative Code
- Americans with Disabilities Act (ADA)
- Washington State Non Residential Energy Code
- Requirements of Washington State Industrial Safety & Health Administration (WISHA)

The building electrical systems will be designed in accordance with the following standards:
- Illuminating Engineers Society of North America (IESNA)
- Eastern Washington University Construction Standards

D5010 Service and Distribution

Site Electrical: The existing building receives power from the existing campus 13.2KV primary electrical distribution system via existing 13.2KV Switch #1. As part of the proposed building addition, a new building service will be established at the new back of house service area. The existing service will be removed and refed from the new service to allow for a new building main entry from the West. The existing 13.2KV Switch #1 is loop fed from the campus primary electrical distribution system and is suitable for new service work.

Temporary Site Electrical: The existing building service transformers, generator and propane tank will require temporary relocation prior to the start of building excavation. It is proposed that this equipment be relocated North and adjacent to the existing parking lot to be outside of the excavation for the new building ground floor. This relocation will allow the existing building to remain in service during the construction of the new building. Once the new building permanent services are established, the existing building temporary services will be replaced with new

services from the new construction. The existing building telecom services from the existing tunnel are not expected to be impacted by the construction of the new building.

Building Normal Electrical Service: (3) new three-phase four-wire electrical services will be provided for the new building. These new electrical services will be derived from (1) new 480/277V outdoor pad mount transformer and (2) new 208/120V outdoor pad mount transformers, which will be connected to the EWU campus 13.2KV primary electrical distribution system. (2) new main switchboards will be located in a dedicated main electrical room located on the ground level. The dedicated main electrical room will be located as closely as possible to the new outdoor pad mount transformers to limit the secondary service cable length. The existing building 480V & 208V main switchboards will be refed from the new services. The new 480V main switchboard will refeed the existing building 480V switchboard. The existing and new 208V main switchboards will each be served by a dedicated 208V service transformer.

NEC Article 700 Emergency Electrical Distribution System: The emergency electrical distribution system will consist of (1) 150KW, 480/277V engine driven natural gas fueled generator. The emergency electrical distribution system will be provided with an automatic transfer switch in order to automatically switch loads between the normal EWU campus power and generator backed power. The emergency electrical distribution system will supply power to all life safety systems within the building such as egress lighting, exit lighting and the fire alarm system.

NEC Article 702 Optional Standby Electrical Distribution System: The standby electrical distribution system will consist of (1) existing 125KW, 480/277V engine driven propane fueled generator, which will be relocated from the existing building service yard. The standby electrical distribution system will be provided with an automatic transfer switch in order to automatically switch loads between the normal EWU campus power and generator backed power. The primary intent of the standby power system is to provide generator backed power to non-life safety loads within the new building, such as fume hoods, department computer servers, telecommunications rooms (and associated cooling) and important lab equipment which is deemed critical by EWU staff.

Building Distribution: The building electrical distribution will originate from a main electrical room on the ground floor and feed smaller stacked electrical rooms located on each floor above. The building electrical distribution will be designed to provide separation of lighting, mechanical and computer equipment loads. Lab and special equipment power distribution will be separate from general building power panels. Because the building is being provided with separate 480/277 and 208/120V electrical services, it will not be necessary to distribute dry type step down transformers throughout the building. Multi- stage surge suppression shall be provided by installing transient voltage surge suppressors at the main switchboard, distribution switchboards and appropriate panelboard locations.

Electric Metering: Owner metering shall be provided for the building main electrical service equipment. Additional sub meters shall be provided for lighting, mechanical, PV system, EV charging and plug loads to allow separate metering for each end use type.

Switchboards: Switchboards shall be free-standing dead-front style. Main devices shall be equipped with ground fault protection. Distribution devices shall be factory-installed, group-mounted circuit breakers. Each main switchboard will have owner metering per EWU campus standards and integral TVSS protection. Switchboard shall be mounted on a 2” concrete housekeeping curb. All bus bars shall be copper.

Panelboards: Circuit breaker panelboards shall be provided throughout the building as required to adequately serve the associated building loads. Lab spaces will typically receive dedicated

power panels located within each lab room. Panelboards shall be dead-front circuit breaker type with proper interrupting capacity. All panelboards shall be provided with 42 available circuits and door in door construction. All bus bars shall be copper. Where appropriate, panelboards will be provided with integrally mounted TVSS units.

Mechanical Equipment: Refer to mechanical narrative for proposed mechanical systems and possible equipment. Motor loads ½ HP and larger will be 480V three phase. Motor starters and disconnects will typically be located in close proximity to each associated piece of mechanical equipment. Variable frequency drives will be provided by the mechanical contractor and installed by electrical contractor for various pieces of mechanical equipment.

Shop/Lab Equipment: Refer to the lab narrative for proposed electrical systems to be provided for each unique space. The electrical systems will be designed to provide ultimate flexibility to accommodate the ever-changing program needs for engineering studies.

Disconnect Switches: Safety switches shall be heavy duty type with interlocking door and spring-loaded contacts. Safety switches used as motor disconnects shall be fused. Outdoor safety switches shall be NEMA 3R.

Engine/Generator: Emergency and standby power generation shall be provided by means of an engine driven or natural gas fueled generator set. Each generator set shall be sized to supply the emergency and standby loads served. Emergency power will not be provided for elevator operation. Generator sets shall include a weatherproof sound attenuating enclosure for outdoor installation. Operation of the generators will be monitored on a multi function system designed to report most normal failures such as low cooling fluid temperature, low starting batteries, overcrank, overload, high water temperature, etc. The generators shall be mounted on a 6” curb to allow for maintenance access to oil drain low point.

Automatic Transfer Switch: The automatic transfer switches shall be 4-pole, switched neutral, open transition type.

Medium Voltage Pad Mount Transformers: Transformers shall contain a dead front loop feed primary compartment. Provide transformers with integral secondary disconnect switch located within the transformer secondary compartment. Provide external oil sampling valve system extended to lockable box on exterior of each transformer.

Medium Voltage Cabling: 15KV medium voltage cables shall be shielded, copper MV-90 single conductors. 15KV cables shall be sized in accordance with EWU campus standards and the National Electric Code and shall be installed with a 600V insulated equipment grounding conductor. 15KV cables shall be installed in continuous runs without splices.

Medium Voltage Elbows: 15KV medium voltage cables shall be terminated at transformers by 200 amp rated load-break elbows manufactured by Cooper.

Grounding: Grounding materials shall be copper, except ground rods shall be copper-clad steel. Grounding electrode shall be provided per code requirements. Equipment grounding conductors shall be run with all feeders and branch circuits. Separate grounding conductors shall be provided for isolated ground branch circuits. Equipment ground bars shall be provided within all electrical rooms and telecommunications rooms.

On-site Renewable Energy: A complete system of photovoltaic arrays shall be provided for on-site renewable energy generation in compliance with the Washington State Energy Code (WSEC). The

minimum system output shall be .5 watts per square foot of new building area. Potential location for solar arrays include the building roof.

D5020 Lighting and Branch Wiring

General Interior Lighting: Lighting throughout the interior building spaces will respond to the primary use of each space while maintaining a level of flexibility to react to future use of each space. Uniform ambient lighting will establish a basic minimum lighting level throughout each individual space with task, display and accent lighting used to establish contrast and interest. Specific attention will be given to the lighting for areas with computer workstations in order to minimize glare. Lighting within the building will be LED. Lighting system design foot candle levels will be in accordance with IES standards and EWU standards. In general, areas within the building will be illuminated to the following light levels:

Building Area	Foot-Candles
General Classrooms	30-50
Labs	60-75
Offices	30-50
Conference Rooms	30-50
Restrooms	10-15
Corridors	10-15
MEP Utility	10-20
Storage Rooms	10-20

Egress & Exit Lighting: Exit lighting will be LED type. Emergency egress lighting will be provided throughout the path of egress and will be supplied with power from the emergency generator system in the event of a failure on the normal power system.

General Lighting Controls: Within normally occupied spaces, multi-level switching or dimming will be provided in conjunction with occupancy sensors and will utilize two or more manual wall switches. Manually dimmable lighting controls shall be utilized within appropriate areas, such as conference rooms and labs. Automatic dimming controls shall be considered for the purpose of daylight harvesting within areas where adequate natural daylight is present within the building. A programmable low voltage lighting control system shall be provided for automatic control of lighting in corridors / common areas and exterior site lighting. The low voltage lighting control system shall also be interfaced to the campus energy management system (EMS) to all EMS control of the exterior lighting.

Programmable Low Voltage Lighting Control System: Provide a distributed low voltage lighting control system with building management system interface. The low voltage lighting control system shall be manufactured by nLight (acuity brands) in accordance with EWU campus standards.

Occupancy Sensors: Occupancy sensors will be utilized to automatically shut off the lighting within offices, conference rooms, restrooms, labs and classrooms when these spaces are unoccupied. Occupancy sensors shall be dual technology type and capable of vacancy mode. Either ceiling mounted or wall mounted occupancy sensors will be utilized depending on the physical size and specific geometry of the room being controlled.

Sustainable Design Considerations: All sustainable design measures considered will be evaluated completely with regards to their associated sustainable and economic aspects. Many opportunities are currently available to construct a building that is a model of sustainable design.

The following is a brief list of items related to the building lighting and lighting control systems which are being considered for this project:

Energy efficient LED lighting will be utilized as the primary light source within the building in order to reduce the energy consumption associated with the lighting system.

Occupancy sensors will be utilized to automatically shut off the lighting withing interior spaces when they are unoccupied. This will allow the interior lighting within these areas to be automatically turned off during unoccupied times, thereby increasing the available energy savings associated with the interior lighting system.

Within normally occupied spaces, multi-level switching or manual dimming will be provided in conjunction with occupancy sensors and will utilize two or more manual wall switches. The utilization of manual controls within these spaces will allow the user to reduce the light levels within their spaces if desired, further increasing the available energy savings associated with the interior lighting system.

Automatic dimming lighting controls will be considered for the purpose of daylight harvesting within areas where adequate natural daylight is present within the building. The utilization of automatic dimming and daylight harvesting will allow EWU to take advantage of the natural available daylight to the fullest extent possible. This will result in additional available energy savings associated with the interior lighting system.

A programmable low voltage lighting control system shall be used to control both the exterior and interior lighting systems. This will allow both the interior and exterior lighting systems to be automatically turned on/off at pre-programmed times, thereby increasing the available energy savings associated with the interior and exterior lighting systems.

General Exterior Lighting: Exterior lighting will be LED type selected to match the architectural building exterior and EWU campus standards. Exterior entry lighting which illuminates the path of egress will be supplied with power from the emergency generator system in the event of a failure on the normal power system. Exterior lighting will utilize full cut off light fixtures in order to avoid light trespass and meet associated dark sky lighting requirements. In general, exterior areas will be illuminated to the following light levels:

Exterior Area	Foot-Candles
Exterior Entry	5
Exterior Walkways	2
Parking Areas	1

Exterior Lighting Controls: A programmable low voltage lighting control system shall be used to control the exterior lighting. This will allow the exterior lighting to be automatically turned on and off at pre-programmed times, automatically controlled via outdoor photocell and automatically controlled by the campus EMS system.

General Branch Wiring: Provide complete raceway and wiring systems in conformance with code requirements and campus standards.

Conduit: Galvanized steel metal conduit shall be used inside building. Non-metallic conduit shall be used underground, except at transitions. Metal conduit shall be rigid metal conduit, intermediate metal conduit, electrical metallic tubing, or flexible metal conduit. Non-metallic conduit shall be schedule 40 PVC. Conduit shall be concealed wherever possible. Minimum

conduit size is 3/4" unless otherwise noted. Conduits installed within utility tunnels shall be rigid metal conduit.

Building Wire: All wiring shall be copper, minimum size #12 AWG. All feeder conductors shall be installed in conduit. Aluminum conductors are not allowed on the EWU campus, unless approved by the project manager. All 480/277V and 208/120V building wire shall be color coded in accordance with EWU campus standards.

Wiring Devices: Switches and receptacles outlets shall be specification grade. GFI type outlets shall be provided where outlets are mounted within 6 feet of a sink. Trim plates shall be color coordinated with architect.

Electric Vehicle Charging: Where new parking is provided at the building, electric vehicle charging stations and infrastructure shall be provided in compliance with WAC 51-50-0429. The electric vehicle charging stations and infrastructure shall meet Level 2 charging capacity requirements with each charger rated for 40 amps at 208V, 1PH. Charger locations will be coordinated to not conflict with campus snow removal operations.

Renovation: (refer to architectural narrative for areas of work)

- Ground Floor – Heavy electrical work is anticipated at the ground floor of the existing building to accommodate the new programs. This would include modified electrical distribution, branch circuits, lighting, telecom, fire alarm and security.
- First Floor – Moderate to light electrical work is anticipated on the first floor of the existing building to accommodate the new program. This would include modified branch circuits, lighting, telecom, fire alarm and security.
- Second Floor – Moderate to light electrical work is anticipated on the first floor of the existing building to accommodate the new program. This would include modified branch circuits, lighting, telecom, fire alarm and security.
- Third Floor – Moderate to light electrical work is anticipated on the first floor of the existing building to accommodate the new program. This would include modified branch circuits, lighting, telecom, fire alarm and security.

<u>D5030 Communication and Security</u>

Telecommunications Building Distribution: A complete telecommunications distribution pathway and cabling system will be provided by the contractor in accordance with the EWU construction standards. Pathways, cabling, outlets and passive equipment will be provided by the contractor. Active equipment will be provided by EWU. Telecommunications rooms will be located throughout the facility in accordance with EIA/TIA 568 and 569. The main telecom room will be located on the ground floor of the building, in a centralized location. Secondary communication rooms are to be located on each floor and stacked above the main telecommunication room. Horizontal station cable pathways will be provided and routed to the telecommunications rooms located on each floor. Each telecommunications room shall be provided with a dedicated 120/208V standby power panelboard and an equipment ground bar. Selected areas will be equipped with cabling provisions for owner furnished wireless local area networking. Telecommunications riser cabling and pathways will be provided from the entrance location to the telecommunications room on each floor. Cable trays will be installed down corridors with conduits provided at hard (inaccessible) ceilings and were wall and floor penetrations are required.

Telecommunication Outlet Distribution: Telecommunications devices will typically be located at instructor's podiums, ceiling mounted projector locations, computer workstations and required

student locations. Offices shall typically be provided with two telecommunication outlet locations per room. Typically, each outlet will be served with two Category 6 cables.

WiFi Systems: WiFi system pathways, cabling and outlets will be provided by the contractor. Required locations for WiFi network routers will be closely coordinated with EWU. All WiFi network routers will be provided and installed by EWU.

Closed Circuit Television (CCTV) System: New CCTV System pathways and network drops will be provided by the contractor. Required locations for CCTV devices will be closely coordinated with EWU. All CCTV cameras, power supplies, cabling and active electronic equipment will be provided by EWU and installed by the contractor.

Access Control System: A complete electronic access control system will be provided for the new building. Required locations for miscellaneous access control devices will be closely coordinated with EWU. Typical spaces which will include access controls are classrooms, labs, office suites and utility rooms.

D5090 Other Electrical Systems

Audio / Video Systems: Audio visual systems will be provided and installed by the contractor. Spaces requiring audio visual system shall include, but not be limited to assembly spaces, classrooms and meeting rooms. The basis of design for assembly spaces and classrooms shall be a hybrid learning classroom which will include projectors, projector screens, overhead ceiling speakers, wireless microphone systems, assistive listening devices, room control, lecture capture camera and device inputs. Large meeting rooms will require a projector and screen or wall mounted display, reinforced sound and control systems. Small and medium size meeting rooms will require wall mounted display and media control systems. Computer labs will be treated as basic classrooms with either projectors and screen or wall mounted displays, overhead ceiling speakers, wireless microphone systems, assistive listening devices, room control, and wireless device connectivity.

Fire Alarm: A complete battery backed addressable fire alarm system with manual pull stations, automatic detection and ADA compliant horn/strobes will be provided throughout the facility. Smoke detector and heat detectors will be installed as required by the governing codes, and in accordance with EWU campus standards. The building fire sprinkler system will be monitored by the fire alarm system for system flow and shutoff valve tampering. Central reporting capabilities will be provided with the fire alarm system and shall be compatible with the existing campus fire alarm monitoring system. The new fire alarm system shall be manufactured by Edwards System Technology (EST) in accordance with EWU campus standards.

Clock System: Clock System pathways, cabling and outlets will be provided by the contractor. Required locations for clocks will be closely coordinated with EWU. All clocks and clock equipment will be provided and installed by EWU.

Room Scheduling: Room Scheduling System pathways, cabling, outlets and passive equipment will be provided by the contractor. Required locations for room scheduling will be closely coordinated with EWU. All room scheduling displays, and active equipment will be provided/installed by EWU.

Distributed Antenna System (DAS): A a complete distributed antenna system for emergency responder radio use is not planned for the new building. The contractor shall provide building infrastructure for a future DAS system. Upon completion of the building structure, walls and ceilings the contractor shall provide testing for responder radio coverage.

E Equipment and Furnishings

E10 Equipment

E1010 Laboratory Fume Hoods and Other Air Containment Units

Bench-Mounted Chemical Fume Hoods: Restricted bypass type / variable air volume (VAV) extraction hoods at 100 fpm (0.51 m/s) face velocity with a vertical rising sash will be provided. Exhaust air volume will be based on 18" open sash position. Fume hood work surface will be dished epoxy resin.

Fume Extractor Arms (Snorkels): Snorkels will be 3 inch (75 mm) diameter, hinged, self-supporting air extractor arm assembly with 14" diameter clear acrylic hood.

Low Slot Exhaust: These will be custom fabricated stainless steel.

Biological Safety Cabinets: Cabinets will be Class II, Type A2, and designed to operate with an intake air velocity of 100 fpm (0.5 m/s), re-circulating the air through the supply HEPA filter into the work area.

Laminar Flow Hoods: Laminar Flow Hoods shall be equipped with supply HEPA filter and reusable prefilter to maintain Class 100 standard at work area.

Canopy Hood: Canopy Hood shall be an exhausted stainless steel canopy enclosure with all hangers and miscellaneous hardware, including damp location light fixture.

E1020 Laboratory Service Fittings and Fixtures

Service Fittings: Service fittings shall be chromium plated with an acid- and solvent-resistant, clear epoxy coat finish specifically designed for laboratory use. All service fittings shall be of the tapered body design with four arm handles, except for ADA accessible fittings which shall have lever handles as described below.

Fittings and fixtures: These are designated to be accessible to persons with disabilities (ADA) with operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N), maximum.

Safety Stations: Safety station shall be barrier-free with emergency shower actuation valve in stainless steel cabinet for recess mounting and wall-mounted eyewash with stainless steel skirt.

Hand held eye wash: These shall be dual-purpose eye wash/drench hose, deck mounted.

Cup Sinks: Cup sinks will be epoxy and set flush with work surface, except for any cup sinks at fume hoods which will have ¼" raised rim.
Laboratory Sinks: Laboratory sinks will be epoxy for drop-in installation in work surfaces.
Stainless steel sinks: Stainless steel sinks will be Integral one piece construction with stainless steel work surface. 18 gauge (1.3 mm thick) steel unless otherwise noted.

Scrub-up sink: These shall be wall mounted 14 gauge (2.0 mm thick) Type 304 stainless steel sink with knee action control and HWCW mixing valve.

E1030 Laboratory Sterilizers And Washers

Laboratory Glassware Washers (as required): These shall be tall, floor mounted, front loading single door units programmable for multiple wash cycle and drying cycle duration, with purified

water rinse capability. Unit shall have mounting hardware and finish pieces for mounting through architectural wall.

Laboratory Medium Steam Sterilizers: These shall be prevacuum/gravity models with interior chamber dimensions of 20: x 36" x 48". Steam source should be provided to operate all sterilizers and Cage/Bottle Washer. Freestanding single door unit shall be cabinet enclosed. Recessed single door unit shall have mounting hardware and finish pieces for mounting though architectural wall. Pass-through double door unit shall have mounting hardware and finish pieces for mounting one end through an architectural wall.

Instruments, Controls Major Electrical Components: These shall be located in surface mount control console. Provide LCD color touchscreen microprocessor based temperature and humidity (where applicable) controller with real-time and archive trending. Each room shall be provided with reset type personnel emergency alarm with electrically powered audible and visual alarm system.

Environmental conditioning system consisting of blower(s), evaporator coil(s), heaters, humidifier (as required), refrigeration piping system and drain pans, shall be housed in modular enclosure(s) suspended from the room ceiling and shall be factory prewired to the control cabinet.

Refrigerant: Utilize non-ozone depleting refrigerants R-134a, R-404A, or approved equal; CFC type refrigerant shall not be acceptable.

Operation: Each system shall be designed and furnished in such a manner as to allow the motor compressor to operate continuously with a modulating bypass system to maintain specified temperature ranges.

Defrost: System shall incorporate an automatic defrost system.

Refrigerant Piping: All refrigeration piping required shall be furnished and installed by the controlled temperature room contractor. Provide ACR type, hard drawn, cleaned and capped Type L copper tubing with silver brazed joints.

Ventilation: provide make-up air from the laboratory space at the rate of 0.25 CFM per square foot (4.57 m^3/h per square meter) unless otherwise indicated on the drawings. No ventilation air provisions shall be made for freezer rooms operating at or below 0°C.

E20 Furnishings

E2010 Laboratory Casework and Other Furnishings

Wood Casework: Wood casework shall comply with all requirements of AWI Section 400 Custom Grade architectural cabinets. Lumber shall be plain sawn oak; veneer shall be plain sliced oak. Wood casework shall be flush overlay design.

Metal Casework: Metal casework shall be of modern design and shall be constructed in accordance with the recommended practices of the Scientific Equipment and Furniture Association. All units shall be of flush overlay construction. Door and drawer heads shall be of welded, double walled steel construction, 3/4" (18 mm) thick, filled with sound deadening material.

Corrosive Storage Cabinets:Cabinets shall be vented with corrosion resistant liner designed and labeled specifically for the storage of acids and other corrosive substances, to meet code requirements

Flammable Liquid/Solvent Storage Cabinets:Cabinets shall be metal designed and labeled specifically for the storage of flammable liquids and other volatile substances, to meet code requirements.

Ventilated Storage Cabinets shall have perforated metal adjustable shelving, vent louvers inset on the lower portion of the door, and a 2" diameter PVC connection to the building exhaust system.

Laboratory work surfaces: These shall be 1" thick chemically resistant modified epoxy resin.

Stainless steel work surfaces: These shall be 16 gauge (1.6 mm thick), type 304, #4 finish with heavy mastic coating underside and perimeter timber fixing frame.

Adjustable reagent shelves: These shall be ¾ inch thick, 7-ply shop sanded exterior grade veneer plywood shelving with K+ face veneers with chemical resistant plastic laminate on all surfaces on book-end brackets mounted on double-slotted 2 inch x 2 inch fully welded square steel tube support frame. All shelves shall have 1-1/2" high safety edging.

Adjustable wall shelves: These shall be ¾ inch thick, 7-ply shop sanded exterior grade veneer plywood shelving with K+ face veneers with chemical resistant plastic laminate on all surfaces on book-end brackets mounted on double-slotted standards. All shelves shall have 1-1/2" high safety edging.

Heavy-duty shelving: These shall be 1 inch thick, 7-ply hardwood plywood with chemical resistant plastic laminate on all surfaces and edges on heavy-duty shelf standards and brackets. All shelves shall have 1-1/2" high safety edging.

Stainless steel shelving: These shall be Super Erecta stainless steel shelf system, post supported, floor mounted or wall mounted, and floor mounted high density configuration, and shall include all accessories required for function.

Open industrial metal shelf units: These shall be premium grade 20 gauge steel shelf units comprised of 5 shelves adjustable on 1" increments, 85" high 14 gauge angle post supports, and side and rear cross-bracing.

Cylinder Restraints: These shall be fabricated with Unistrut, Powerstrut or equal.

Overhead service carriers: These shall be fabricated with unistrut channels supported from structure above at 48" on center maximum and include a 14 gauge metal channel at bottom for mounting of piped services and electrical raceways.

Suspended metal channel grid: Purpose designed to support 200 lb. (0.89 kN) point load at any position and 50 lb./ft. (0.73 kN/m) uniformly distributed load. All brackets, channels, etc. (galvanized metal).

Pipe drop enclosures: These shall be an 18 gauge galvanized steel sheet enclosure with removable cover panels and epoxy paint finish.

Drying racks: These shall have a stainless steel body with white polypropylene pegs and integral drain trough with welded stainless steel trough ends.

E2015 Non-Laboratory Casework and Other Specialties

Casework: Typical casework provided in the student lounge and tech offices will consist of plastic laminate millwork cabinets, countertops and shelving. Fixed plastic laminate tables will be provided at the Large and Medium Classrooms.

Visual Display Boards: Tack boards and glass marker boards will be provided in classrooms and collaboration spaces.

Toilet Compartments: Provide solid phenolic core partitions that are floor-to-ceiling mount.

Window Blinds: Roller blind window coverings will be provided throughout the building, with blackout shades at labs and classrooms having video projection.

Projections Screens: Provide roll down projection screens.

Signage: Interior way-finding and room identification signage, and exterior building signage will be provided.

Bicycle Racks: Stainless steel bicycle racks will be provided.

Fire Extinguisher Cabinets: Provide recessed stainless steel fire extinguisher cabinets.

Toilet Accessories: Provide stainless steel toilet accessories.

F Other building construction
No requirements.

G Site work

G10 Site Preparation
Site Preparation and Excavation
Existing Cadet Hall will be demolished for the construction of the new Engineering Building addition. Cadet Hall has an approximately 5,000-sf footprint and is two floors. Demolition will include removal of all building and foundations, capping of utility services and disposal of all materials to appropriate and legal locations.

Site preparation for the Engineering Building Addition will include removal of the existing paving and miscellaneous site features in the work area.

The topsoil and vegetative material will be removed, screened and saved for re-use in revised landscaped areas. The subgrade will be prepared prior to placing structural fill or building foundations, per future geotechnical recommendations. Structural fill will be approved imported material. Native silty or clayey material is not be acceptable for use as structural fill and will be hauled of site.

Temporary Sediment and Erosion Control
During construction, all temporary erosion and sedimentation control systems will be designed and constructed in accordance with the Eastern Washington Regional Stormwater Manual Best Management Practices (BMP's), to protect of site properties as well as minimize the quantity of sediment-laden water from entering the City of Cheney's public storm system. The site will be graded to drain to sediment control ponds or temporary tanks on the lower site, near the Art Walk, off 7th Street.

Temporary catch basin protection should be installed and maintained on existing and new catch basins to filter sediment-laden water entering the existing storm conveyance system during construction.

Temporary Construction Features

The project will require temporary construction access from the upper west parking lot, and likely also from the lower lot area to the southeast. This access and other contractor laydown and trailer space will need to be coordinated with ongoing campus activities and circulation needs. Quarry spall work pads on disturbed soils, and silt fencing placed around the downhill portion of the site will further control soils and limit erosion. Soil stockpiles will need to be erosion protected, with plastic sheeting or other approved measures to prevent sediment migration from the site.

Construction Debris: The contractor will implement BMP's to prevent demolition and construction debris, waste, material, fuel, oil, lubricants, and other fluids from entering the public right of way and the existing storm conveyance system. All waste materials shall be disposed of in appropriate, legal locations. Recycling or reuse of demolished or excess material when appropriate is encouraged.

Foundation Subdrainage: A footing and slab drainage system will be incorporated, and discharge into a stormwater detention system described under G30 or directly into the campus stormwater system in under then Engineering lawn. This system discharges to the City system in 7th Street. . Slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drain pipes in the free-draining layer will gravity drain to the existing campus storm system.

G20 Site Improvements

Site Development: The building will be accessed from the parking lot on the west side off Washington Street, and from the lower site off the southeast at the Engineering Lawn. Delivery access can be made from either side.

Landscaping: A combination of xeriscape planting, grass lawns, biofiltration swales (described under G30), and trees will be provided.

Irrigation: An irrigation system will be provided, and will be supplemented by water collected in the stormwater detention system described under G30.

Site Paving

Site paving will consist of asphalt and concrete per University standards. Paving will be for new/ replaced walks and drives around the new building and to patch utility trenches., in-kind matching existing surfaces.

Asphalt for restored parking areas and new loading/utility yard off west parking , assume 6-in of ½-in HMA over 6-in crushed base.

Concrete walks and plazas around the buildings, 6-in w/ reinforcing. Where needed for fire lane, 8-in thick pavement.

At University direction, some areas of new/replaced paving will have snow melt tubing and connection to campus or building boilers for heat.

Fire Truck Access

Fire truck access can be provided off the parking lot on the west side, at Washington Street and from 7th Street, via the Art Walk. There are three existing fire hydrants within a 300-foot radius of the proposed building. One off the Northwest corner of Cadet Hall appears to be in the footprint of the new addition, and should be moved (replaced) west into the parking lot.

Water Supply

Water mains: Existing Campus water mains are to the west, under the parking lot, and south between this site and the Art Buildings. Part of the campus main under the parking lot will need to be relocated further west to avoid the new addition west wing.

A single combined fire and domestic water service will be provided to the building from the University system water line under the west parking lot, and between the addition site and the Art Building. Alternately, the addition may be served from the existing 6-in service that enters the existing CEB from the west parking lot. Analysis from the plumbing and fire design will be required to confirm adequate flow from this 6-in connection.

Water Meter: An in-building water meter will be provided to measure the domestic water use in the new building for the purpose of; reporting trends in building systems consumption required by WA State law, reporting of meeting LEED criteria, and real-time display of building systems performance data for use by engineering courses at EWU.

Sanitary Sewer

All floors of the addition should be able to discharge waste by gravity to the campus sanitary sewer system located off the southeast of the site, under the engineering lawn. A new 6-in connection to this system is anticipated, approximately 150-ft of 6-in sewer pipe needed to make a new connection.

Stormwater Treatment and Disposal

The University's stormwater system drains to the City of Cheney's street storm system. Development of this addition will conform to the City's current surface water development manual which specifies stormwater design standards. The City has adopted the Spokane Regional Stormwater Manual, April 2008, which also governs stormwater design for Spokane County, the City of Spokane, and the City of Spokane Valley. Storm water collected off new roof areas will not need to be treated for water quality but can be directed to the new storm water flow control system (detention tank). If new and replaced vehicular use pavements exceed 5,000-sf within this project, then water quality treatment facilities will need to be provided for water collected off these surfaces. For small areas this is usually best done before detention. Cartridge filter systems or grass swales may be possible based on available space and locations.

Stormwater Detention System: The soils on the EWU campus are typically fine-grained and usually not suitable for infiltration as the sole source of stormwater disposal. Stormwater runoff, from the roof and from adjacent new and replaced pavements, will be routed to a detention system, approximately 2,500-CF in an underground tank or vault beneath the south, upper side of the site. This detention system will discharge to the storm system at the lower site level, below the Art building and near Media Lane. Approximately 60-ft of 8-in pipe will connect it to existing systems.

Foundation Subdrainage: A footing and slab drainage system will be incorporated, and discharge directly into the campus stormwater system. Below slab drainage will be a layer of washed, free draining aggregate underlain by a filter fabric. Perforated drain pipes in the free-draining layer will gravity drain to the existing campus storm system.

The existing campus storm system runs southeast in Media Lane and connects to City systems at

7th Street.

Connection to Campus Utility Tunnel

West of the site, under the asphalt parking lot, a branch of the campus utility tunnel provides access to many campus utilities, including power, communications, steam, and chilled water. A new low temperature heating water system will be installed near this building as part of the geothermal heating and cooling plant, which will be a separate project, near this building. Below grade, the new building will not directly affect the tunnel, the basement level will stop short of the tunnel walls. A short new spur off the tunnel will run into basement mechanical spaces allowing the new building to access campus utilities in the tunnel. Above grade the new addition will span over the tunnel, without bearing on it.

Gas Distribution

Natural gas service is provided to the existing CEB by Avista Utilities, from a service under the west parking lot. It may be possible for this service to provide for the new addition, or a new separate service to the addition provided. Gas loads from the mechanical design will determine the required path for this.

G4010 Electrical Distribution

The EWU Campus currently receives electrical utility power via two separate 13.2KV electrical service feeders from the City of Cheney. These two 13.2KV electrical service feeders are terminated within the EWU Rozell Substation at Campus Switchgear Bus #1 and Campus Switchgear Bus #2. Four separate 13.2KV campus feeders are routed from the Campus Switchgear to a system of 13.2KV switches located throughout the EWU campus in order to provide increased redundancy and flexibility to the campus electrical distribution system.

G4020 Site Lighting

Site lighting will be selected in conformance with EWU campus standards and will utilize full cut off LED light fixtures in order to avoid light trespass and meet associated dark sky lighting requirements. Site lighting which illuminates the path of egress will be supplied with power from the emergency generator system in the event of a failure on the normal power system. Site lighting will be controlled via a programmable low voltage lighting control system which will allow the site lighting to be automatically turned on and off at pre-programmed times.

G4090 Other Site Electrical Utilities

G4030 Site Communication/Data

Data/Communication service is provided to the existing building from the EWU owned data/com distribution system. Fiber optic cabling is typically routed throughout the EWU Campus via a system of cable tray that is located within the existing campus utility tunnel system. New telecommunications building service pathways will be provided and installed by the contractor. New building service pathways will be routed from the existing campus utility tunnel system into the main telecom room or be extended from the existing ground floor MDF in the existing building. Telecommunications building service cabling will be provided and installed by the contractor.

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EASTERN WASHINGTON UNIVERSITY

LUCY COVINGTON LEADERSHIP HOUSE PREDESIGN
EASTERN WASHINGTON UNIVERSITY
CHENEY, WASHINGTON

25 JUNE 2024

OFM PROJECT NUMBER: 40000071

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EASTERN WASHINGTON UNIVERSITY

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STUDENT ENGAGEMENT-NATIVE AMERICAN STUDENT ASSOCIATION (NASA)
On November 17, 2022, and February 15, 2024, many members of NASA, lead by former President Strong Heart, and current President War Bear, attended predesign engagement sessions. During these sessions students provided input related to visioning, site selection and programming as part of the predesign effort.

We wish to thank all NASA members for their time and feedback to the Predesign Team.

Section 01

EXECUTIVE SUMMARY

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SECTION 01

EXECUTIVE SUMMARY

Lucy Covington, a long-time tribal rights activist and Colville Tribal Council member, helped change the course of American Indian history through her courageous and selfless style of leadership. She worked with members of her own tribe and other tribes across the country to help preserve tribal sovereignty and self-determination. She also worked to protect tribal rights and resources, develop tribal services, govern the reservation for the benefit of tribe members, and promote inter-tribal cooperation.

Lucy exemplified American Indian self-determination in action and her efforts engendered a shift of U.S. policy from termination to independence and autonomy. She is considered "the most significant advocate for American Indians in the last half of the 20th century" (Mark Trahant, The Last Great Battle of the Indian Wars). Covington died in 1982, at age 71.

In 2015, Eastern Washington University posthumously presented an honorary doctorate to Lucy Covington and announced the creation of a student center in her name.

The proposed Lucy Covington Leadership House facility encompasses approximately 10,000 net assignable square feet (NASF) designated for community gathering, student support, and exhibition to support American Indian students. This facility will further the goals of Eastern Washington University's Lucy Covington Initiative and their commitment to regional tribes by honoring Lucy Covington's legacy and providing dedicated support for American Indian students.

PROBLEM STATEMENT

American Indian students are vastly underrepresented in higher education, making up less than one percent of college students. While many factors contribute to low college attendance rates for American Indian students, most of those barriers can be traced back to a singular source: invisibility. Eastern Washington University (EWU) hopes to create a space where American Indian and non-American Indians can work together to combat invisibility of the Indigenous peoples of this region.

Declining enrollment of American Indian students is also a critical problem. American Indian student enrollment, at EWU and across the state of Washington, has declined by approximately 40 to 50 percent over the last 15 years. In contrast, other race/ethnicity groups have increased by 60 percent or more in the same time frame. The Lucy Covington Leadership House is part of the broader Lucy Covington Initiative at EWU.

The Initiative seeks to support future leaders by honoring her legacy, educate the next generation of American Indian leaders, create a confluence of cultures and causes through community scholars and tribal leaders, and develop an archival project documenting the efforts of Lucy Covington and those who fought with her to protect sovereignty and self-determination.

The Lucy Covington Leadership House will also further the goals of Eastern Washington University's commitment to the Memoranda of Understanding (MOU) with three regional tribes, the purpose of which is to sustain and advance relationships with EWU and construct a longhouse-style facility on campus.

Lucy Covington Leadership House will address these problems identified in its project goals:

> Create visibility and a sense of belonging for American Indian students with a dedicated facility that supports self-exploration and self-understanding of their values, identities, cultural heritage, and career paths.

> Improve access and retention of American Indian students by serving as a center to support their growth and development at EWU.

> Bring together national speakers, scholars, academics, traditional practitioners, and Native leaders to share their experiences, wisdom, research, and indigenous knowledge.

> Develop programming that promotes understanding across cultures and political boundaries to address challenges and opportunities.

> Provide exhibit space for digital historic documents pertaining to the life and work of Lucy Covington as a part of the continued education related to the importance of protecting tribal sovereignty and self-determination.

> Open exhibit space to local tribes, American Indian students, and artists to display their work and culture.

ALTERNATIVES CONSIDERED

Through the predesign process, the design team considered a range of alternatives to meet the needs identified in Section 02. Alternatives that were evaluated include:

> Preferred Alternative: Lucy Covington Leadership House (~15,000 GSF)

> Alternative 1: Full Buildout, Preferred Alternative + Future Expansion (~33,000 GSF)

> Alternative 2: No Action

Alternatives were evaluated in terms of advantages, disadvantages, cost, and schedule. Each alternative is summarized next.

PREFERRED ALTERNATIVE: LUCY COVINGTON LEADERSHIP HOUSE (15,000 GSF)

The conceptual program for the Preferred Alternative allocates approximately 10,000 net assignable square feet (NASF) for a total of approximately 15,000 gross square feet (GSF), into a single-story facility that supports the project goals described in Section 02, Problem Statement. The proposed Lucy Covington Leadership House brings together cultural/community gathering and event space, student support and collaboration areas, and an exhibit gallery and performance space.

The proposed building concept provides a speaking hall that accommodates up to 300 people for community and cultural events, a learning commons for studying and student collaboration, and an exhibit space featuring the life and legacy of Lucy Covington and American Indian Art and Culture.

The Preferred Alternative achieves many of the project's goals and addresses the identified problem.

ALTERNATIVE 1: PREFERRED ALTERNATIVE + POSSIBLE FUTURE EXPANSION (28,000 GSF)

The full buildout alternative expands the program by approximately 8,000 NASF for a total of approximately 13,000 additional GSF. The full buildout proposes building the 15,000 GSF Preferred Alternative along with a 13,000 GSF expansion for a total buildout of 28,000 GSF.

In addition to providing cultural/community gathering and event spaces, student collaboration and support spaces, and exhibit gallery and performance spaces, the full buildout will have instructional program spaces that expand the American Indian Studies program and introduce new programs such as a Tribal Government program and dedicated Salish Language teaching space. There will be additional classrooms and faculty offices associated with this expansion.

Alternative 1 achieves and expands upon the project's goals and addresses the problems identified. Although Alternative 1 more fully achieves the project goals, it was not chosen due to the following challenges:

> Requires additional capital funding and therefore would result in a larger capital project funding request.

> Operational funding to expand academic programs as described above has not yet been procured.

ALTERNATIVE 2: NO ACTION

The No Action Alternative would perpetuate the substandard quality of experience and poor retention rates for American Indian students at EWU. American Indian students would continue to have limited representation on campus and limited space dedicated to their support. They would need to continue to use the one inadequate room available in the existing American Indian Education Center building, which houses the American Indian Studies program, for meetings, studying, and socializing.

Additionally, Alternative 2 - No Action, does not fulfill EWU's strategic mission in the following ways:

> It does not create a presence on campus for American Indian students and American Indian culture, even though there are at least four major Tribal nations in the vicinity of Eastern Washington University.

> It does not fulfill one of the primary purposes of the Memoranda of Understandings between EWU and three Tribal Nations: to construct a longhouse-style facility that enhances recruitment and success of American Indian students.

TABLE:
Numeric Program Summary

PREFERRED ALTERNATIVE

PROGRAM

The conceptual program for the Preferred Alternative allocates 15,000 GSF into a new one-story Lucy Covington Leadership House that supports the project goals. The building program focuses on three key areas that support the goals of the Lucy Covington Initiative: Community Gathering, Student Support, and Celebrating Lucy Covington's Life and Legacy.

The building has an efficiency of 65 percent and provides the following program areas:

- A 300-seat Speaking Hall and associated support areas.
- A dedicated American Indian Student Center that includes a Learning Commons (student lounge, small group rooms, and makerspace), community kitchen and dining, and flexible meeting areas.
- An exhibit hall that celebrates the life and legacy of Lucy Covington and tribal cultures.

PREFERRED ALTERNATIVE

PROGRAM AREA		NSF	% of NSF
COMMUNITY GATHERING AREAS			
Speaking Hall		5,100	*52.6%*
AMERICAN INDIAN STUDENT CENTER			
Learning Commons		1,800	*18.6%*
Dining Area		1,550	*16.0%*
Flexible Meeting Space		240	*2.5%*
EXHIBITION AREAS			
Lucy Covington Life & Legacy Gallery		1,000	*10.3%*
Total Assignable Square Feet (NASF)		***9,690***	
UNASSIGNABLE AREAS	*% of GSF*		
Building Support	*6.1%*	910	
Building Systems	*8.0%*	1,200	
Circulation / Walls	*21.3%*	3,200	
Subtotal - Unassignable Areas	*35.4%*	*5,310*	
Total Building Area		**15,000**	
Building Efficiency		**65%**	

DIAGRAM:
Preferred Alternative: Lucy Covington Leadership House

SITE

For the purposes of this Predesign study, the Reid site was selected by stakeholders for the Lucy Covington Leadership House. It is directly south of Martin and Williamson Hall at the southeastern edge of the EWU campus in Cheney, Washington and is approximately 1.4 acres in size.

It is important to note that its status as the final choice may be subject to change pending updates to EWU's Campus Master Plan. As EWU moves forward with updating its Master Plan, future projects will need to align with the revised vision and objectives outlined in that plan.

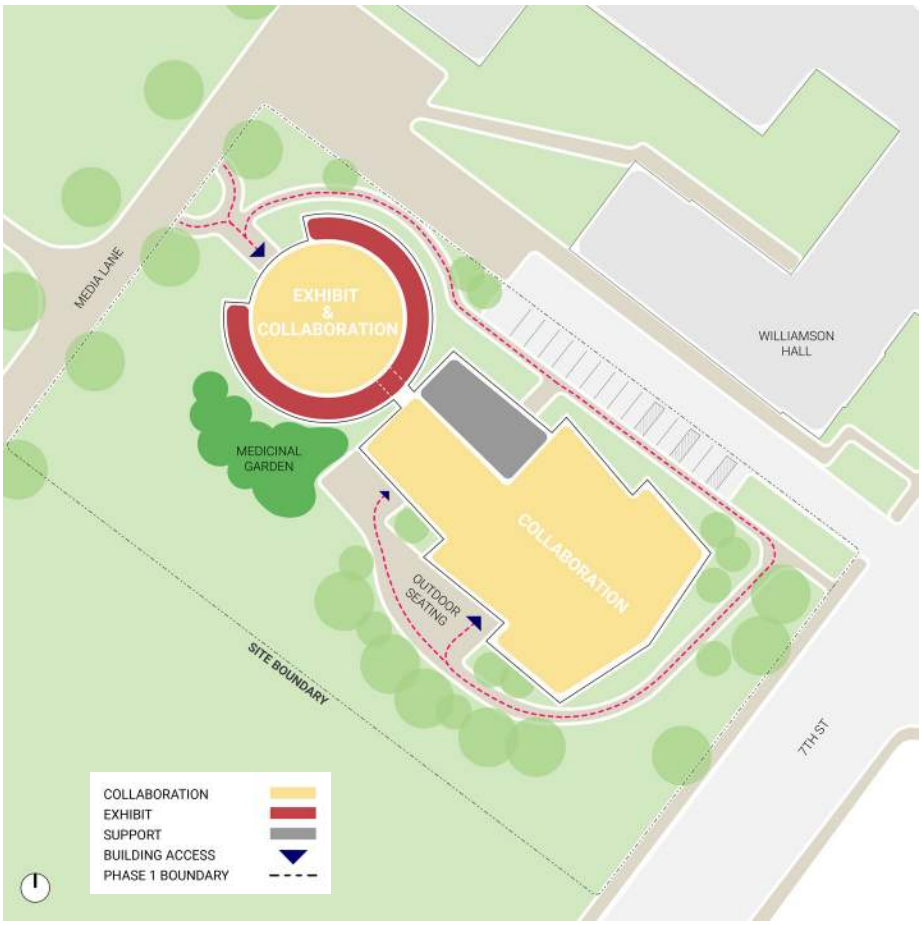
BUILDING CONFIGURATION

The Preferred Alternative concept for the Lucy Covington Leadership House is a 15,000-square-foot, one-story building. The main building entry is located off of the primary pedestrian thoroughfare on campus.

Through the vestibule, students will be welcomed into the Learning Commons, a circular lounge and student support area. This area is designed for group gatherings and collaborative activities, but also includes contemplative spots that provide areas for focused study and respite. It is surrounded by an exhibit area that will showcase Lucy Covington's life and tribal cultures.

The Learning Commons' double-height volume will integrate a skylight that will enhance natural light and provide a visual link between the sky, the occupants, and the earth, connecting building users to the natural environment.

From here, a longhouse-inspired volume can be accessed, which will be used for more formal gathering. This area contains the Speaker Hall at the south end, as well as centrally-located community kitchen and dining areas, a makerspace, and the main service core, including restrooms and building system areas.



The south and southwest edges of the site will use land-sculpting to create earthen berms. These will provide screening and casual places to sit during events, as the dining area and Speaking Hall will open onto these areas and create a more seamless indoor/outdoor experience.

TABLE:
Budget Request / Cost Summary (Top / Center)
Project Schedule (Bottom)

PROJECT BUDGET & SCHEDULE

PROJECT BUDGET

The state funding request for this project is approximately $21 million, with Design funding requested in the 2025-27 Biennium and construction funding requested in the 2027-29 Biennium.

PROJECT SCHEDULE

The anticipated project schedule for the Preferred Alternative is shown at right, and assumes design and construction funding are awarded in the 2027-29 Capital Budget.

Design is slated to start in November 2026, with construction beginning in November 2027 and reaching substantial completion by November 2028. Building occupancy is anticipated in February 2029.

Agency / Institution Project Request	
Design / Construction Request, 2025-2027 Biennium	$20,739,000
Total Project Request	**$20,739,000**
Pre-Design Report (Non-State Funds)	$300,000
Total Project Funds	**$21,039,000**

Probable Cost Estimate Summary: Preferred Alternative		
Construction Cost	$16,110,800	77.7%
Consultant Services	$2,765,000	13.3%
Equipment	$643,100	3.1%
Artwork	$103,200	0.5%
Project Administration	$1,117,200	5.4%
Other Costs	$0	0.0%
Total Project Cost	**$20,739,000**	100%

Project Schedule: Preferred Alternative			
PHASE	DURATION	START DATE	END DATE
Design / Construction Funding		July 2025	
Design	12 mos.	November 2026	November 2027
Construction	12 mos.	November 2027	November 2028
Move-In / FF&E	3 mos.	November 2028	February 2029
Occupancy		February 2029	

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Section 02

PROBLEM STATEMENT

A. Problem Identification

B. Statutory & Other Requirements

C. Connection to Agency Mission, Goals, & Objectives

D. What is Needed to Solve the Problem

E. Relevant Project History

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SECTION 02

PROBLEM STATEMENT

A. PROBLEM IDENTIFICATION

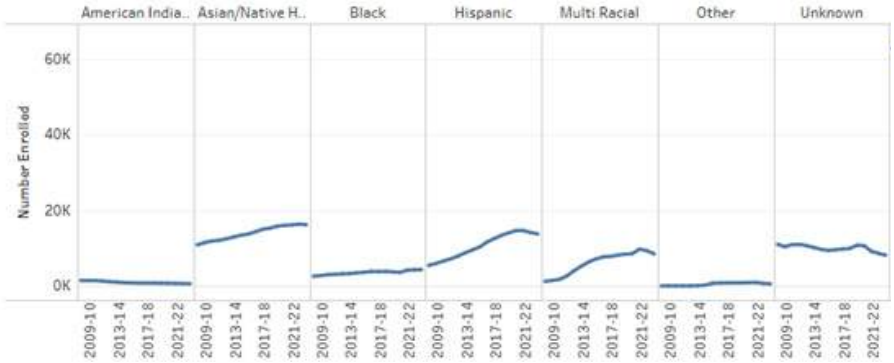
PROJECT OPPORTUNITY

American Indian students are vastly underrepresented in higher education, making up less than one percent of college students. While many factors contribute to low college attendance rates for American Indian students, most of those barriers can be traced back to a singular source: invisibility. Eastern Washington University (EWU) hopes to create a space where American Indian and non-American Indians can work together to combat the invisibility of the Indigenous peoples of this region.

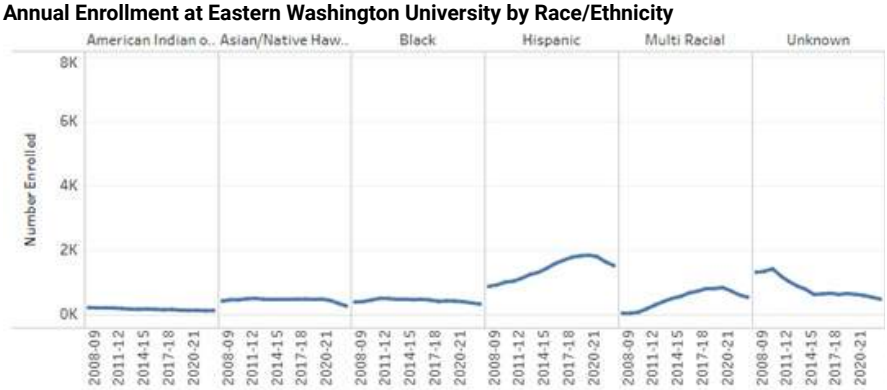
The issue of invisibility severely impacts how non-Native individuals and organizations interact, or more importantly, avoid interacting and partnering with American Indian and Alaskan Native populations. EWU hopes to create a space where they can work together to combat the invisibility of the Indigenous peoples of this region.

Declining enrollment of American Indian students is also a critical problem. American Indian student enrollment, at EWU and across the state of Washington, has declined by approximately 40 to 50 percent over the last 15 years. In contrast, other race/ethnicity groups have increased by 60 percent or more in the same time frame. The Lucy Covington Leadership House is part of the broader Lucy Covington Initiative at EWU.

Annual Enrollment Statewide by Race/Ethnicity



Annual Enrollment at Eastern Washington University by Race/Ethnicity



*Reference: https://erdc.wa.gov/data-dashboards/public-four-year-dashboard#annual-enrollment

B. STATUTORY & OTHER REQUIREMENTS

STATUTORY & OTHER REQUIREMENTS

Memoranda of Understanding
The Lucy Covington Leadership House will further the goals of Eastern Washington University's commitment to the Memoranda of Understanding (MOUs) with three regional Tribes: Coeur d'Alene (July 26, 2019), Kalispel (February 12, 2018), and Spokane (April 15, 2019).

The primary purpose of the MOUs is to sustain and advance relationships between EWU and these Tribes and is summarized as follows:

> Establish an Annual Tribal Leadership Summit.

> Establish an American Indian Advisory Board where each Tribe has the authority to appoint one individual.

> Recruit, retain, and successfully graduate more American Indian students.

> Recruit, retain, and promote qualified American Indian faculty and staff to aid EWU in its mission and delivery of services to tribal communities and American Indian students.

> Strengthen partnerships between tribal communities and EWU academic and student support areas.

> Plan and construct a longhouse-style facility on campus that enhances the recruitment and success of American Indian students, acknowledges and honors the region's Tribes, and serves as a place for cultural learning and exchange for the entire community.

Through the MOUs, the preceding priorities will receive sustained attention from EWU and the Tribes to maintain communication and address shared objectives.

The MOUs are guided in spirit by the Centennial Accord between the Federally Recognized Indian Tribes in Washington State and the State of Washington of 1989. The accord affirms the sovereignty of Washington's federally recognized tribes and calls for clearer communication and better collaboration between tribal and state governments.

For more information on the Centennial Accord, follow the link: Centennial Accord | GOIA (wa.gov).

The MOUs are included in the Appendices for reference.

Lucy Covington Center Repository Research Agreement
Through an ongoing partnership with the Colville Confederated Tribes that Eastern Washington University formalized in the 'Lucy Covington Center Repository Research Agreement,' EWU intends to honor Lucy Covington's legacy. The Initiative identifies the following emphasis areas: supporting future leaders; creating a confluence of culture and causes; and developing a Lucy Covington Archive.

Development on EWU campus is regulated by the Cheney Municipal Code and the 2014 EWU Comprehensive Campus Master Plan (EWU CCMP). The Campus Master Plan is being updated in 2024-2025.

C. CONNECTION TO AGENCY MISSION, GOALS & OBJECTIVES

The EWU Strategic Plan is in draft form at the time of this Predesign publication. The following narrative demonstrates how this project is in alignment with the draft mission, goals, objectives, and desired outcomes identified.

The Lucy Covington Leadership House and Lucy Covington Initiative are part of EWU's strategic plan to increase graduation rates of underrepresented students (including American Indians). The Lucy Covington Leadership House will support this endeavor through programs and events within the facility intended to boost enrollment and retention of American Indian students.

The Lucy Covington Leadership House aligns with EWU's mission to foster an inclusive, equitable, and transformative learning environment. American Indian students at EWU have significant barriers to accessing higher education, have a higher risk of dropping out, and lower retention rates compared to other groups. American Indian students have barriers common to first-generation, low-income, and other structurally marginalized students. EWU strives to integrate the principles of justice, equity, diversity and inclusion into all University operations to foster an environment that nurtures a sense of belonging among all members of the community.

SENSE OF BELONGING

EWU strives to foster a profound sense of belonging, actively promote and sustain equity, dismantle systemic barriers, and embrace the unique perspectives of all individuals. As a desired outcome of this goal, the Lucy Covington Leadership House will create an important space to nurture this sense of belonging for American Indian students who often commute great distances from their reservations to be at Eastern Washington University.

STUDENT SUCCESS AND STUDENT EXPERIENCE

Another important goal is to promote student success and close structural equity gaps through a holistic, decolonial, people-centered, value-driven approach that prioritizes student well-being in multiple dimensions and supports students' self-exploration and self-understanding of their values, identities, cultural heritages and career paths.

As a facility dedicated to empowering and supporting American Indian students, the Lucy Covington House will be a home for American Indian students' academic advising and student services, and will help them break through the systemic barriers noted above.

D. WHAT IS NEEDED TO SOLVE THE PROBLEM

The Lucy Covington Leadership House is part of the broader Lucy Covington Initiative at EWU. The initiative seeks to support future leaders by honoring her legacy, educate the next generation of Native American leaders, create confluence of cultures and causes through community scholars and tribal leaders, and develop an archival project documenting the efforts of Lucy Covington and those who fought with her to protect sovereignty and self-determination.

The Lucy Covington Leadership House will address the identified problems in its project goals:

> Create visibility and a sense of belonging for American Indian students with a dedicated facility that supports self-exploration and self-understanding of their values, identities, cultural heritage, and career paths.

> Improve access and retention of American Indian students by serving as a center for American Indian students to support their growth and development at EWU. It will be a center where these students can have a sense of belonging.

> Bring together national speakers, scholars, academics, traditional practitioners, and Native leaders to share their experiences, wisdom, research, and indigenous knowledge.

> Develop programming that promotes understanding across cultures and political boundaries to address challenges and opportunities.

> Build a virtual archive of historic documents pertaining to the work of Lucy Covington as a part of the continued research and education regarding the importance of protecting sovereignty and self-determination.

E. RELEVANT PROJECT HISTORY

There have been no previous predesign studies or capital funding requests for the Lucky Covington Leadership House.

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Section 03

ANALYSIS OF ALTERNATIVES

A. Description of Alternatives

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SECTION 03

ANALYSIS OF ALTERNATIVES

A. DESCRIPTION OF ALTERNATIVES

The predesign team considered a range of alternatives to meet the needs identified in Section 02. Alternatives that were evaluated include:

> Preferred Alternative: Lucy Covington Leadership House (~15,000 GSF)

> Alternative 1: Full Buildout, Preferred Alternative + Future Expansion (~28,000 GSF)

> Alternative 2: No Action

Alternatives were evaluated in terms of advantages, disadvantages, cost, and schedule. Each alternative is summarized below and on the following pages.

PREFERRED ALTERNATIVE: LUCY COVINGTON LEADERSHIP HOUSE (15,000 GSF)

The conceptual program for the Preferred Alternative allocates approximately 10,000 net assignable square feet (NASF) for a total of approximately 15,000 gross square feet (GSF), into a single-story facility that supports the project goals described in Section 02, Problem Statement. The proposed Lucy Covington Leadership House brings together cultural/community gathering and event space, student support and collaboration areas, and an exhibit gallery and performance space.

The proposed building concept provides a speaking hall that accommodates up to 300 people for community and cultural events, a learning commons for studying and student collaboration, and an exhibit space featuring the life and legacy of Lucy Covington and American Indian Art and Culture.

The Preferred Alternative achieves many of the project's goals and addresses the identified problem.

ALTERNATIVE 1: FULL BUILDOUT, PREFERRED ALTERNATIVE + FUTURE EXPANSION (~28,000 GSF)

The full buildout alternative expands the program by approximately 8,000 NASF for a total of approximately 13,000 additional GSF. The full buildout proposes building the 15,000 GSF Preferred Alternative along with a 13,000 GSF expansion for a total buildout of 28,000 GSF.

In addition to providing cultural/community gathering and event spaces, student collaboration and support spaces, and exhibit gallery and performance spaces, the full buildout will have instructional program spaces that expand the American Indian Studies program and introduce new programs such as a Tribal Government program and dedicated Salish Language teaching space. There will be additional classrooms and faculty offices associated with this expansion.

Alternative 1 achieves and expands upon the project's goals and addresses the problems identified. Although Alternative 1 more fully achieves the project goals, it was not chosen due to the following challenges:

> Requires additional capital funding and therefore would result in a larger capital project funding request.

> Operational funding to expand academic programs as described above has not yet been procured.

ALTERNATIVE 2: NO ACTION

The No Action Alternative would perpetuate the substandard quality of experience and poor retention rates for American Indian students at EWU. American Indian students would continue to have limited representation on campus and limited space dedicated to their support. They would need to continue to use the one inadequate room available in the existing American Indian Education Center building, which houses the American Indian Studies program, for meetings, studying, and socializing.

Additionally, Alternative 2 - No Action, does not fulfill EWU's strategic mission in the following ways:

> It does not create a presence on campus for American Indian students and American Indian culture, even though there are at least four major Tribal nations in the vicinity of Eastern Washington University.

> It does not fulfill one of the primary purposes of the Memoranda of Understandings between EWU and three Tribal Nations: to construct a longhouse-style facility that enhances recruitment and success of American Indian students.

IMAGE:
Isle Hall

ADDITIONAL STUDY: ISLE HALL SITE LOCATION

Site locations for the project were reviewed as part of the Predesign process, and included engagement with the Project Steering Committee, American Indian EWU students, and EWU American Indian Studies faculty.

Although not selected, the Isle Hall site was considered as a potential location due to it's visibility and gateway location on campus. However, constituents voiced concerns about the level of vehicular traffic and related noise, as well as the cost impact of demolishing the existing building if it could not be retrofitted into an appropriate American Indian cultural space. The site is also limited in size and therefore would likely not accommodate both the proposed building and the significant outdoor space needed for this program, without constructing a new multi-story facility.

The Isle Hall building site still presents a promising opportunity for the project. Utilizing the Isle site could lead to significant improvements in Campus Energy Use Intensity (EUI) and provide a pathway towards compliance with the Clean Building Performance Standard and HB1390. This aligns with EWU's commitment to sustainability, carbon reduction, and energy efficiency. The forthcoming campus decarbonization and master plan will provide guidance regarding siting optimization.

Once the project is funded, further evaluation of this site should be incorporated into the design phase.

A.2 ADVANTAGES & DISADVANTAGES OF EACH ALTERNATIVE

A summary of the advantages and disadvantages of each alternative is included in the table on the following page.

TABLE:
Comparative Summary of Alternatives

	Preferred Alternative: Lucy Covington Leadership House (~15,000 GSF)	Alternative 1: Full Buildout, Preferred Alternative + Future Expansion (~28,000 GSF)	Alternative 2: No Action
Est. Cost	**$20,739,000**	**$39,177,000**	No capital funding request.
Advantages	Provides 15,000 GSF of assembly, student support and exhibit space. Addresses the problems defined in Section 02 and achieves the project goals.	Provides 28,000 GSF of assembly, student support and exhibit space along with instructional and faculty office space. Addresses the problems defined in Section 02 and achieves the project goals. It expands upon these goals by expanding the instructional programs currently under American Indian Studies and adds space for a Tribal Government program, an essential program affiliated with the Lucy Covington Initiative.	Lower first cost.
Disadvantages	Requires nearly $21 million of capital funding from the Washington State legislature. Does not include instructional space for expanding American Indian Studies or create dedicated space for a Tribal Government Program.	Requires approximately $39 million of capital funding from the Washington State legislature. Additional academic costs are also required to expand the American Indian Studies program along with academic cost to support a new Tribal Government Program. These costs have not yet been factored in by EWU. Further development is needed before programs may be expanded upon or introduced.	Currently, the American Indian Education Center contains space dedicated to American Indian Studies program. It also offers a study area with available computers, space for meetings, activities, and socializing. It does not meet all the needs of current students. >The limited space does not offer enough space to accommodate the number of current American Indian students who are seeking a space to connect with other American Indian students. >Building location is not centrally located on campus, further emphasizing lack of visibility for American Indian students. >The American Indian Studies building is not reflective of indigenous culture- neither in special organization, nor materiality, as it was originally designed as a church. >Due to its age, the building offers very limited accessibility. The main accessible entry is on the back side of the building offering unequitable experience to students, faculty or visitors with mobility impairments. >The quality of interior spaces is hindered by the lack of natural light, impacting student wellbeing.

TABLES:
Cost Estimate of Preferred Alternative and Alternative 1 (Top and Center)
Life Cycle Cost Summary Table (Bottom)

A.3 COST ESTIMATES

PROJECT COST

Cost estimate summary information for the Preferred Alternative and Alternative 1 – Full Buildout is shown at right.

There is no imminent project associated with Alternative 2 – No Action, and therefore no project cost estimate is provided.

A detailed cost model for the Preferred Alternative is included in Appendix B.

LIFE CYCLE COST MODEL

Each alternative was analyzed using the Life Cycle Cost Model (LCCM) tool provided by the Office of Financial Management. A summary is shown at lower right for the Preferred Alternative and a lease option.

Additional LCCM information for the Preferred Alternative is included in Appendix B.

Probable Cost Estimate Summary: Preferred Alternative		
Construction Cost	$16,110,800	77.7%
Consultant Services	$2,765,000	13.3%
Equipment	$643,100	3.1%
Artwork	$103,200	0.5%
Project Administration	$1,117,200	5.4%
Other Costs	$0	0.0%
Total Project Cost	$20,739,000	100%

Probable Cost Estimate Summary: Alternative 1 Full Buildout		
Construction Cost	$30,194,600	77.1%
Consultant Services	$5,349,700	13.7%
Equipment	$1,286,200	3.3%
Artwork	$194,900	0.5%
Project Administration	$2,151,800	5.5%
Other Costs	$0	0.0%
Total Project Cost	$39,177,000	100%

Life Cycle Cost Model Summary: Preferred Alternative Ownership Option	
Total Gross Square Feet	15,000
Total Rentable Square Feet	9,690
Occupancy Date	November 1,2028
Initial Project Costs	$15,756,338
Est. Construction TPC ($/GSF)	$1,170
RSF/Person Calculated	14
30 year Net Present Value	$15,781,209
50 year Net Present Value	$33,471,153

Life Cycle Cost Model Summary: Lease Option	
Total Rentable Square Feet	15,000
Annual Lease Cost (Initial Term of Lease)	$469,950
New Lease Operating Cost/SF (Initial Term of Lease)	$11.61
Occupancy Date	November 1,2028
Project Initial Costs	$1,257,423
RSF/Person Calculated	17
30 year Net Present Value	$27,695,053
50 year Net Present Value	$34,764,668

TABLES:
Estimated Project Schedule

A.4 ESTIMATED SCHEDULES

A summary of the anticipated schedule for the Preferred Alternative and Alternative 1 – Full Buildout is shown at right, including anticipated start, midpoint, and completion dates.

There is no imminent project associated with Alternative 2 – No Action, and therefore no estimated project schedule is provided.

PREFERRED ALTERNATIVE: LUCY COVINGTON LEADERSHIP HOUSE (15,000 GSF)

The anticipated project schedule for the Preferred Alternative assumes design funding is awarded in the 2025-27 Capital Budget and construction funding is awarded in the 2027-29 Capital Budget.

Design is slated to start in November 2026, with construction beginning in November 2027 and reaching substantial completion by November 2028. Building occupancy is anticipated in February 2029.

ALTERNATIVE 1: FULL BUILDOUT, PREFERRED ALTERNATIVE + FUTURE EXPANSION (~28,000 GSF)

The Alternative 1 – Full Buildout schedule also assumes design funding is awarded in the 2025-27 Capital Budget and construction funding is awarded in the 2027-29 Capital Budget. The anticipated schedule is the same as for the Preferred Alternative.

Project Schedule: Preferred Alternative + Alternative 1 Full Buildout

PHASE	DURATION	START DATE	END DATE
Design / Construction Funding		**July 2025**	
Design	**12 mos.**	**November 2026**	**November 2027**
Construction	**12 mos.**	**November 2027**	**November 2028**
Move-In / FF&E	**3 mos.**	**November 2028**	**February 2029**
Occupancy		**February 2029**	

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Section 04

DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

A. Scope and Project Description

B. Site Analysis

C. Consistency with Long-Term Plans

D. Consistency with Other Laws & Regulations

E. Problems that Require Further Study

F. Components that Exceed Existing Code

G. Planned Technology Infrastructure

H. Planned Security Measures

I. Commissioning

J. Future Phases or Facilities

K. Project Management and Delivery Method

L. Project Schedule

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SECTION 04

DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

A. SCOPE & PROJECT DESCRIPTION

The conceptual program for the Preferred Alternative allocates 15,000 GSF into a new one-story Lucy Covington Leadership House that supports the project goals described in Section 02, Problem Statement. The building program focuses on three key areas that support the goals of the Lucy Covington Initiative: Community Gathering, Student Support, and Celebrating Lucy Covington's Life and Legacy.

Community Gathering

Lucy Covington Leadership House is well-suited to provide a culturally responsive center for collaboration between students, faculty, and tribal nations. With a vision of the Tribal Government Leadership program, the core element of Lucy Covington's Legacy, being established in the future, a large Speaking Hall will provide a unique American Indian multipurpose space to host speakers, performances, and community gatherings.

Student Support

Research indicates that student services are critical to the development and success of students. The Lucy Covington Leadership House is primarily envisioned to support the success of American Indian students attending EWU.

The American Indian Student Center in the new facility will provide a "home away from home" and create a sense of community for these students, allowing for an easier transition from reservation to university. The building will have student support spaces such as a study lounge, makerspace, and collaboration areas, along with flexible meeting space that be used for drop-in counseling and advising.

Celebrating Lucy Covington's Life and Legacy

Lucy Covington's life and legacy can be represented through the following key themes: her warm and welcoming personality, storytelling, and sense of responsibility.

Predesign engagement sessions and research indicated that Lucy Covington's story would be best commemorated by conveying her warmth and welcoming presence immediately upon entry into the building. Display and exhibition pieces will showcase Lucy's achievements alongside the achievements of other American Indian artists and regional and national leaders, emphasizing storytelling, interactivity, and self-reflection. A space for storytelling will be created through the intersection of interactive exhibits of Indigenous art, music, and performance.

The facility will honor Lucy's life by passing on her teachings and leadership legacy and imparting a sense of responsibility to young American Indians to be connected to their roots while succeeding and becoming leaders in the contemporary world.

IMAGE:
Native American Student Association (NASA) Visioning Session with Design Team

PROJECT GOALS

In alignment with EWU's Lucy Covington Initiative, the Lucy Covington Leadership House will help equip and encourage generations of American Indian youth to protect and enhance the welfare of their tribes and tackle the most pressing issues facing humanity. American Indian students are facing many challenges as they are transitioning from their reservation to navigating through higher education. Among them, the lack of visibility and representation is a significant barrier and reason for low success rates in higher education.

A primary goal of this longhouse-inspired facility is to recruit and retain American Indian students, set them up for success, and prepare them for leadership roles within their tribal communities and the wider region. In addition, the building will host opportunities for American Indian students to model leadership driven by indigenous values and follow Lucy Covington's leadership legacy, providing a steppingstone for the future leaders of tribal governments standing for tribal sovereignty.

The Lucy Covington Leadership House will serve as a foundation for building interdisciplinary partnerships, but most importantly it will center indigenous knowledge and work against the erasure of the indigenous histories. In the long term, the building will also help attract and retain leading indigenous scholars, practitioners, and leaders to share experiences, wisdom, and research through teaching and mentoring at EWU.

The Lucy Covington Leadership House will facilitate learning from history, healing, and the restoration of culture and identity of American Indians. It will be a teaching tool to support the University's Climate Action Plan and Prairie Restoration project, serving as a bridge between tradition and the future. In the long term, the facility will support the need for sustainability and climate change education.

STUDENT INPUT TOWARDS PROJECT VISION

Student engagement with EWU's Native American Student Association during the predesign process garnered input about the American Indian Student Center. The discussion fell into three key themes for students: empowerment, stewardship and University support, and reclamation.

Empowerment: Providing a home for American Indian students at EWU will provide the opportunity for these students to feel safe, recognized, and acknowledged on campus. It will be a place for them to connect with their heritage.

Stewardship & University Support: Students believe that the Center will be a great resource for all people to understand and connect with American Indian culture. As a facility that provides support for American Indian students, the project may be a catalyst toward improving access, inclusion, and retention for all students, particularly students of color and disenfranchised populations.

Reclamation: Students want the opportunity for more visibility on campus. The building should serve as a beacon of American Indian culture, pride and indigenous reclamation.

SUSTAINABLE ECOLOGIES

Buildings are responsible for some 40 percent of total annual global greenhouse emissions. To impact climate change, they must be designed sustainably from the start. Although building design is often driven by first costs, sustainable design must move beyond this approach and address the triple bottom line: economy, ecology, and equity.

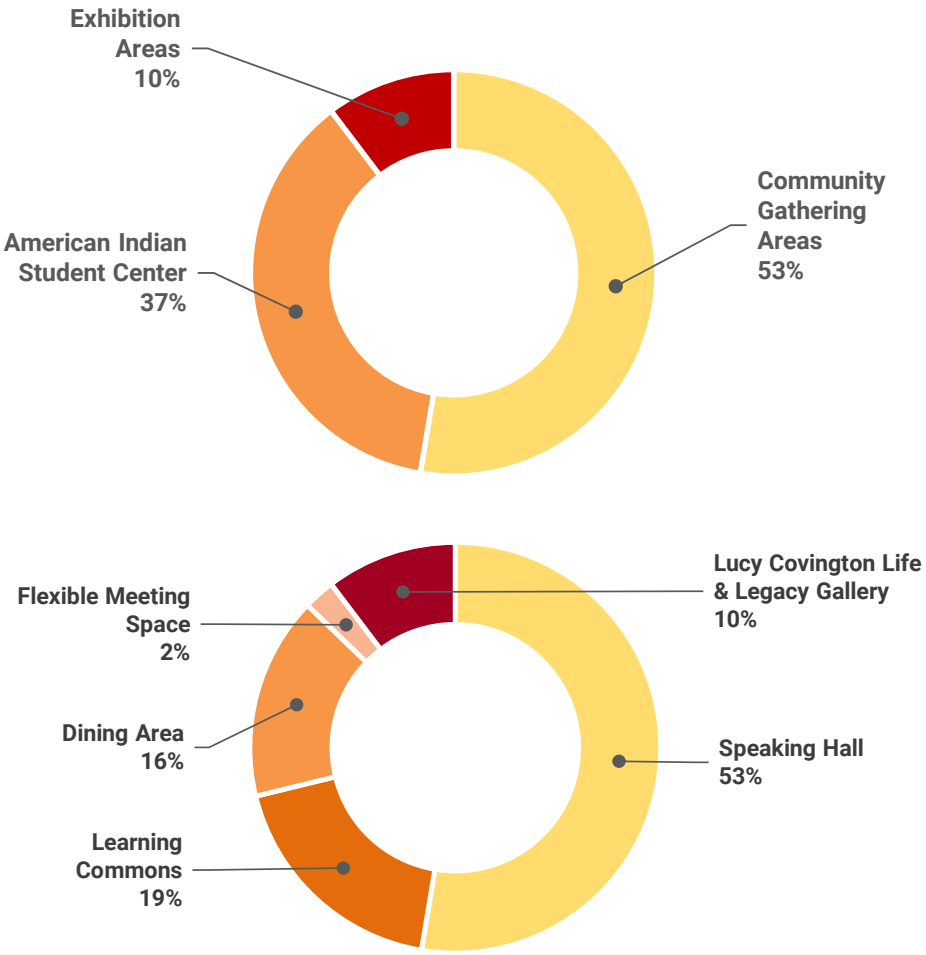
True sustainability is a balance between responsible use of public resources, preservation of ecological systems, and support of societal needs. Eastern Washington University understands these imperatives and has made sustainability a central tenet of their identity and mission, which will be reflected in the Lucy Covington Leadership House.

CHARTS:
Area Allocation by Space Type
Area Allocation by Program

A.1 NATURE OF SPACE

Lucy Covington Leadership House's net assignable program areas have three primary functions, or space types: community gathering, exhibition, and student support.

Of the assignable building area, 53 percent is allocated for Community Gathering Areas, comprised of a Speaking Hall and its support areas, 37 percent is allocated for the American Indian Student Center, including a Learning Commons, Dining Area, and Flexible Meeting Space, and 10 percent is allocated for Exhibition Areas, including the Lucy Covington Life and Legacy Gallery.



COMMUNITY GATHERING AREAS

Speaking Hall

The Speaking Hall will serve a variety of different gathering and performance functions, but its primary intent is to bring American Indians together from around the region. It will serve to hold events where indigenous knowledge is shared, and it will encourage collaboration between indigenous practitioners, scholars, and leaders from the region, nation, and international community.

The space will accommodate approximately 300 lecture-style tiered seats. The building's spatial organization and finishes will draw inspiration from indigenous architecture, resembling a longhouse-style space. Additional Speaking Hall support areas include an audio-visual room, a green room, and designated furniture storage.

AMERICAN INDIAN STUDENT CENTER

Learning Commons

The Learning Commons provides a variety of collaborative spaces to create a welcoming environment for students, mentors, staff, and visitors to engage in multiple ways. Areas include a study lounge, small group collaboration spaces, and a makerspace / open work area. The study lounge will provide a centralized, collaboration space for American Indian students to feel at home and interact on a daily basis. The lounge will provide flexible space for approximately 40 students in soft seating and table seating areas. Small group collaboration spaces will provide places for groups to meet, study, and build community.

The makerspace/ open work area is dedicated for American Indian students' use and provides a home for their ongoing projects. This space, sized for up to 16 students, opens out to an exterior patio to accommodate larger projects and promote visibility of American Indian culture and traditions on campus. The makerspace will support guest artists and craftsmen passing down indigenous craft and knowledge to younger generations of American Indians. A portion of the makerspace area will integrate a flexible computer lab to support and accommodate digital projects and general homework needs.

Community Kitchen and Dining

The Community Kitchen and Community Dining areas will serve as a focal point of the building. The kitchen will be available for use by students that are in the facility, as well as serving as a catering kitchen for functions in the building and a teaching kitchen for traditional cooking.

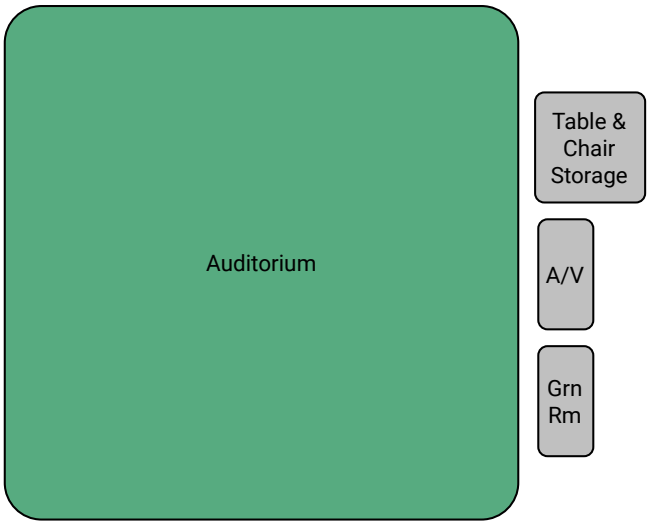
The dining area will accommodate up to 50 people in a variety of table seating configurations. Adjacency between these areas and the Speaking Hall will allow them to open and be used simultaneously for large functions. These

DIAGRAM:
Program Areas

COMMUNITY GATHERING AREAS

5,100 SF

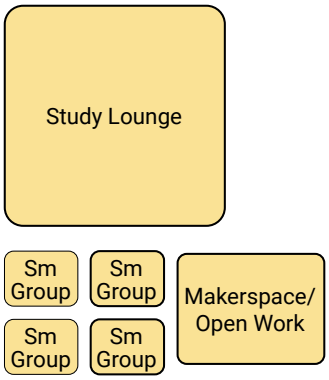
Speaking Hall



AMERICAN INDIAN STUDENT CENTER

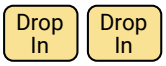
3,590 SF

Learning Commons



Dining Area

Flexible Meeting Space



EXHIBITION AREAS

1,000 SF

Lucy Covington Life & Legacy Gallery

spaces will also open to an outdoor courtyard designed to provide visual privacy.

Flexible Meeting Space
Two flexible meeting rooms will accommodate student functions including private and group study, drop-in counseling, and Temporary Assistance for Needy Families (TANF) counseling.

EXHIBITION AREAS

Lucy Covington Life and Legacy Gallery
Part of Lucy Covington's essence was her warmth and welcoming persona, which will be conveyed in the exhibit gallery / entry lobby, providing an opportunity to tell the story of her achievements and capture her warmth for everyone who enters the building. The Lucy Covington Life and Legacy Gallery will empower American Indians visiting and using the building and educate non-Native students and visitors about the history and importance of Lucy Covington's work and the history of regional tribes. This program area sets the tone for the building as a teaching tool.

Displays of local and regional tribal leaders can also be dispersed throughout the building, showcasing the diversity of tribal histories and styles. Various displays should be curated to teach through storytelling, such as using stills in combination with narration, analog displays open to visitors' comments, interactive storytelling.

Design and displays should consider the use of natural earth elements- circles, feathers, water, animals, geometric shapes, pictographs, earth tones etc. An iconic/symbolic element such as the Eagle Feather could be an interactive feature that accommodates self-reflection and personal storytelling. Losing Eagle Feather represents losing land, which embodies the essence of Lucy Covington's political fight and work.

TABLE:
Building Occupancy Summary by Function

SPACE TYPE	NSF	Total OCC	FEPG Category
COMMUNITY GATHERING AREAS			
Speaking Hall			
Auditorium	4,500	300	600
A/V Support	150	1	700
Green Room	150	5	700
Table and Chairs Storage	300	1	700
Subtotal: Community Gathering Areas	***5,100***	***307***	
AMERICAN INDIAN STUDENT CENTER			
Learning Commons			
Study Lounge	1,000	40	400
Small Group Collaboration	400	4	400
Makerspace/Open Work Area	400	16	400
Dining Area			
Community Kitchen	300	1	400
Community Dining Area	1,250	50	400
Flexible Meeting Space			
Drop-in Advising	240	83	400
Subtotal: American Indian Student Center	***3,590***	***194***	
EXHIBITION AREAS			
Lucy Covington Life & Legacy Gallery			
Exhibit Gallery / Entry Reception	1,000	40	600
Subtotal: Exhibition Areas	***1,000***	***40***	
Total Assignable Areas	***9,690***		
Total Unassignable Areas	***5,310***		700
Total Building Area	**15,000**	**541**	***occupants***

A.2 OCCUPANCY

The Preferred Alternative provides space for 541 total occupants in the building, including 347 occupants in community gathering areas and 194 occupants in the American Indian Student Center.

The table above identifies occupancy counts for each space type and building area.

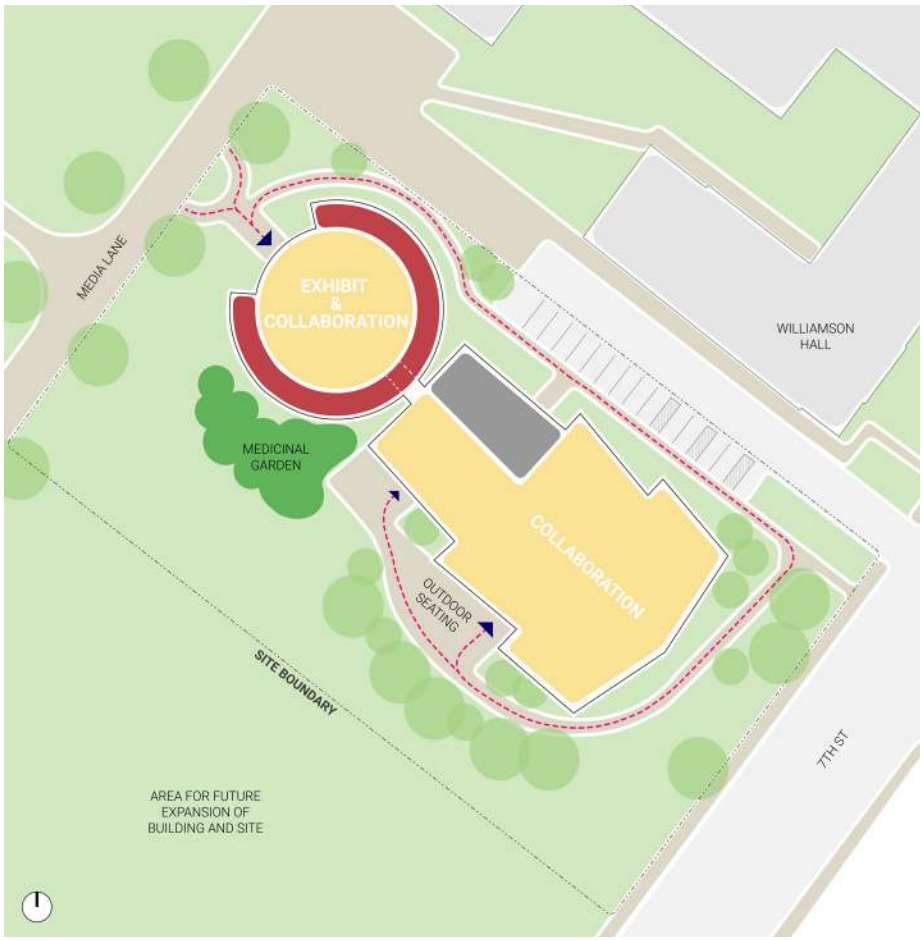
CONCEPTUAL PLAN DIAGRAM:
Preferred Alternative

A.3 CONCEPTUAL BUILDING CONFIGURATION

The following description summarizes the conceptual thinking regarding building design and configuration but does not represent a final design for the building. This information is used as the basis of the predesign cost estimate and to highlight potential opportunities and challenges of the project. It is anticipated that the design team will develop the final building design in alignment with project goals, program, and budget once funding is approved.

The building form is intended to be a tribute to the tradition and culture of the Indigenous people inhabiting the Plateau. The cultural influence on the design concept in this Predesign study was a Seasonal Rounds. In practice, the weather pattern changes are significant in the Plateau Region and are indicators of the natural resources and activities change throughout the year. It is envisioned that the activities, performances and exhibits that will be held within the gallery space will reinforce this concept of seasonal change. The soft radius of this Seasonal Rounds inspired shape also defines a unique building entry on campus. The adjacent volume to the round drew inspiration from a longhouse and be configured to host community and cultural gatherings.

The Lucy Covington Leadership house is envisioned to provide a home away from home to American Indian students, who often must commute great distances from their reservations to attend EWU. It would be home for American Indian students to feel safe for their self-exploration and self-understanding of their values, identities, cultural heritages.



BUILDING CONFIGURATION

The Preferred Alternative concept for the Lucy Covington Leadership House is a 15,000-square-foot, one-story building. The main building entry is located off the major pedestrian thoroughfare.

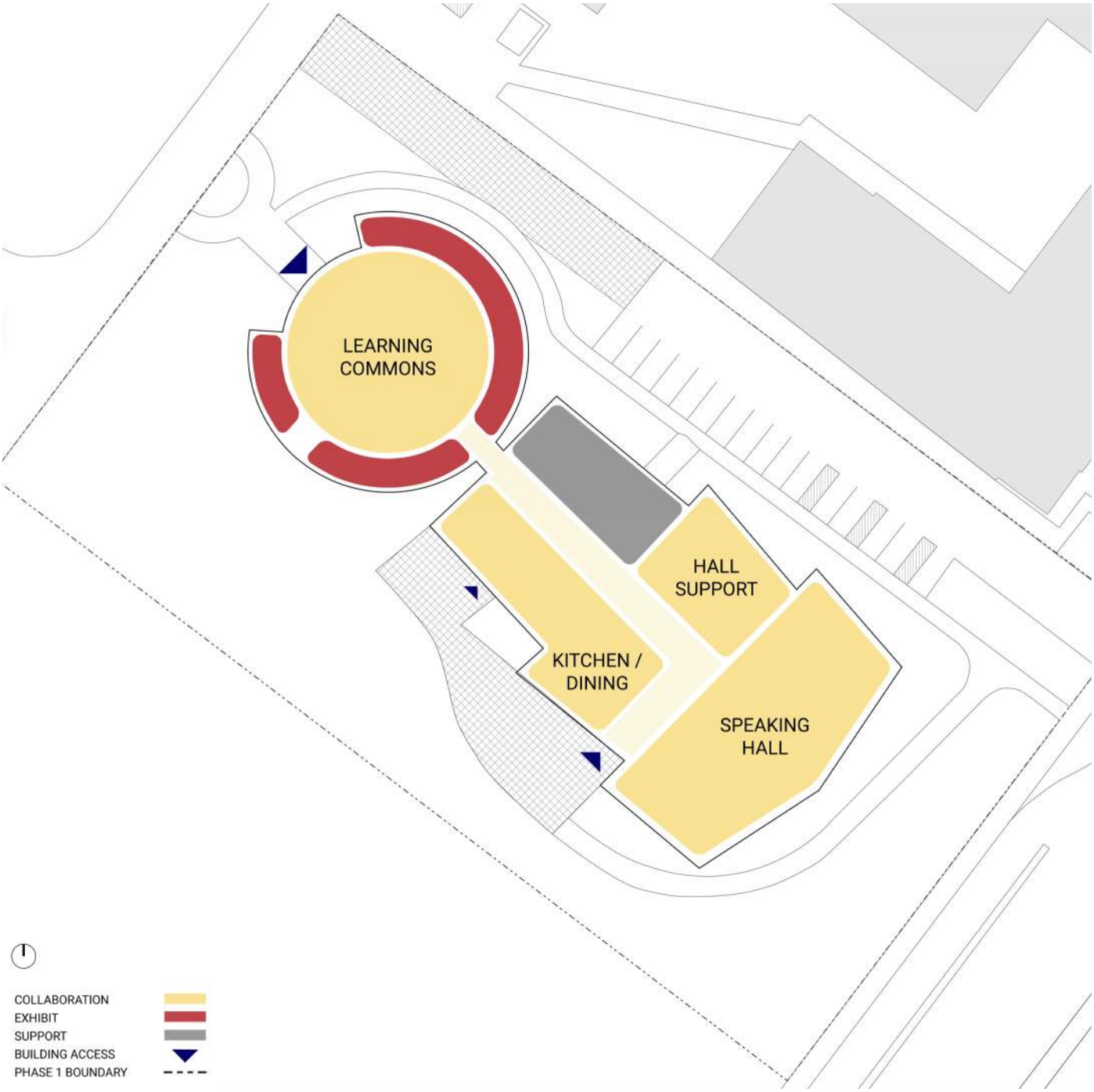
Through the vestibule, students will be welcomed into the Learning Commons, a circular lounge and student support area. This area is designed for group gatherings and collaborative activities, but also includes contemplative spots that provide areas for focused study and respite. It is surrounded by an exhibit area that will showcase Lucy Covington's life and tribal cultures.

The Learning Commons' double-height volume will integrate a skylight that will not only enhance natural light, but also provide a visual link between the sky, the occupants, and the earth, connecting building users to the natural environment.

From here, a longhouse-inspired volume can be accessed, which will be used for more formal gathering. This area contains the Speaker Hall at the south end, as well as centrally-located community kitchen and dining areas, a makerspace, and the main service core, including restrooms and building system areas.

The longhouse is situated between the more public access road, facing Martin and Williamson Hall, and the private courtyard area. The south and southwest edges of the site will use land sculpting to create earthen berms. These will provide screening and casual places to sit during events, as the dining area and Speaking Hall will open onto these areas and create a more seamless indoor/outdoor experience.

CONCEPTUAL FLOOR PLAN DIAGRAM:
Level 1



The layering of types and sizes of exterior gathering areas is intentional so that the building's most private space is an area set aside for a self-constructed traditional sweat lodge.

PROGRAM CONFIGURATION

The floor plan of the building is anticipated to contain a vibrant mix of program areas. Spaces are organized from most public to those serving more private functions. Starting from exhibit and study lounge areas, followed by meeting and maker spaces, to communal dining and speaking hall.

The circular exhibit space will not only be utilized for exhibition, but also for sharing indigenous culture through storytelling, performance art, and film. The nature of circular space diminishes the hierarchy and lends itself to communal activity and building strong connections. The informal seating and gathering areas, along with the dedicated meeting rooms, are encouraged to be visible from the main campus thoroughfare, while also activating the interior of the building.

IMAGE:
Existing American Indian Education Center, EWU Campus

A.4 SPACE NEEDS ASSESSMENT

PROGRAM DEVELOPMENT PROCESS

The Steering Committee provided a preliminary guideline program that was used as a starting point for predesign. Further program development was derived from an analysis of building users' needs, overlaid with the preliminary program. Information was gathered through visioning sessions with the Steering Committee, American Indian Studies program faculty, and Native American Student Association (NASA).

The design team also utilized historic program information from similar projects to establish physical facility square footage requirements. An initial "ideal" numeric program evolved from this process, outlining the desired spaces. This initial program was refined to align with the allowable program size accommodated by the allocated budget, through efficient use of space and implementation of shared usage wherever possible, while still providing necessary program functions.

Program reduction strategies included combining meeting areas, incorporating computer stations within the makerspace rather than in a separate room, and a general increase in the efficiency of the building. Desired instructional programs were not included in the Preferred Alternative program, due to lack of staffing for these programs. These instructional programs were included as part of a future expansion of the building.

The resulting building program, at 15,000 GSF, aligns with a lower budget and achieves project goals.

IDENTIFIED NEEDS ADDRESSED IN THE PREFERRED ALTERNATIVE

Existing campus facilities do not provide the space that is needed to support the Lucy Covington Initiative and address underrepresentation and declining enrollment of American Indian students in higher education.

EWU's American Indian Education Center, shown above, houses instructional space dedicated to the American Indian Studies program and includes one room that is currently used as a student study area. While this building is significant to EWU alumni of American Indian heritage, it does not meet current student needs, support the goals of the Lucy Covington Initiative, or address underrepresentation and declining enrollment of American Indian students in higher education as follows:

> The limited amount of space does not accommodate the current number of American Indian students or provide needed functions.

> The existing building is not centrally located on campus, further emphasizing the lack of visibility for American Indian students.

> The building is not reflective of indigenous culture, in its configuration or materials, as it was originally designed as a church.

> The building has very limited accessibility. The main accessible entry is on the back side of the building, creating an inequitable experience to students, faculty, or visitors with mobility impairments.

> The interior space students currently use the most is located in the basement and lacks natural light, impacting student wellbeing.

There is no existing space dedicated to celebrations of indigenous cultures and traditions on campus. EWU's annual Spirit of Eagle Powwow is currently held in the campus fieldhouse, which limits food preparation and is not representative of American Indian identity and culture.

The new Lucy Covington Leadership House will provide intentional and dedicated areas directly supporting the Lucy Covington Initiative and addressing the issues of underrepresentation and declining enrollment. Program areas that will support functions not currently provided on campus include:

> Speaking Hall

> Learning Commons

> Dining area with community kitchen

> Makerspace / open work area

> Flexible meeting space

> Lucy Covington life & legacy gallery

TABLES:
Numeric Space Program Summary (Top)
Program Comparison to Guidelines (Bottom)

NUMERIC SPACE PROGRAM

The proposed program for Lucy Covington Leadership House, summarized above, allocates 15,000 GSF for the building. This accommodates 9,690 square feet of assignable area, including Community Gathering Areas, Exhibition Areas, and an American Indian Student Center.

The program has a 65 percent efficiency ratio, indicating that 65 percent of the total building area is allocated for assignable program functions and 35 percent is allocated for building services, building systems, circulation, and walls.

A detailed numeric space program for Lucy Covington Leadership House is included in Appendix D.

PROGRAM COMPARISON TO GUIDELINES

Proposed program areas for the Lucy Covington Leadership House align with, or are more efficient than the State guidelines, as shown in the bottom table.

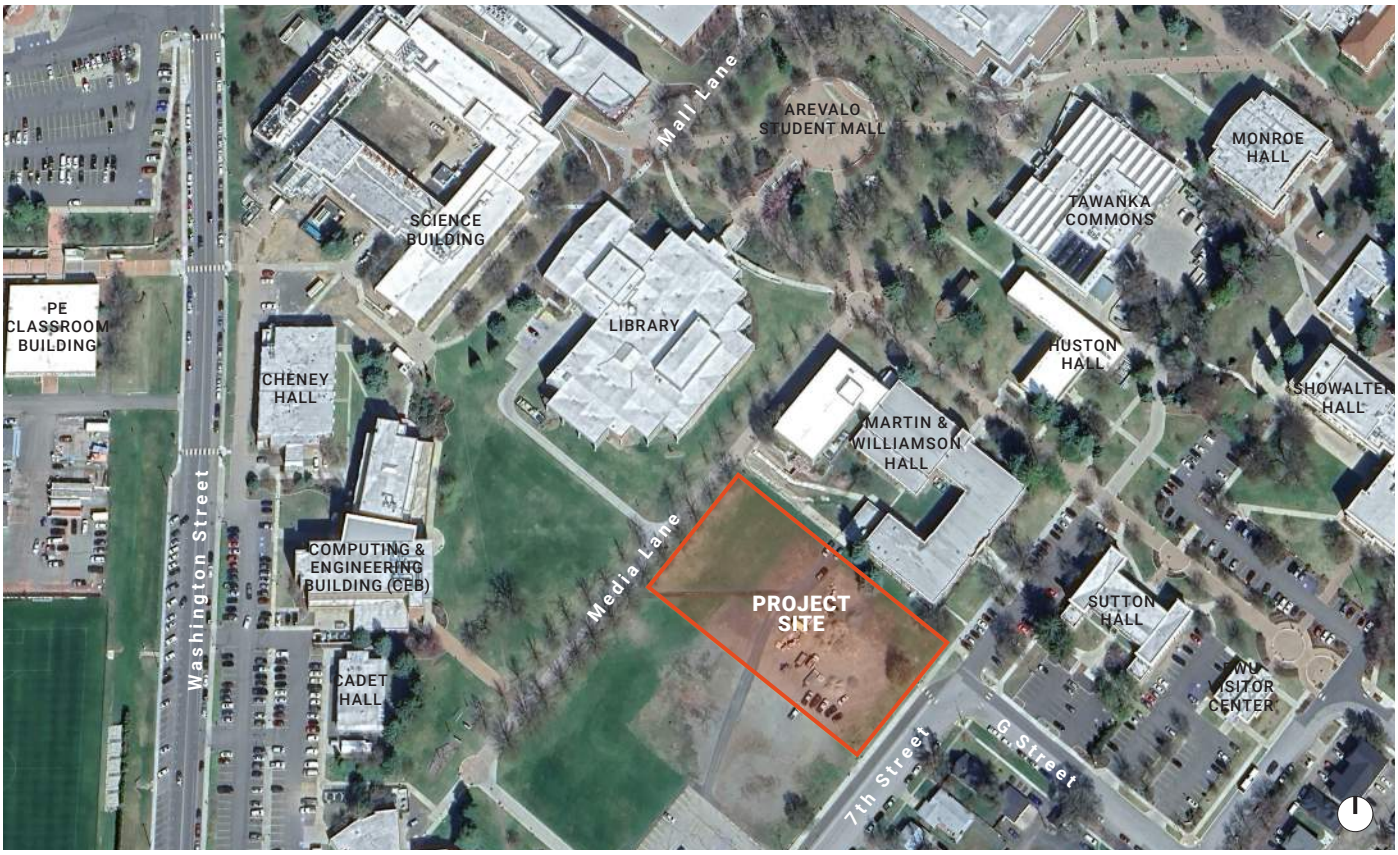
Other required facilities in the State Facilities Workplace Strategies and Space Use Guidelines provided in the proposed program include a Wellness room, required for facilities over 5,000 GSF.

PREFERRED ALTERNATIVE

PROGRAM AREA		NSF	% of NSF
COMMUNITY GATHERING AREAS			
Speaking Hall		5,100	*52.6%*
AMERICAN INDIAN STUDENT CENTER			
Learning Commons		1,800	*18.6%*
Dining Area		1,550	*16.0%*
Flexible Meeting Space		240	*2.5%*
EXHIBITION AREAS			
Lucy Covington Life & Legacy Gallery		1,000	*10.3%*
Total Assignable Square Feet (NASF)		***9,690***	
UNASSIGNABLE AREAS	*% of GSF*		
Building Support	*6.1%*	910	
Building Systems	*8.0%*	1,200	
Circulation / Walls	*21.3%*	3,200	
Subtotal - Unassignable Areas	*35.4%*	*5,310*	
Total Building Area		**15,000**	
Building Efficiency		**65%**	

Program Area	FEPG Guidelines	Space Use Guidelines	Project Program
Offices	**120-175 SF each**	**100-150 SF each**	**120-150 SF each**
Instructional Areas	**16-20 SF/station**	**n/a**	**30 SF/person**
Conference Rooms	**20 SF/person**	**15 SF/person**	**20 SF/person**
Collaboration Space	**25-35 SF/person**	**20 SF/person**	**20 SF/person**
Assembly Space	**15-16 SF/person**	**n/a**	**15 SF/person**

IMAGE:
Aerial View of Project Site and Surrounding Area, EWU Campus



B. SITE ANALYSIS

B.1 SITE STUDIES THAT ARE COMPLETED OR UNDERWAY

Eastern Washington University will be updating its Campus Master Plan in the Fall of 2024 and targeting its completion in the Fall of 2025. As EWU moves forward with updating their Campus Master Plan, future projects such as the Lucy Covington Leadership House will need to align with the revised vision and objectives outlined in that plan.

B.2 PROJECT SITE INFORMATION

LOCATION

The site selected for this Predesign study is located at the southeast edge of the EWU campus in Cheney, Washington. It is the former site of Robert Reid Lab school, which has been demolished and the site cleared in 2015. The site abuts a residential neighborhood on the other side of 7th Street.

To the northwest the site is bounded by Media Lane, a major pedestrian thoroughfare parallel to 7th Street. The large deciduous trees lining Media Lane will contribute to a project's biophilic design, provide shade in the warmer months, and allow for additional visual connectivity to the campus core during fall and winter months. On the northeast edge of the site, the Lucy Covington Leadership House building will sit parallel to Martin and Williamson Hall.

FOOTPRINT, ADJACENCIES, & SITE FEATURES

The proposed building will be a one-story freestanding structure with a footprint of approximately 15,000 square feet. The building will occupy 25 percent of the total site area of 60,000 square feet. The site is relatively flat and covered with sparse grass. The new building will share a new access road with Martin and Williamson Hall, which will be included in the scope of the renovation of that building. Parking on the site is proposed to accommodate about sixteen stalls, including electric charging stalls and accessible parking stalls. It will also provide delivery access to the building.

Circulation

The major pedestrian pathway is along Media Lane, which diagonally connects the campus gateway by Isle Hall and the Art and Computer and Engineering Buildings located at the south end of campus.

Commuters arriving by bus will most commonly enter the campus via Mall Lane from Eagle Station on Elm Street. Many students, faculty, and staff arrive at EWU campus by personal vehicle. In this case, the most common entry point to campus is from Washington Street, but also off 7th Street, or via Study Lane or Quad Lane (which turns into Media Lane, bypassing our site).

Fire and service access are provided along 7th Street, Media Lane, and the new access lane shared with Martin and Williamson Hall.

PREFERRED ALTERNATIVE SITE CONCEPT

During the stakeholder engagement process, this site was deemed as preferred location by the members of the Native American Student Association (NASA) over other considered site locations. The abundant outdoor space would give the building room to breathe and accommodate the many possible outdoor programs and connections that the new Center would offer. Outdoor events and gatherings should be taken into consideration for future development and by the Campus Master Plan. Choosing this prominent location on campus was of a crucial importance for elevating the visibility, presence, and importance of American Indian students and faculty members at EWU.

Based on circulation patterns, the chosen site is optimally located. The building is envisioned not only as a destination but also as a connector between the Art building and the campus core. It is also a short walking distance from the EWU's Visitor Center, Arevalo Campus Mall, and Pence Union Building.

WATER RIGHTS & WATER AVAILABILITY

Eastern Washington University (EWU) provides drinking water from two drilled wells, both of which draw from a groundwater aquifer. Well 1R is located in the Plant Utilities building and can pump up to 450 gallons per minute at a depth of 834 feet. Well 2R produces 900 gallons per minute at a depth of 1145 feet.

Chlorination of the campus water supply began in 2010. Since 2016, water from both wells has been routed through a new chlorine building for treatment before being distributed throughout campus via the tower. To ensure the safety of the tap water, backflow assemblies are installed through the campus to protect the water system. Two Cross Connection Control Specialists and three Backflow Assembly Testers, employed by the university, conduct tests on all assemblies annually and perform any necessary repairs or replacements. A report is submitted to the Department of Health each year.

The water supply meets or exceeds all standards set for quality and safety, and EWU is committed to providing safe, high-quality water. EWU's annual drinking water report can be found at https://inside.ewu.edu/facilities/water/.

STORMWATER REQUIREMENTS

The proposed facility will follow the Stormwater Management Manual for Eastern Washington to meet the requirements for conveyance, flow control, and water quality treatment. It is anticipated that all stormwater will infiltrate on site but rainwater harvesting may be used towards additional LEED points. A small amount of pollution-generating impervious area, a small parking lot with an access road that will be shared with the adjacent Martin and Williamson Hall site, will be conveyed to a bio infiltration swale for water quality treatment. The bio infiltration swale will also be used for collecting the roof runoff from the building. Catch basins and piping will collect the runoff from the building and hard surface and be routed to the bio-infiltration swales.

OWNERSHIP OF THE SITE

The Lucy Covington Leadership House will be located on the EWU campus, on land that is owned by Eastern Washington University. There are no acquisition issues related to this project.

PROPERTY SETBACK & EASEMENT REQUIREMENTS

The project site is located in in Public (P) Zone which is applicable to the entire EWU campus. It is totally within the existing campus, with frontage on 7th Street to the southeast. The project will adhere to the setbacks specified by the City of Cheney and the building separation requirements of the current building code.

NEIGHBORHOOD ISSUES

Establishing and maintaining effective communication with the campus neighbors, beginning in design, and continuing through construction, will be important given the proximity of the proposed project location adjacent to the campus boundary. As part of its construction best practices, EWU will implement communications plans and protocols to inform neighbors of construction activities and manage any communications, concerns, or complaints that may arise during construction.

UTILITY EXTENSION OR RELOCATION ISSUES

The existing site currently has water and sewer service stubbed to the site as there was an existing building in the northeast corner of the lot that has been removed. The old water and sewer lines that went to an existing building will need to be removed / abandoned. There are existing sanitary sewer lines that run along the northern and eastern portion of the site as well as a water line along the eastern portion, which will be used as the connection point for the proposed building.

It is assumed the building will have fire sprinklers and will need a fire service line as well as the domestic water service line. An irrigation system will be connected to the same water line. Locations for backflow preventers, water meters and fire hydrants will be determined during building and site design. There also is an existing utility tunnel under the existing concrete sidewalk as well as abandoned cable lines near the site.

Existing onsite power: The proposed project site is currently serviced by Avista through underground electrical. The campus Electrical Distribution Upgrades Ph. 2, Termination Pt. #11A above grade, brings a high voltage switch location directly to the proposed Lucy Covington Leadership House site. A new feeder from the existing electrical distribution upgrade Ph. 2 at termination Pt. #11A will be installed to serve the new building. Transformer location to be coordinated during the design phase.

The utility will coordinate burial of remaining electrical overhead services and/or relocation of underground electrical. Avista and Eastern Washington Campus Officials will verify acceptable design.

POTENTIAL ENVIRONMENTAL IMPACTS

There are no known existing environmental issues on the preferred site that need to be mitigated.

PARKING AND ACCESS ISSUES

The campus is well served by an existing vehicular circulation network. No significant roadway or signalization improvements are anticipated on- or off-campus, given no increase in FTE capacity generated by the Lucy Covington Leadership House. Parking quantities are managed on a campus-wide basis based on periodic analysis of parking demand and use patterns.

Approximately sixteen visitors, delivery, and accessible parking stalls will be accommodated within the access road the building will share with Martin and Williamson Hall.

CONSTRUCTION IMPACT

Eastern Washington University has demonstrated success at managing complex construction projects in its campus core and mitigating diverse impacts to surrounding areas with multiple construction projects. Establishing adequate laydown areas, coordinating deliveries, traffic control, and contractor parking, and managing construction noise impacts, all with an emphasis on ensuring the safety of the campus community and construction workers, as well as surrounding neighbors are proven keys to success.

The following surrounding uses will be impacted during construction:

- Adjacent area between the site and Arts Building will be used as lay-down area during construction
- Utility installation/relocation along Media Lane and site lighting updates will have an impact on pedestrian use of Media Lane.
- Mature trees along Media Lane will need to be protected during construction.
- A new access road from 7th Street which will edge the project and Martin and Williamson Hall will be impacted, but fire access to JFK Library will be planned for.
- The Drop-off area along 7th Street will be utilized by construction vehicles.

C. CONSISTENCY WITH APPLICABLE LONG-TERM PLANS

Eastern Washington University will be updating its Comprehensive Campus Master Plan (CCMP) in the Fall of 2024 and targeting completion in the Fall of 2025. As EWU moves forward with updating its CCMP, future projects such as the Lucy Covington Leadership House will need to align with the revised vision and objectives outlined in that plan.

D. CONSISTENCY WITH OTHER LAWS & REGULATIONS

D.1 HIGH-PERFORMANCE PUBLIC BUILDINGS (CHAPTER 39.35D RCW)

EWU implements environmental stewardship and sustainability principles in the development and management of their buildings and capital projects. Sustainable design includes efficient management of energy and water resources, management of materials and waste, protection of health and indoor environmental quality, protection of the environment and reinforcement of natural systems, and an integrated design approach. Sustainability encompasses design, construction, operations, and demolition practices, as well as environmental, economic, and social impact.

State-funded higher education projects will be designed, constructed, and certified to at least the Leadership in Energy and Environmental Design (LEED) Silver standard under the v4.1 New Construction pathway. Lucy Covington Leadership House will achieve at least LEED Silver certification but has the goal of achieving LEED Gold. By designing to the LEED Silver or Gold standard, the College will reduce lifecycle costs (as required by OFM), thereby increasing both environmental and financial sustainability.

In addition to lowering operating costs, high-performance buildings as described in RCW 39.35D should also make occupants more productive, reduce worker absenteeism, and bolster well-being. The use of decoupled ventilation and conditioning strategies with a dedicated outside air system (DOAS), also known as energy recovery ventilators (ERV), can create healthier buildings while reducing energy use.

These systems operate with the core intent of ensuring a well-ventilated environment for student learning success. Studies have demonstrated that good ventilation is key for occupants' ability to focus and maintain concentration, while also reducing air borne pathogens to keep spaces hygienic and healthy. Both MERV 15 and carbon filtration should be employed to ensure high indoor air quality, even during forest fire seasons.

A detailed summary of the sustainability charrette that included the predesign team and EWU and outlined major sustainability strategies is included in the section 07 Supplemental Appendices.

D.2 STATE EFFICIENCY & ENVIRONMENTAL PERFORMANCE REQUIREMENTS (EXECUTIVE ORDER 20-01)

Washington State's Executive Order 20-01 states that all newly constructed state-owned (including lease-purchase) buildings shall be designed to be zero energy or zero energy capable and include consideration of net-embodied carbon.

EWU has expressed strong interest in net zero renewable energy. Enhanced goals to achieve net zero are to be further assessed during the design phase, taking into account cost effectiveness, space constraints and environmental impact. Cost effective is defined as a simple payback of less than five years or a life cycle cost less than the baseline. A life cycle cost analysis (first cost, energy, operations, maintenance, replacement, productivity), is not necessary for measures with simple paybacks less than five years.

Electrification of the building is a key strategy to achieving net zero energy and operational carbon emissions. As the electrical grid adopts greater percentages of renewable energy sources (wind, solar, hydro, etc.), a path to decarbonize the built environment is electrification. The 2021 Washington Energy Code will require electrification for buildings of this size and occupancy for HVAC systems and partial electrification of building domestic hot water. This will be accomplished for this project through heat pump technology via a centrally located ground source.

New buildings larger than 10,000 square feet of gross conditioned floor area, will include a renewable energy generation system consisting of not less than 0.5 W/ft2 or 1.7 Btu/ft2 multiplied by the sum of the gross conditioned floor area. Washington State Energy Code 2021 edition, 51-11c WAC section C411.

Based on a 15,000 GSF footprint, the solar design will need to generate 7.5kW of renewable energy. It can be anticipated to be a minimum of $93,000.00

D.3 STATE ENERGY PERFORMANCE STANDARDS FOR CLEAN BUILDINGS (RCW 19.27A.210)

The Lucy Covington Leadership House building project comprises less than 50,000 gross square feet of construction and is thus not a 'Covered Commercial Building' nor bound by the requirements of RCW 19.27A.210.

D.4 ELECTRIC VEHICLE INFRASTRUCTURE (RCW 12.27.540)

Parking quantities, including number and location of electric vehicle charging stations, are managed on a campus-wide basis based on periodic analysis of parking demand and use patterns.

No additional parking will be required as part of the Lucy Covington Leadership House project, however both traffic and parking impacts will be confirmed during design process including an assessment of compliance with RCW 19.27.540.

Per RCW 19.28, where new parking is provided at the building, electric vehicle charging stations and infrastructure shall be provided in compliance with WAC 51-50-0429. The electric vehicle charging stations and infrastructure shall meet Level 2 charging capacity requirements with each charger rated for 40 amps at 208V, 1PH. Charger locations will be coordinated to not conflict with campus snow removal operations.

D.5 GREENHOUSE GAS EMISSIONS REDUCTION POLICY (RCW 70.235.070)

EWU will reduce greenhouse gas emissions to meet and exceed the goals passed by the Washington State Legislature in April of 2009, requiring Washington State agencies reduce emissions 15 percent below 2005 levels by 2020, and 36 percent below 2005 levels by 2035. Based on their Climate Action Plan, EWU is targeting 45 percent reduction by 2030, 70 percent reduction by 2040 and 90 percent reduction by 2050. In addition, EWU is currently under contract with an engineering consulting firm to conduct a 15-year decarbonization plan that will provide a pathway(s) to transition the campus away from the use of fossil fuels for building heating, compliance with the Clean Buildings Performance Standard, and guide the new campus masterplan to prioritize sustainability in the built environment.

To achieve the GHG targets, EWU must accelerate increases in energy efficiency and reductions in GHG emissions. The nearer-term 2030 reduction target is likely achievable through available technologies and practices. Strategies for the 2030 target include:

> Invest in infrastructure improvements to reduce energy use and GHG emissions

> Support facilities personnel in the sustainable management and maintenance of campus

> Use existing space efficiently

- Avoid increasing total campus square footage
- Carbon sequestration through the Prairie Restoration Project and management of the campus landscape
- Install electric vehicle infrastructure for both university operations and public use
- Electrify vehicle fleet and maintenance equipment
- Establish a University Sustainability Committee to build stakeholder engagement and help guide EWU towards sustainable practices

As EWU looks to 2040 and 2050, the reduction targets become more challenging to plan for strategically. To achieve a 70 percent reduction in GHG, and ultimately carbon neutrality, EWU may need to utilize technologies that are not yet available at appropriate scales. These technologies may be those that are currently cost prohibitive, unproven at scale, or still in the early stages of development.

EWU can begin to anticipate potential solutions and review opportunities, but have not set a specific pathway. Therefore, current planning for 2040 and 2050 is to assess and evaluate all carbon reduction options and find sustainable solutions. Strategies for these longer-range targets include:

- Work with EWU staff, faculty, and students to propose, research, and evaluate GHG reduction strategies
- Collaborate with industry experts to identify opportunities to transition EWU off of natural gas
- Investigate the role of carbon capture/sequestration from point source GHG emissions
- Electrify where possible
- Track and review emerging technologies/practices to reduce GHG emissions.
- Remain open to the dynamic and evolving changes in sustainable practices and technologies to achieve the long-term carbon reduction goals

EWU's Greenhouse Gas Emission Reduction Plan incorporates multiple strategies for reducing the campus's carbon footprint. Lucy Covington Leadership House will be designed in accordance with this plan's principles and will incorporate at least eleven of the best practices to reduce greenhouse gas emissions.

When considering greenhouse gas emissions, it is also important to look at the whole life cycle carbon of buildings. This includes not only operational energy, but also refrigerant emissions, emissions from material production, and end-of-life impacts. Reducing overall emissions means minimizing operational energy use while also finding carbon sinks for projects, such as biogenic carbon from sustainably harvested wood, site landscaping, biochar, or other materials.

The use of mass timber products, such as cross-laminated timber (CLT), sequesters large amounts of carbon. Extensive research into mass timber has demonstrated that this construction type can not only reduce embodied carbon emissions by some 80 percent compared to other construction types, but it is also fast to build, fire resistive, supports local economies, and creates a healthy interior environment.

D.6 DAHP AND TRIBAL NOTIFICATION LETTERS

As required by Executive Order 05-05, the University requested review of this project by the Department of Archaeology and Historic Preservation (DAPH) and local tribes.

The tribes that Eastern Washington University contacted fall within the federally recognized tribes of Washington and Idaho, as well as the Washington State Tribal Reservations and Draft Treaty Ceded Areas. Three tribes were contacted: the Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians, and the Coeur d'Alene Tribe. Correspondence and status of communications with DAHP and local tribes are included in Appendix C.

The University will comply with requirements of the Governor's Executive Order and consult with DAHP to review the project as required for state-funded projects.

The Lucy Covington Leadership House is not anticipated to affect cultural or historic resources; however, EWU will continue to coordinate with DAHP through design to avoid or mitigate potential effects.

D.7 AMERICANS WITH DISABILITIES ACT IMPLEMENTATION (EXECUTIVE ORDER 96-04)

The proposed project will comply with International Code Council (ICC) ANSI A117.1-2009 with Washington State Amendments - WAC 51-50. In addition to the ADA accessibility codes, the proposed facility will comply with the Revised Code of Washington (RCW) and Washington administrative code (WAC) requirements for barrier-free facilities, and the accessibility provisions of the Washington State amendments to the International Building Code.

D.8 GROWTH MANAGEMENT ACT COMPLIANCE (RCW 36.70A)

The Growth Strategies legislation of 1990 requires state agencies to comply with local land use regulations adopted pursuant to the Growth Management Act, which EWU acknowledges through the development of 2014 Campus Master Plan (due to be updated in 2024-2025. Environmental regulations, including the Growth Management Act and local, state, and federal laws and regulations (such as shoreline and wetlands), will be met. The project will comply with all planning regulations as required by RCW Chapter 36.70A.

D.9 INFORMATION REQUIRED BY RCW 43.88.0301(1)

The Lucy Covington Leadership House project is consistent with the EWU Campus Master Plan. No changes are proposed to the Campus Master Plan as a result of this project. This plan is consistent with City of Cheney zoning and Growth Management Act regulations.

D.10 OTHER CODES OR REGULATIONS

All construction will comply with the applicable version of the International Building Code that is adopted by the State of Washington and the City of Cheney at the time of permit intake, as well as its reference documentation:

> International Building Code (IBC) and Amendments – Chapter 51-50 WAC
> International Mechanical Code (MBC) and Amendments – Chapter 51-52 WAC
> International Fire Code (IFC) and Amendments – Chapter 51-54 WAC
> Uniform Plumbing Code (UPC) and Amendments – Chapters 51-56, 51-57 WAC
> Washington State Energy Code (WSEC)
> National Electric Code (NEC)
> Washington State Electrical - Chapter 296-46B WAC
> Energy Codes

The 2021 Washington Energy Code or subsequently adopted version will govern the design of the new Lucy Covington Leadership House Building. RCW 39.35 requires a life cycle cost analysis of energy costs be conducted when designing a facility of this size, including analysis of building envelope, HVAC, power, and lighting.

E. PROBLEMS THAT REQUIRE FURTHER STUDY

There are no known problems that require further study.

F. COMPONENTS THAT EXCEED EXISTING CODE

There are no known proposed components that exceed existing code.

G. PLANNED TECHNOLOGY INFRASTRUCTURE INVESTMENTS

The Eastern Washington University is exploring a New Geothermal Heating Plant, in addition to existing Physical Chilled Water Plant. EWU has invested heavily in this chilled water plant over the years, and it has the available capacity to serve this new Lucy Covington Leadership House building. In addition, there are pipe mains extremely close to the proposed building footprint. The project team will make use of this available source. In addition, the goal is to explore utilizing approximate 120 degree heating water for the new geothermal heating plant to reduce carbon footprint and reduce fossil fuel load of current campus steam system. New direct bury piping or tunnel construction will be required from central geothermal plant to proposed mechanical room location.

H. PLANNED SECURITY MEASURES

The Preferred Alternative includes the following planned security measures:

> Door hardware shall have access controls with remote lockdown capabilities.
> A blue phone is recommended in the near vicinity of the building. Blue phones on campus are used for mass notification and include infrastructure for video surveillance.
> The Fire Alarm system will also have a mass notification system.

Building access and security will be managed in a similar manner as existing adjacent academic buildings

I. COMMISSIONING

Systems commissioning, per Washington State requirements and EWU standards, will be incorporated into the project for all applicable systems. Enhanced Commissioning, requiring establishment of commissioning requirements early in the design phase, is recommended to ensure increased effectiveness of the process, and would earn LEED credit. Refer to Appendix D Electrical scope for more detailed information on Commissioning.

J. FUTURE PHASES OR FACILITIES

Section 03A has a detailed review of the future expansion alternative. This expansion would add approximately 13,000 gross square feet to the proposed design. It would include additional office and instructional program, allowing potential expansion and/ or relocation of the American Indian Studies program.

K. PROJECT MANAGEMENT & DELIVERY METHODS

K.1 PROJECT DELIVERY METHODS CONSIDERED

Eastern Washington University intends to employ the traditional Design/Bid/Build approach for this project. Previous major capital projects at EWU have been successfully executed within or under the allocated budget using this method. Its cost-effectiveness aligns well with the regional context and the construction administration capabilities available to EWU. Currently, there is no compelling reason for EWU to seek approval for an alternative delivery method under RCW 39.10.

K.2 PROJECT MANAGEMENT WITHIN THE AGENCY

Eastern Washington University's Construction and Planning Division will manage all aspects of the project from programming and initial budgeting of the proposed project to the initial selection of the project architect/engineer(A/E) consultant design team and throughout the subsequent design, bidding, construction, commissioning, and warranty phases.

The Construction and Planning Division will oversee the required contractual administration for the project A/E consultants and public works contractors. The Construction and Planning team is responsible for working closely with the university's administration, the design team, and the contractors to ensure the project is delivered on time and within budget.

TABLE:
Proposed Project Schedule

Project Schedule: Preferred Alternative			
PHASE	DURATION	START DATE	END DATE
Design / Construction Funding		**July 2025**	
Design	**12 mos.**	**November 2026**	**November 2027**
Construction	**12 mos.**	**November 2027**	**November 2028**
Move-In / FF&E	**3 mos.**	**November 2028**	**February 2029**
Occupancy		**February 2029**	

L. PROJECT SCHEDULE

L.1 HIGH-LEVEL MILESTONE PROJECT SCHEDULE

The anticipated project schedule for the Preferred Alternative is shown above, and assumes design funding is awarded in the 2025-27 Capital Budget and construction funding is awarded in the 2027-29 Capital Budget.

Design is slated to start in November 2026, with construction beginning in November 2027 and reaching substantial completion by November 2028. Building occupancy is anticipated in February 2029.

L.2 VALUE ENGINEERING & CONSTRUCTABILITY REVIEW

Value engineering analysis and constructibility review will be integrated into the design process. Time for this effort has been factored into the proposed project schedule.

L.3 SCHEDULE RISK FACTORS

There are no known unusual or extraordinary factors anticipated to pose a risk to the project schedule. During the design and construction phases, the project team will need to manage typical factors and processes that have the potential to impact schedule, such as entitlements and jurisdictional review time.

L.4 PERMITTING, ORDINANCE, OR NEIGHBORHOOD ISSUES

Buildings on EWU's campus are subject to the governing codes of the City of Cheney. During the design process, the University and design team will meet with City officials as required to ensure the project conforms with all City requirements.

L.5 JURISDICTIONAL PROCESS & COMMUNITY INVOLVEMENT

Regular engagement with the City of Cheney, to understand permitting requirements and identify any other ordinances that could impact schedule, will be arranged. The involvement of the stakeholders, such as a Steering Committee, American Indian Studies program faculty members, and Native American Student Association (NASA) members will continue throughout the design.

Section 05

PROJECT BUDGET ANALYSIS FOR PREFERRED ALTERNATIVE

A. Cost Estimate

B. Proposed Funding

C. Facility Operations and Maintenance

D. Furniture, Fixtures and Equipment

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SECTION 05

PROJECT BUDGET ANALYSIS FOR PREFERRED ALTERNATIVE

A. COST ESTIMATE

A construction cost estimate based on the Maximum Allowable Construction Cost (MACC) cost estimate was prepared by the consultant. The State of Washington's C-100 (2024) cost estimating model was used as the basis for this estimate, applying consultant and project management fees, contingencies, and escalation.

The Preferred Alternative project budget is $20,739,000, escalated based on the proposed project schedule. A construction cost summary is included on the following pages.

The State of Washington Form C-100 summary, which includes project and construction costs, is included later in this section. Additional cost detail is included in Appendix B, Detailed Cost Model.

A.1 MAJOR ASSUMPTIONS

The following assumptions were used as the basis for the construction cost estimate indicated below.

- Design, Bid, Build delivery method is assumed.
- Assumes a Q4, 2027 start and a 12-month schedule for the Preferred Alternative.
- Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

TABLE:
Construction Cost Estimate:
New Construction

A.2 COST ESTIMATE SUMMARY

A summary of the construction cost estimate for the Preferred Alternative is shown below and on the following page. A detailed cost estimate is included in Appendix B.

ESTIMATED COSTS SUMMARY

June 4, 2024

Item	Description	QTY	UOM	$ / UOM	Cost
1	BUILDING - PREFERRED OPTION	15,000	BGSF	$ 649.89	$ 9,748,406
2	SITEWORK	60,000	SGA	$ 29.77	$ 1,786,495
3	General Conditions & Support Services	12	MO	$ 75,000	$ 900,000
Total Estimated Construction Cost (Today's Dollars)					**$ 12,434,902**
4	Escalation to Midpoint (Q2, 2028)	16.00%	on	$ 12,434,902	$ 1,989,584
Total Construction Cost (Escalated)					**$ 14,424,486**

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
G10	Site Preparation	60,000	SGA	$ 3.98	$ 238,960
G20	Site Improvements	60,000	SGA	$ 7.37	$ 441,992
G30	Site Civil / Mech Utilities	60,000	SGA	$ 4.49	$ 269,400
G40	Site Electrical Utilities	60,000	SGA	$ 6.60	$ 396,000
G50	Other Site Construction	60,000	SGA	$ 0.75	$ 45,000
SITEWORK SUBTOTAL					**$ 1,391,352**
	Design Contingency			20.00%	$ 278,270
	Subtotal				$ 1,669,622
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 116,874
	Subtotal				$ 1,786,495
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**60,000**	**SGA**	**$ 29.77**	**$ 1,786,495**

TABLE:
Form C-100 Summary

A.3 FORM C-100

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY
Updated June 2024

Agency	Eastern Washington University
Project Name	Lucy Covington Leadership House
OFM Project Number	40000071

Contact Information	
Name	Kris Jeske, Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske@ewu.edu

Statistics			
Gross Square Feet	15,000	MACC per Gross Square Foot	$829
Usable Square Feet	9,690	Escalated MACC per Gross Square Foot	$939
Alt Gross Unit of Measure			
Space Efficiency	64.6%	A/E Fee Class	B
Construction Type	Auditorium without stag	A/E Fee Percentage	8.23%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	5%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	January-23	Predesign End	June-24
Design Start	November-26	Design End	November-27
Construction Start	November-27	Construction End	November-28
Construction Duration	12 Months		

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Project Cost Summary

Total Project	$18,375,824	Total Project Escalated	$20,739,252
		Rounded Escalated Total	$20,739,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$0**
Next Biennium	**$0**
Out Years	**$20,739,000**

TABLE:
Project Budget

B. PROPOSED FUNDING

B.1 FUNDING SOURCES

The Lucy Covington Leadership House will be a fully State-funded project, with the exception of this Predesign Report.

B.2 DEBT SERVICE FOR ALTERNATIVE FINANCING

EWU is not proposing alternative financing for this project.

Agency / Institution Project Request	
Design / Construction Request, 2025-2027 Biennium	$20,739,000
Total Project Request	**$20,739,000**
Pre-Design Report (Non-State Funds)	$300,000
Total Project Funds	**$21,039,000**

TABLES:
Current Capital & Operating Costs
Capital & Operating Costs Over Five Biennia

TABLE 1 Operations	Operating Cost (GSF/YR)
Component:	**FY24**
091 Utilities	$3.77
092 Building Maintenance	$2.65
093 Custodial & Grounds	$3.45
094 Operations & Mgmt. Support	$3.62
Total Annual Cost per GSF	**$13.49**

TABLE 2 Operations	Operating Cost (GSF/YR)	29-31 Biennium		31-33 Biennium		33-35 Biennium		35-37 Biennium		37-39 Biennium	
Component:	**FY29**	**FY29**	**FY30**	**FY31**	**FY32**	**FY33**	**FY34**	**FY35**	**FY36**	**FY37**	**FY38**
091 Utilities	$4.38										
092 Building Maintenance	$3.07										
093 Custodial & Grounds	$4.01										
094 Operations & Mgmt. Support	$4.20										
Total Annual Cost per GSF	**$15.66**	**$234,900**	**$241,947**	**$249,205**	**$256,682**	**$264,382**	**$272,313**	**$280,483**	**$288,897**	**$297,564**	**$306,491**
Building Area (GSF)	15,000										
10-Year Total Cost											**$2,692,865**

C. OPERATIONS & MAINTENANCE REQUIREMENTS

C.1 OPERATING BUDGET IMPACT

The projected annual operating budget for the first year of operation in FY2029 is $234,900. The budget will cover utilities, groundskeeping, pest control and other site maintenance, along with general building maintenance that includes security and telecommunications support.

Other costs include building operation permits for the building and components, such as elevator and pressure vessels, and specialized maintenance service contracts, such as elevators and fire sprinkler testing. The budget will also include general management of the facility, moving costs for the first year, and subsequent moving expenses throughout the life of the building.

C.2 CAPITAL & OPERATING COSTS

The first biennium at building occupancy is FY29-31. The operating and maintenance cost, including building preservation and replacement based on funding, is $234,900 for FY29. Escalation from that point is assumed at 3.00 percent per year.

Total capital and operating costs for the five biennia amount to approximately $2.7 million.

C.3 MAINTENANCE & OPERATIONS AGENCY

The Lucy Covington Leadership House will receive EWU's current campus level of custodial services and building utilities maintenance. Current and future operations and maintenance costs will be funded from EWU's normal operations and maintenance funding.

Current campus operations and maintenance costs for FY24 are shown in Table 1 above. For the Lucy Covington Leadership House, the projected operations and maintenance costs for the first full year of occupancy (FY2029) are $234,900. Table 2 shows projected costs for FY29 through FY38.

D. FURNITURE, FIXTURES & EQUIPMENT

Estimated funds for furniture, fixtures, and equipment are included in the project budget.

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Section 06

APPENDICES

A. Predesign Checklist

B. Cost Analysis

C. DAHP & Tribal Correspondence

D. Project Detail

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SECTION 06

APPENDICES

SECTION 06

APPENDIX A: PREDESIGN CHECKLIST

EXECUTIVE SUMMARY

PROBLEM STATEMENT, OPPORTUNITY, OR PROGRAM REQUIREMENT

- ☒ Identify the problem, opportunity or program requirement that the project addresses and how it will be accomplished.
- ☒ Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location or physical accommodations. Include anticipated caseload projections (growth or decline) and assumptions, if applicable.
- ☒ Explain the connection between the agency's mission, goals and objectives; statutory requirements; and the problem, opportunity or program requirements.
- ☒ Describe in general terms what is needed to solve the problem.
- ☒ Include any relevant history of the project, including previous predesigns or budget funding requests that did not go forward to design or construction.

ANALYSIS OF ALTERNATIVES (INCLUDING THE PREFERRED ALTERNATIVE)

- ☒ Describe all alternatives that were considered, including the preferred alternative. Include:
  - ☒ A no action alternative.
  - ☒ Advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis that compares the alternatives, including the anticipated cost for each alternative.
  - ☒ Cost estimates for each alternative:
    - ☒ Provide enough information so decision makers have a general understanding of the costs.
    - ☒ Complete OFM's Life Cycle Cost Model (RCW 39.35B.050).
  - ☒ Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.

DETAILED ANALYSIS OF PREFERRED ALTERNATIVE

- ☒ Nature Of Space
  - ☒ Community Gathering Areas
  - ☒ American Indian Student Center
- ☒ Occupancy
- ☒ Basic configuration of the building, including square footage and the number of floors.
- ☒ Space needs assessment. Identify the guidelines used.
- ☒ Site Analysis
  - ☒ Identify site studies that are completed or under way and summarize their results.
  - ☒ Location.
  - ☒ Building footprint and its relationship to adjacent facilities and site features. Provide aerial view, sketches of the building site and basic floor plans.
  - ☒ Water rights and water availability.
  - ☒ Stormwater requirements.
  - ☒ Ownership of the site, easements, and any acquisition issues.
  - ☒ Property setback requirements.
  - ☒ Potential issues with the surrounding neighborhood, during construction and ongoing.
  - ☒ Utility extension or relocation issues.
  - ☒ Potential environmental impacts.
  - ☒ Parking and access issues, including improvements required by local ordinances, local road impacts and parking demand.
  - ☒ Impact on surroundings and existing development with construction lay-down areas and construction phasing.
- ☒ Consistency With Applicable Long-Term Plans
- ☒ Consistency with other laws and regulations:
  - ☒ High-performance public buildings (Chapter 39.35D RCW).

- ☒ State efficiency and environmental performance, if applicable (Executive Order 20-01).
- ☒ State energy standards for clean buildings (RCW 19.27A.210).
- ☒ Compliance with required vehicle charging capability for new buildings that provide on-site parking (RCW 19.27.540).
- ☒ Greenhouse gas emissions reduction policy (RCW 70.235.070).
- ☒ Archaeological and cultural resources (Executive Order 05-05 and Section 106 of the National Historic Preservation Act of 1966).
- ☒ Americans with Disabilities Act (ADA) implementation (Executive Order 96-04).
- ☒ Compliance with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.
- ☒ Information required by RCW 43.88.0301(1).
- ☒ Other codes or regulations.

☒ Identify problems that require further study. Evaluate identified problems to establish probable costs and risk.

☒ Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.

☒ Identify planned technology infrastructure and other related IT investments that affect the building plans.

☒ Identify any site-related and/or physical security measures for the project.

☒ Describe planned commissioning to ensure systems function as designed.

☒ Describe any future phases or other facilities that will affect this project.

☒ Provide a comparative discussion of the pros and cons of the project delivery methods considered for this project and offer a recommendation of proposed procurement method for the preferred alternative.

☒ Describe how the project will be managed within the agency.

☒ Schedule.

- ☒ Provide a high-level milestone schedule for the project, including key dates for budget approval, design, bid, acquisition, construction, equipment installation, testing, occupancy and full operation.
- ☒ Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).
- ☒ Describe factors that may delay the project schedule.
- ☒ Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
- ☒ Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are a part of the process.

PROJECT BUDGET ANALYSIS FOR THE PREFERRED ALTERNATIVE

☒ Cost estimate.

- ☒ Major assumptions used in preparing the cost estimate.
- ☒ Summary table of Uniformat Level II cost estimates.
- ☒ The C-100.

☒ Proposed funding.

- ☒ Identify the fund sources and expected receipt of the funds.

N/A If alternatively financed, such as through a COP, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.

☒ Facility operations and maintenance requirements.

- ☒ Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs) and moving costs.
- ☒ Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repair, replacement and maintenance.
- ☒ Identify the agency responsible for ongoing maintenance and operations, if not maintained by the owner.

☒ Clarify whether furniture, fixtures and equipment are included in the project budget. If not included, explain why.

PREDESIGN APPENDICES

☒ A. Predesign Checklist.

☒ B. Completed Life Cycle Cost Model.

☒ C. DAHP Letter.

N/A Title report for projects including proposed acquisition.

SECTION 06

APPENDIX B: COST ANALYSIS

B.1 FORM C-100

The complete Form C-100 is included on the following pages.

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2024

Agency	Eastern Washington University
Project Name	Lucy Covington Leadership House
OFM Project Number	40000071

Contact Information	
Name	Kris Jeske, Director of Construction and Planning
Phone Number	509-359-6565
Email	kjeske@ewu.edu

Statistics			
Gross Square Feet	15,000	MACC per Gross Square Foot	$829
Usable Square Feet	9,690	Escalated MACC per Gross Square Foot	$939
Alt Gross Unit of Measure			
Space Efficiency	64.6%	A/E Fee Class	B
Construction Type	Auditorium without stag	A/E Fee Percentage	8.23%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Procurement Approach	DBB	Art Requirement Applies	Yes
Inflation Rate	3.33%	Higher Ed Institution	Yes
Sales Tax Rate %	8.90%	Location Used for Tax Rate	Cheney, WA
Contingency Rate	5%		
Base Month (Estimate Date)	June-24	OFM UFI# (from FPMT, if available)	
Project Administered By	Agency		

Schedule			
Predesign Start	January-23	Predesign End	June-24
Design Start	November-26	Design End	November-27
Construction Start	November-27	Construction End	November-28
Construction Duration	12 Months		

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Project Cost Summary

Total Project	$18,375,824	Total Project Escalated	$20,739,252
		Rounded Escalated Total	$20,739,000

Amount funded in Prior Biennia	**$0**
Amount in current Biennium	**$0**
Next Biennium	**$0**
Out Years	**$20,739,000**

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$285,000		
Design Phase Services	$986,448		
Extra Services	$730,000		
Other Services	$383,114		
Design Services Contingency	$119,228		
Consultant Services Subtotal	**$2,503,790**	**Consultant Services Subtotal Escalated**	**$2,764,952**

Construction			
Maximum Allowable Construction Cost (MACC)	$12,434,902	Maximum Allowable Construction Cost (MACC) Escalated	$14,088,025
DBB Risk Contingencies	$0		
DBB Management	$0		
Owner Construction Contingency	$621,745		$706,054
Non-Taxable Items	$0		$0
Sales Tax	$1,162,115	Sales Tax Escalated	$1,316,757
Construction Subtotal	**$14,218,762**	**Construction Subtotal Escalated**	**$16,110,836**

Equipment			
Equipment	$520,000		
Sales Tax	$46,280		
Non-Taxable Items	$0		
Equipment Subtotal	**$566,280**	**Equipment Subtotal Escalated**	**$643,068**

Artwork			
Artwork Subtotal	**$103,180**	**Artwork Subtotal Escalated**	**$103,180**

Agency Project Administration			
Agency Project Administration Subtotal	$813,811		
DES Additional Services Subtotal	$65,000		
Other Project Admin Costs	$105,000		
Project Administration Subtotal	**$983,811**	**Project Administration Subtotal Escalated**	**$1,117,216**

Other Costs			
Other Costs Subtotal	**$0**	**Other Costs Subtotal Escalated**	**$0**

Project Cost Estimate			
Total Project	**$18,375,824**	Total Project Escalated	**$20,739,252**
		Rounded Escalated Total	**$20,739,000**

Funding Summary

	Project Cost (Escalated)	Funded in Prior Biennia	Current Biennium 2025-2027	2027-2029	Out Years
Acquisition					
Acquisition Subtotal	$0				**$0**
Consultant Services					
Consultant Services Subtotal	$2,761,975	$300,000	$2,400,000	$61,975	**$0**
Construction					
Construction Subtotal	$16,093,773			$16,093,773	**$0**
Equipment					
Equipment Subtotal	$642,389			$642,389	**$0**
Artwork					
Artwork Subtotal	$103,071			$103,071	**$0**
Agency Project Administration					
Project Administration Subtotal	$1,116,036			$1,116,036	**$0**
Other Costs					
Other Costs Subtotal	$0				**$0**
Project Cost Estimate					
Total Project	**$20,717,244**	**$300,000**	**$2,400,000**	**$18,017,244**	**$0**
	$20,717,000	**$300,000**	**$2,400,000**	**$18,017,000**	**$0**
	Percentage requested as a new appropriation		**12%**		

What is planned for the requested new appropriation? (*Ex. Acquisition and design, phase 1 construction, etc.*)
Consultant Services for Design and Construction Documents
Insert Row Here

What has been completed or is underway with a previous appropriation?
Predesign Report was underway and completed in the 2023-2025 Biennium.
Insert Row Here

What is planned with a future appropriation?
Remaining Consultant Services, Construction, Equipment, Artwork and Project Administration.
Insert Row Here

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$285,000			
Other				
Insert Row Here				
Sub TOTAL	**$285,000**	**1.0800**	**$307,800**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$741,448			69% of A/E Basic Services
Specialty & Site design	$195,000			New Master Plan coord
Tribal Coordination	$50,000			GEO2102
Sub TOTAL	**$986,448**	**1.0978**	**$1,082,923**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$30,000			
Geotechnical Investigation	$25,000			
Commissioning	$50,000			
Site Survey	$5,000			
Testing	$10,000			
LEED Services	$45,000			
Voice/Data Consultant	$20,000			
Value Engineering	$15,000			
Constructability Review	$10,000			
Environmental Mitigation (EIS)	$5,000			
Landscape Consultant	$65,000			
Lighting Consultant	$30,000			
Audiovisual Consultant	$10,000			
Interior Design	$95,000			
Building Envelope Consultant	$45,000			
Value Engineering Support	$10,000			
Constructability Participation	$5,000			
Energy Life Cycle Cost Analysis	$10,000			
Life Cycle Cost Analysis	$35,000			
Models & Renderings	$15,000			
Full Fire Protection Design	$10,000			
Environmental Consulting	$45,000			
Reimbursable Expenses	$15,000			
Cultural Design Consulting	$125,000			
Sub TOTAL	**$730,000**	**1.0978**	**$801,394**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$333,114			31% of A/E Basic Services
HVAC Balancing	$25,000			
Staffing				

Comissioning Support	$20,000			
Cultural Design Construction Review	$5,000			
Sub TOTAL	**$383,114**	**1.1344**	**$434,605**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$119,228			
Other				
Insert Row Here				
Sub TOTAL	**$119,228**	**1.1344**	**$135,253**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$2,503,790**		**$2,761,975**	

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$238,960			
G20 - Site Improvements	$441,992			
G30 - Site Mechanical Utilities	$269,400			
G40 - Site Electrical Utilities	$396,000			
G60 - Other Site Construction	$45,000			
Design Cont	$278,270			
OP	$116,874			
Sub TOTAL	**$1,786,496**	**1.1159**	**$1,993,551**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1159**	**$0**	
3) Facility Construction				
A10 - Foundations	$345,147			
A20 - Basement Construction	$0			
B10 - Superstructure	$1,213,750			
B20 - Exterior Closure	$1,227,080			
B30 - Roofing	$577,884			
C10 - Interior Construction	$638,850			
C20 - Stairs	$0			
C30 - Interior Finishes	$617,498			
D10 - Conveying	$0			
D20 - Plumbing Systems	$318,685			
D30 - HVAC Systems	$1,181,064			
D40 - Fire Protection Systems	$75,000			
D50 - Electrical Systems	$875,545			
F10 - Special Construction	$0			
F20 - Selective Demolition	$0			
General Conditions	$900,000			
Built in Equipment/Casework	$521,714			
Design Cont	$1,518,443			
O&P	$637,746			
Sub TOTAL	**$10,648,406**	**1.1344**	**$12,079,552**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$12,434,902**		**$14,073,103**	
	$829		*$938 per GSF*	

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7) Owner Construction Contingency				
Allowance for Change Orders	$621,745			
Other				
Insert Row Here				
Sub TOTAL	**$621,745**	**1.1344**	**$705,308**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1344**	**$0**	
9) Sales Tax				
Sub TOTAL	**$1,162,115**		**$1,315,362**	
CONSTRUCTION CONTRACTS TOTAL	**$14,218,762**		**$16,093,773**	

Cost Estimate Details

Equipment					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Equipment					
E10 - Equipment					
E20 - Furnishings	$250,000				
F10 - Special Construction	$150,000				
IT Equip/computers/printers	$120,000				Design & Construction
Sub TOTAL	**$520,000**		**1.1344**	**$589,888**	
2) Non Taxable Items					
Other					
Insert Row Here					
Sub TOTAL	**$0**		**1.1344**	**$0**	
3) Sales Tax					
Sub TOTAL	**$46,280**			**$52,501**	
EQUIPMENT TOTAL	**$566,280**			**$642,389**	

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Artwork					
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$103,071				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$103,071**		**NA**	**$103,071**	

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
1) Agency Project Management					
Agency Project Management	$813,811				
Additional Services	$65,000				Tribal Coord.
EWU Tribal Liaison	$55,000				Design & const. support
Specialty construction	$50,000				
Subtotal of Other	*$105,000*				
PROJECT MANAGEMENT TOTAL	**$983,811**		**1.1344**	**$1,116,036**	

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Other					
Insert Row Here					
OTHER COSTS TOTAL	**$0**		**1.1159**	**$0**	

SECTION 06

APPENDIX B: COST ANALYSIS

B.2 OFM LIFE CYCLE COST MODEL

The Life Cycle Cost Model summary is included on the following pages.

Lease Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

* **New Lease Option 1 Description**	

	New Lease Information			
*	Lease Location	Cheney	Market Area:	Eastern Washington
*	Lease Square Feet Type			
*	New Facility Square Feet	15,000		
*	New Lease Start Date	8/1/2028		
	SF per Person Calculated	17		

	New Lease Costs	**Years of Term**	**Rate / SF / Year**	**Rate / Month**	**Adjusted to FS Rate**	**Total FS Rate / Month**	**Estimated FSG Market Rate**	**Estimated FSG Rate / Month**	**Real Estate Transaction Fees for Term**
*	Years 1 - 5	5				$ 38,897	$ 31.12	$ 38,897	$ 52,060
	Years 6 - 10	5				$ 44,509	$ 35.61	$ 44,509	$ 30,238
	Years								
	Years								
	Years								
	Total Length of Lease	10							$ 82,298
	Transaction Fee for first 5 Years	2.50%	*of total rent for first 5 years of term*						
	Transaction Fee for Additional Years	1.25%	*of total rent for term beyond 5 years*						

Note: Real estate transaction fees calculated on base lease - not full service rate including added services and utilities.

Added Services	**New Lease Operating Costs (Starting in current year)**	**Known Cost / SF / Year**	**Estimated Cost / SF / Year in 2028 -**	**Total Cost / Year**	**Cost / Month**
☑	Energy (Electricity, Natural Gas)	$ 0.99	$ 1.18	$ 14,850	$ 1,238
☑	Janitorial Services	$ 1.49	$ 1.73	$ 22,317	$ 1,860
☑	Utilities (Water, Sewer, & Garbage)	$ 0.39	$ 0.45	$ 5,805	$ 484
☑	Grounds	$ 0.06	$ 0.07	$ 930	$ 78
☑	Pest Control	$ 0.09	$ 0.11	$ 1,419	$ 118
☑	Security	$ 0.09	$ 0.11	$ 1,419	$ 118
☑	Maintenance and Repair	$ 5.84	$ 6.79	$ 87,591	$ 7,299
☑	Management	$ 0.88	$ 1.02	$ 13,158	$ 1,097
☑	Road Clearance	$ 0.14	$ 0.16	$ 2,064	$ 172
☑	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 9.97**	**$ 11.61**	**$ 149,553**	**$ 12,463**

Escalated to lease start date

	New Lease One Time Costs	**Current Estimate**	**Calculated (for reference)**	
*	Real Estate Transaction Fees		$ 82,298	*Per Std %*
*	Tenant Improvements		$ 225,000	*$150 per SF*
*	IT Infrastructure		$ 315,000	*$1500 per Person*
*	Furniture Costs		$ 450,000	*$7000 per Person*
*	Building Security and Access Systems			*$450 per person*
*	Moving Vendor and Supplies		$ 184,500	*$300 per Person*
	Other / Incentive			
	Total	$ -	$ 1,256,798	

Biennium Budget Impacts for New Lease	**Biennium Time Period**		**Existing Lease Option**	**New Lease Option 1**	**Biennium Impact:**
	Start	**Finish**			
25-27 Biennium Lease Expenditure	7/1/2025	6/30/2027	$ -	$ -	$ -
27-29 Biennium Lease Expenditure	7/1/2027	6/30/2029	$ -	$ 427,871	$ 427,871
29-31 Biennium Lease Expenditure	7/1/2029	6/30/2031	$ -	$ 933,537	$ 933,537
31-33 Biennium Lease Expenditure	7/1/2031	6/30/2033	$ -	$ 933,537	$ 933,537
33-35 Biennium Lease Expenditure	7/1/2033	6/30/2035	$ -	$ 1,062,597	$ 1,062,597

Ownership Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Lucy Covington Leadership House Preferred Option
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Cheney — Market Area = Eastern Washington

	Statistics	
*	Gross Sq Ft	15,000
*	Usable Sq Ft	9,690
	Space Efficiency	65%
	Estimated Acres Needed	2.00
	MACC Cost per Sq Ft	$768.99
	Estimated Total Project Costs per Sq Ft	$1,050.42
	Escalated MACC Cost per Sq Ft	$856.53
	Escalated Total Project Costs per Sq Ft	$1,169.99

*	**Move In Date**	11/1/2028

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 500,000	$ 500,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	10.06%	7.68% Std	10.06%
	Pre-Schematic Design services			
	Construction Documents			
	Extra Services			
	Other Services			
	Design Services Contingency			
	Consultant Services Total	$ 1,160,411	$ 869,788	$ 1,160,411
MACC	**Construction Contracts**			
	Site Work	$ 1,786,495		
	Related Project Costs			
	Facility Construction	$ 9,748,406		
	MACC SubTotal	$ 11,534,901	$ 5,428,200	$ 11,534,901
	Construction Contingency (5% default)		$ 576,745	$ 576,745
	Non Taxable Items			$ -
	Sales Tax		$ 1,026,606	$ 1,026,606
	Construction Additional Items Total	$ -	$ 1,603,351	$ 1,603,351
	Equipment			
	Equipment			
	Non Taxable Items			
	Sales Tax			
	Equipment Total	$ -		$ -
	Art Work Total		$ 57,675	$ 57,675
	Other Costs			
	General Conditions and Support Services	$ 900,000		
	Other Costs Total	$ 900,000		$ 900,000
	Project Management Total			$ -
	Grand Total Project Cost	**$ 13,595,312**	**$ 8,459,014**	**$ 15,756,338**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ 205,502	*$300 / Person in FY24*
Other (not covered in construction)			
Total	$ -	$ 205,502	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2028	Estimated Cost /GSF/ 2028	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ -	$ 1.18	$ 17,679	$ 1,473
☑	Janitorial Services	$ -	$ 1.73	$ 25,917	$ 2,160
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 0.45	$ 6,694	$ 558
☑	Grounds	$ -	$ 0.07	$ 1,030	$ 86
☑	Pest Control	$ -	$ 0.11	$ 1,716	$ 143
☑	Security	$ -	$ 0.11	$ 1,716	$ 143
☑	Maintenance and Repair	$ -	$ 6.79	$ 101,782	$ 8,482
☑	Management	$ -	$ 1.02	$ 15,276	$ 1,273
☑	Road Clearance	$ -	$ 0.16	$ 2,403	$ 200
☑	Telecom	$ -	$ -	$ -	$ -
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ -**	**$ 11.61**	**$ 174,214**	**$ 14,518**

SECTION 06

APPENDIX B: COST ANALYSIS

B.3 DETAILED COST MODEL

A detailed cost model for the Preferred Alternative is included on the following pages.

Owner: **Eastern Washington University**
Project: **Lucy Covington Leadership House**

ESTIMATED COSTS SUMMARY

June 4, 2024

Item	Description	QTY	UOM	$ / UOM	Cost
1	BUILDING - PREFERRED OPTION	15,000	BGSF	$ 649.89	$ 9,748,406
2	SITEWORK	60,000	SGA	$ 29.77	$ 1,786,495
3	General Conditions & Support Services	12	MO	$ 75,000	$ 900,000
Total Estimated Construction Cost (Today's Dollars)					**$ 12,434,902**
4	Escalation to Midpoint (Q2, 2028)	16.00%	on	$ 12,434,902	$ 1,989,584
Total Construction Cost (Escalated)					**$ 14,424,486**

2 of 23

Eastern Washington University
Lucy Covington Leadership House
Conceptual Estimate - Preferred Option

RØEN ASSOCIATES

Project Owner:	**Eastern Washington University**	**Architect:**	Womer & Assoc.
Project Name:	**Lucy Covington Leadership House**	**Project Duration:**	12 MO
Project Location:	Cheney, WA	**Building GSF:**	15,000
Project Start Date:	Q4, 2027	**Site GSF:**	60,000
Estimate Date:	June 4, 2024		

ESTIMATE SUMMARY					
No.	Description	Quantity	Unit of Measure	Unit Cost	Total Estimated Cost
A10	Foundations	15,000	BGSF	$ 23.01	$ 345,147
A20	Basement Construction	15,000	BGSF	$ -	$ -
B10	Superstructure	15,000	BGSF	$ 80.92	$ 1,213,750
B20	Exterior Enclosure	15,000	BGSF	$ 81.81	$ 1,227,080
B30	Roofing	15,000	BGSF	$ 38.53	$ 577,884
C10	Interior Construction	15,000	BGSF	$ 42.59	$ 638,850
C20	Stairs	15,000	BGSF	$ -	$ -
C30	Interior Finishes	15,000	BGSF	$ 41.17	$ 617,498
D10	Conveying Systems	15,000	BGSF	$ -	$ -
D20	Plumbing	15,000	BGSF	$ 21.25	$ 318,685
D30	HVAC	15,000	BGSF	$ 78.74	$ 1,181,064
D40	Fire Protection	15,000	BGSF	$ 5.00	$ 75,000
D50	Electrical	15,000	BGSF	$ 58.37	$ 875,545
E10	Equipment	15,000	BGSF	$ 22.33	$ 335,000
E20	Casework & Furnishings	15,000	BGSF	$ 12.45	$ 186,714
F10	Special Construction	15,000	BGSF	$ -	$ -
F20	Selective Demolition	15,000	BGSF	$ -	$ -
BUILDING CONSTRUCTION SUBTOTAL					**$ 7,592,217**
	Design Contingency			20.00%	$ 1,518,443
	Subtotal				$ 9,110,660
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 637,746
	Subtotal				$ 9,748,406
	Escalation to Mid-Point (See Summary)				$ -
BUILDING GRAND TOTAL		**15,000**	**BGSF**	**$ 649.89**	**$ 9,748,406**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

Eastern Washington University
Lucy Covington Leadership House
Conceptual Estimate - Sitework Preferred Option

ROEN ASSOCIATES

Project Owner:	**Eastern Washington University**	**Architect:**	Womer & Assoc.
Project Name:	**Lucy Covington Leadership House**	**Project Duration:**	12 MO
Project Location:	Cheney, WA	**Building GSF:**	15,000
Project Start Date:	Q4, 2027	**Site GSF:**	60,000
Estimate Date:	June 4, 2024		

ESTIMATE SUMMARY					
No.	**Description**	**Quantity**	**Unit of Measure**	**Unit Cost**	**Total Estimated Cost**
G10	Site Preparation	60,000	SGA	$ 3.98	$ 238,960
G20	Site Improvements	60,000	SGA	$ 7.37	$ 441,992
G30	Site Civil / Mech Utilities	60,000	SGA	$ 4.49	$ 269,400
G40	Site Electrical Utilities	60,000	SGA	$ 6.60	$ 396,000
G50	Other Site Construction	60,000	SGA	$ 0.75	$ 45,000
SITEWORK SUBTOTAL					**$ 1,391,352**
	Design Contingency			20.00%	$ 278,270
	Subtotal				$ 1,669,622
	Contractor Mark Up (Overhead, Profit, Insurance, Bond, B&O Tax)			7.00%	$ 116,874
	Subtotal				$ 1,786,495
	Escalation to Mid-Point (See Summary)				$ -
SITE GRAND TOTAL		**60,000**	**SGA**	**$ 29.77**	**$ 1,786,495**

Estimate excludes soft costs such as design fees, permits, testing / inspections, construction change order contingencies, loose fixtures / furnishings and sales tax.

SECTION 06

APPENDIX C: DAHP & TRIBAL CORRESPONDENCE

C.1 STATUS OF TRIBAL LIAISON

Eastern Washington coordinated with the Department of Archaeology and Historic Preservation (DAHP) to verify and confirm tribes to contact regarding the Lucy Covington Leadership House.

The tribes that EWU was required to contact fall within the Federally Recognized Tribes of Washington State and the Washington State Tribal Reservations and Draft Treaty Ceded Areas.

The following tribes were contacted:

> Confederated Tribes of the Colville Reservation

> Coeur d'Alene Tribe

> Spokane Tribe of Indians

C.2 DAHP CORRESPONDENCE

Correspondence from DAHP regarding the Lucy Covington Leadership House Predesign is included on the following page.

C.3 TRIBAL CORRESPONDENCE

Correspondence regarding the Lucy Covington Leadership House Predesign was sent to the tribal representatives listed below. Letters to each tribe are included on the following pages.

> **Confederated Tribes of the Colville Reservation**

Guy Moura,
Tribal Historic Preservation Officer

> **Coeur d'Alene Tribe**

Jill Maria Wagner, PHD,
Tribal Historic Preservation Officer

> **Spokane Tribe of Indians**

Randy Abrahamson,
Tribal Historic Preservation Officer

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 13, 2024

Troy Bester
Senior Project Manager
Construction and Planning Services, EWU

In future correspondence please refer to:
Project Tracking Code: 2024-06-04182
Property: Lucy Covington Leadership House - EWU Cheney Campus
Re: No Historic Resources Impacted

Dear Troy:

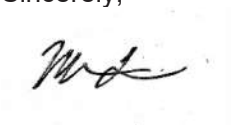
Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Officer (SHPO) under provisions of Governor's Executive Order 21-02. Our review is based upon documentation provided in your submittal. Please note this review is for the predesign phase of the project only.

It is our opinion that no historic resources will be impacted by the current project as proposed.

As a result of our opinion, further contact with DAHP on this proposal is not necessary. However, if new information about affected resources becomes available and/or the project scope of work changes significantly, please resume consultation as our assessment may be revised. Also, if any archaeological resources are uncovered during construction, please halt work immediately in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,



Maddie Levesque, M.A
Architectural Historian
(360) 819-7203
Maddie.Levesque@dahp.wa.gov

EASTERN WASHINGTON UNIVERSITY
Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Mr. Guy Moura
Tribal Historic Preservation Officer
Confederated Tribes of the Colville Reservation

RE: Propose Project at Eastern Washington University
Lucy Covington Leadership House
EWU Project No. CP1112

Mr. Moura,

This letter is to notify you of a proposed project, Lucy Covington Leadership Center, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

The building is proposed as a single-story structure totaling approximately 15,000 gross square feet. The Lucy Covington Leadership House will be a center to support the success of Native American students at the university and beyond. It will provide a location focused on creating a sense of community for these students allowing for an easier transition from their home to the university setting. The facility brings together cultural/community gathering & event spaces, student collaboration & support spaces, and exhibit gallery & performance spaces.

The initial site proposed for construction will be located entirely on the previously disturbed ground of the demolished Reid Laboratory School. Reid School was demolished in 2016. Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving parking and landscaping. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

Troy Bester
Senior Project Manager

Attachments:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

EASTERN WASHINGTON UNIVERSITY
Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Jill Maria Wagner, PhD
Tribal Historic Preservation Officer
Coeur d'Alene Tribe

RE: Propose Project at Eastern Washington University
Lucy Covington Leadership House
EWU Project No. CP1112

Dear Dr. Wagner,

This letter is to notify you of a proposed project, Lucy Covington Leadership Center, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

The building is proposed as a single-story structure totaling approximately 15,000 gross square feet. The Lucy Covington Leadership House will be a center to support the success of Native American students at the university and beyond. It will provide a location focused on creating a sense of community for these students allowing for an easier transition from their home to the university setting. The facility brings together cultural/community gathering & event spaces, student collaboration & support spaces, and exhibit gallery & performance spaces.

The initial site proposed for construction will be located entirely on the previously disturbed ground of the demolished Reid Laboratory School. Reid School was demolished in 2016. Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving parking and landscaping. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

Troy Bester
Senior Project Manager

Attachments:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

EASTERN WASHINGTON UNIVERSITY

Construction & Planning
1115 Cedar ST
101 Rozell Plant
Cheney, WA 99004-2464

June 21st, 2024

Mr. Randy Abrahamson
Tribal Historic Preservation Officer
Spokane Tribe of Indians

RE: Propose Project at Eastern Washington University
Lucy Covington Leadership House
EWU Project No. CP1112

Mr. Abrahamson,

This letter is to notify you of a proposed project, Lucy Covington Leadership Center, on the Eastern Washington University campus. In alignment with the requirements of the Office of Financial Management, the university will be submitting a predesign report for state review/approval of the project on June 30, 2024.

The building is proposed as a single-story structure totaling approximately 15,000 gross square feet. The Lucy Covington Leadership House will be a center to support the success of Native American students at the university and beyond. It will provide a location focused on creating a sense of community for these students allowing for an easier transition from their home to the university setting. The facility brings together cultural/community gathering & event spaces, student collaboration & support spaces, and exhibit gallery & performance spaces.

The initial site proposed for construction will be located entirely on the previously disturbed ground of the demolished Reid Laboratory School. Reid School was demolished in 2016. Sitework on the project will be minimal and focused on provision of utilities from a proposed geothermal plant nearby, paving parking and landscaping. A site diagram illustrating this area of work is attached.

Project specifications will include requirements for an Inadvertent Discover Plan (IDP) should any artifacts or remains be discovered during excavation.

We look forward to any comments or information you may have about any archaeological, historic, or cultural resources that may affect this project.

Sincerely,

Troy Bester
Senior Project Manager

Attachment:
Proposed predesign site plan

Voice: (509) 359-2204 Fax: (509) 359-4224 Email: tbester@.ewu.edu Website: Facilities and Planning (ewu.edu)
EWU expands opportunities for personal transformation through excellence in learning.

SECTION 06

APPENDIX D: PROJECT DETAIL

D.1 DETAILED NUMERIC SPACE PROGRAM

LUCY COVINGTON LEADERSHIP HOUSE: NUMERIC PROGRAM SUMMARY

PREFERRED ALTERNATIVE

PROGRAM AREA		NSF	% of NSF
COMMUNITY GATHERING AREAS			
Speaking Hall		5,100	*52.6%*
AMERICAN INDIAN STUDENT CENTER			
Learning Commons		1,800	*18.6%*
Dining Area		1,550	*16.0%*
Flexible Meeting Space		240	*2.5%*
EXHIBITION AREAS			
Lucy Covington Life & Legacy Gallery		1,000	*10.3%*
Total Assignable Square Feet (NASF)		***9,690***	
UNASSIGNABLE AREAS	*% of GSF*		
Building Support	*6.1%*	910	
Building Systems	*8.0%*	1,200	
Circulation / Walls	*21.3%*	3,200	
Subtotal - Unassignable Areas	*35.4%*	*5,310*	
Total Building Area		**15,000**	
Building Efficiency		**65%**	

TABLE:
Detailed Numeric Space Program

LUCY COVINGTON LEADERSHIP HOUSE: DETAILED NUMERIC PROGRAM

Preferred Alternative

Program Area	Proposed Program					
	Net Square Feet					
	staff	rm	sp gen	nsf	nsf/rm	total nsf
COMMUNITY GATHERING AREAS						
Speaking Hall						
Auditorium		1	300 seats	15	4,500.0	4,500
- Prefunction Area			*shared with community dining area*			
- A/V Support		1	1 rm	150	150.0	150
- Green Room		1	5 seats	30	150.0	150
- Table & Chair Storage		1	1 rm	300	300.0	300
Subtotal: Speaking Hall						***5,100***
Subtotal: Community Gathering Areas						***5,100***
AMERICAN INDIAN STUDENT CENTER						
Learning Commons						
Study Lounge		1	40 seats	25	1,000.0	1,000
Small Group Collaboration		4	4 sta	25	100.0	400
Makerspace/Open Work Area		1	16 seats	25	400.0	400
Subtotal: Learning Commons						*1,800*
Dining Area						
Community Kitchen		1	1 rm	300	300.0	300
Community Dining Area		1	50 seats	25	1,250.0	1,250
Subtotal: Dining						*1,550*
Flexible Meeting Space						
Drop-In Counselling and private study		2	1 rm	120	120.0	240
Subtotal: Flexible meeting space						*240*
Subtotal: American Indian Student Center						***3,590***
EXHIBITION AREAS						
Lucy Covington Life & Legacy Gallery						
Exhibit Gallery / Entry Reception		1	40 seats	25	1,000.0	*1,000*
- Storytelling Area (music, film, dance)						*use Speaker Hall*
Subtotal: Lucy Covington Life & Legacy Gallery						***1,000***
Subtotal: Exhibition Areas						***1,000***
Total Assignable Area						***9,690***

TABLE:
Detailed Numeric Space Program, Continued

LUCY COVINGTON LEADERSHIP HOUSE: DETAILED NUMERIC PROGRAM

Preferred Alternative

	Proposed Program					
			Net Square Feet			
Program Area	staff	rm	sp gen	nsf	nsf/rm	total nsf
UNASSIGNABLE AREAS						
Building Support						
Gender-Inclusive Restroom		2	4 stalls	60	240	480
Family / Private Restroom		1	1 rm	60	60	60
Individual Wellness / Lactation Room		1	1 rm	60	60	60
Custodial Closet		1	1 rm	60	60	60
Custodial Storage		1	1 rm	100	100	100
Building Storage		1	1 rm	150	150	150
Subtotal - Building Support					*6.1%*	*910*
Building Systems						
Mechanical / Plumbing					*6.0%*	900
Electrical / Telecommunications					*2.0%*	300
Subtotal - Building Systems					*8.0%*	*1,200*
Circulation / Walls						
Circulation					*13.3%*	2,000
Interior / Exterior Walls & Shafts					*8.0%*	1,200
Subtotal - Circulation / Walls					*21.3%*	*3,200*
Subtotal - Unassignable Areas					***35.4%***	***5,310***
Total Building Area (GSF)						***15,000***

D.2 ARCHITECTURAL BASIS OF DESIGN NARRATIVE

PROJECT DESCRIPTION

Construction of a new 1 story community gathering, student center and exhibit hall building at Eastern Washington University. The selected site for the Predesign analysis was the Reid Hall site immediately south of Martin Williamson Hall.

JURISDICTION

Anticipated Applicable Codes:

> Building: 2021 International Building Code, with Washington State Amendments, Chapter 51-50 WAC.

> Mechanical: 2021 International Mechanical Code, Chapter 51-52 WAC.

> Plumbing: 2018 Uniform Plumbing Code, Chapter 51-56 and 51-57 WAC.

> Electrical: 2020 National Electric Code (NFPA 70), Chapter 296-46B WAC.

> Fire: 2018 Washington State Fire Code, with Washington State Amendments

> Energy Code: 2021 International Energy Conservation Code (IECC) and Amendments, Chapters 51-11C and 51-11R WAC.

> Accessibility: ICC A117.1-2017 Standard for Accessible and Usable Buildings and Facilities.

> Building height and other planning regulations are governed by City of Cheney Municipal Code and Title 21 Zoning.

The project is required to submit for the State Environmental Policy Act (SEPA).

The roughly 15,000 sf building will be mixed occupancy of Assembly Group A3 as defined by the International Building Code (IBC). The building will be fully NFPA 13 sprinklered.

Construction Type: V-B

Allowable Building Height based on Construction Type: 60'

TABLE:
Minimum R-Values & U-Values for Exterior Component Type

Component	2021 WSEC
Foundation	R-10 for 2 ft
Basement Wall	R-13 batt + R10
Exterior Walls	R-13 batt + R10
Exterior Soffits	R-38 batt + R10
Roof	R-38 ci
Glazing	U-0.34
Glazing %	30% max
Doors	U-0.34 (glazed)
HVAC	Calculated

Allowable number of Stories above Grade: 2

Allowable area per floor (A-3 occupancy): 24,000 (S1-single story), 18,000 (multi-story) 38,000 (S1-single story)

Fire-resistance rated construction is largely not anticipated. The exception will be shafts and egress stairs.

GREEN BUILDING STANDARD

LEEDv4 Certified Silver BD+C minimum, Certified Gold BD+C preferred:

> Website: https://www.usgbc.org/resources/leed-v4-building-design-and-construction-current-version

Washington State Clean Buildings Act alignment:

> Website: https://www.commerce.wa.gov/growing-the-economy/energy/buildings

BUILDING SYSTEMS AND COMPONENTS

BUILDING ENVELOPE

A continuous self-adhered air and weather resistive barrier will cover the entire exterior sheathing. Thermal bridges are to be minimized and all penetrations of the exterior air barrier will be fully sealed. The exterior enclosure will be constructed to achieve a maximum air-leakage rating of 0.17 cfm/ft at 0.3 inches water gauge. The building will be blower door tested to demonstrate conformance.

Exterior Walls:
Exterior walls will be of non-bearing light gauge steel stud or may be wood studs for Type V-B. have R-24 fiberglass batt insulation filling the cavities between studs. In addition, there will be a minimum of 2 inches of continuous exterior mineral board insulation.

> Clear Cedar

At select locations, the use of wood siding and particularly cedar will be used. This is recommended to be under covered areas or protected from exposure. Where exposed, it shall have a durable exterior clear or semi transparent sealer with wood products dipped and coated on all sides with the sealer.

> Metal Panels

At select locations, Composite wall panels with concealed clips and/or fasteners over a thermally broken fiberglass clip or rail system to attach the building cladding back to the exterior wall structure

Exterior Windows:
Aluminum Storefront System

> Basis of Design: Aluminum framed, Kawneer Trifab 451UT thermally broken.

> Glazing: 1-inch double-pane Solarban 70 glazing with low-e coating on 2 surfaces, argon filled, or similar; code compliant.

> Finish: High-performance Kynar coating, Dark Bronze.

> Flashing: Prefinished aluminum to match.

TABLE:
Proposed Interior Finishes for Basis of Design

Program Area Types	Floors	Walls	Ceilings
Speaking Hall	Wood Gymnasium grade flooring	Level 4 GWB 50% Acoustical Treatment	Open to structure (CLT). 50% Acoustical treatment
Learning Commons	Carpet	Level 4 GWB 30% Acoustical Treatment	Open to structure (CLT). 50% Acoustical treatment
Dining Area	Polished Concrete	Level 4 GWB 50% Acoustical Treatment	Open to structure (CLT). 50% Acoustical treatment
Exhibit Areas	Wood Gymnasium grade flooring	Level 4 GWB 30% Acoustical Treatment	Open to structure (CLT). 50% Acoustical treatment
Building Support incl: Storage, Receiving , Custodial, MEP	Sealed Concrete	Level 3 GWB	Open to structure.
Circulation - Hallways	Polished Concrete	Level 4 GWB	Open to structure (CLT).
Restrooms	Floor Tile	Wall Tile up to 7’ on all wall surfaces.	GWB

Exterior Openings:
Exterior doors will be thermally broken, aluminum framed. Exterior doors at main entries will be fully accessible and have bollard mounted ADA push button paddles to operate motorized door openers.

Exterior louvers will be located as high off the ground as possible for security purposes. Their construction should be fully tamper-resistant and capable of preventing ingress. Louvers will be prefinished, or field painted to match adjacent finishes, factory fabricated and complete with frame, mullions and insect screens.

Roofing:
Low sloped roofs will be insulated to an average value of R-49 with continuous exterior board insulation located above the roof deck. Insulation will be mechanically fastened over a self-adhered vapor barrier over protection board and roof sheathing. Fleece-backed TPO (thermoplastic polyolefin) will be used as the roof membrane and be a minimum 80-mil thickness. Water will be directed to a series of roof scuppers, conductor heads and downspouts for drainage and potential on-site water storage facility.

- Sloped roof will be at a 3:12 slope and clad with Metal Roof Panels:
- Profile: 24 Gauge Standing Seam with minimum 1” seam height and concealed fastener system.
- Texture & Finish: Smooth, Fluoropolymer Coil Coating System.
- Snowguard: Continuous Fence type snow guard attached to standing seams with aluminum clamps.

Fall protection system will be a roof tie down system with Roof Anchors.

INTERIORS

Casework:
Casework throughout the project will conform to the North American Architectural Woodwork Standards (NAAWS), custom grade. Medium Density Fiberboard (MDF) with no added formaldehyde (NAF) will be used as the primary substrate for HPDL finished elements or solid wood. In wet areas, such as countertops, moisture resistant MDF is to be used. Casework is to be constructed using a frameless, flush overlay style with concealed European-style hinges. Forest Stewardship Council (FSC) Certified wood and composite wood for casework shall be required.

Wall Finishes:
Speaking Hall areas and Exhibit Areas will have a higher level of finish, furniture, display, and technology components. Assume use of wood veneer paneling, acoustic wall paneling and a more aesthetic acoustic ceiling system at these areas as identified in the table above.

Restrooms:
All shared restroom facilities will have full height partitions with locking doors and exhaust air ducting for each space. Toilet compartments and handwashing areas to have ceramic floor tile and ceramic wall tile up to an 7-foot height. There will be one accessible drinking fountain with a bottle filler.

D.3 CIVIL BASIS OF DESIGN NARRATIVE

SITE ANALYSIS

The proposed building will be in the northeast portion of the site with a paved access way that connects 7th Street to the building and will serve as a loading area and as a location for required ADA stalls. The access roadway will have enough space for loading and for a garbage truck to drive, turn around, and leave the facility. Concrete sidewalks will connect the main entrance of the building to the existing campus walkway system, as well as walkways to the south. Since this building serves as a building for Eastern Washington University students, most students will walk to this facility and not drive. There is an existing 60-stall parkivng lot at the south corner of the site that will remain.

The site is generally flat and based on NRCS Web Soil Survey the soils do not appear to present any challenges for foundation design and stormwater management. Stormwater runoff from the building and pavement will be routed to swales with drywells. The stormwater drainage will be treated for water quality and infiltrated in bio-infiltration swales. The approximate size for these swales is 4,400 square feet. The roof drains will connect to the drywells or incorporate into landscape design features. Typical sizes for storm drain piping are 6” to 8” diameter PVC pipes.

During the construction activities for this project there should be minimal impact to surrounding neighborhoods and their daily uses. Most construction activities and equipment/material storage should remain on the site. There may be minimal traffic control when connecting the access road to 7th Street and if large equipment is mobilized. All existing trees and vegetation will be protected during construction. The site will be seeded and irrigated after construction is completed. All necessary erosion control methods will be utilized during construction.

STORMWATER REQUIREMENTS

The proposed facility will follow the Stormwater Management Manual for Eastern Washington to meet the requirements for conveyance, flow control, and water quality treatment. It is anticipated that all stormwater will infiltrate on site but rainwater harvesting may be used to gain some LEED points. There will be a small amount of pollution generating impervious area, a small parking lot with an access road, that will be conveyed to a bio infiltration swale for water quality treatment. The bio infiltration swale will also be used for collecting the roof runoff from the building. Catch basins and piping will collect the runoff from the building and hard surface and be routed to the bio infiltration swales.

UTILITY EXTENSION / RELOCATION ISSUES

The existing site currently has water and sewer stubbed to the site as there was an existing building in the northeast corner of the lot that has been removed. The old water and sewer lines that went to an existing building will need to be removed / abandoned. There are existing sanitary sewer lines that run along the northern and eastern portion of the site as well as a water line along the eastern portion, which will be used as the connection point for the proposed building. It is assumed the building will have fire sprinklers and will need a fire service line as well as the domestic water service line. An irrigation system will be connected to the same water line. Locations for backflow preventers, water meters and fire hydrants will be determined during building and site design. There also is an existing utility tunnel under the existing concrete sidewalk as well as abandoned cable lines near the site.

EASEMENTS

There are no known easements located on the site.

D.4 LANDSCAPE BASIS OF DESIGN NARRATIVE

EXISTING SITE LANDSCAPE

The existing site is generally flat and has some minimal landscaping. There are irrigated turf and trees around the edges near pedestrian walkways and buildings. There is a large portion of the site covered in sparse turf areas with no irrigation.

LANDSCAPE DESIGN GUIDANCE

The exterior landscape design will be guided by several resources. It will be guided by the principles outlined EWU Climate Resiliency Landscape Masterplan, the Climate Action Plan, and the Prairie Restoration Project. It will also include input from project stakeholders and any other applicable requirements.

LEED CREDIT

The Lucy Covington Leadership Center Project is projected to receive a LEED Silver rating. Within LEED there are several areas where there is potential to gain points as they relate to the landscape design of this project.

- Protect and Restore credits can be gained with 25 percent of the site being planted with native and adapted plant materials.
- Open Space credit can be obtained by providing 30 percent or more of open space for the total site.
- Rainwater Management credit can be gained by providing rain gardens with native and adapted plants, use of permeable paving, and providing permanent stormwater infiltration systems that collect 100 percent using features vegetated swales, rain gardens, or water cistern.
- Heat Island Reduction credit can be gained by providing plant materials to shade paved areas and by providing paving materials that have an initial solar reflectance of at least 0.33.
- Outdoor Water Reduction credit can also be gained by use of no irrigation or reduced irrigation by reducing outdoor water consumption by 50 percent from the calculated from the sites peak watering month as calculated by the Environmental Protection Agency (EPA) Water Sense Budgeting tool.

OTHER RESOURCES

Other resources that will be utilized in the project will include the Washington Native Plant Society, native plant nurseries, and other resources with knowledge of native plants historically used by American Indians in the Eastern Washington areas. Information from local extension offices may also be utilized as a resource.

LUCY COVINGTON LEADERSHIP CENTER LANDSCAPE DESIGN

With the existing site being flat with little landscaping, landscape design features will be added to define spaces, provide interest, and provide educational opportunities. Predominately native and adapted plants will be used.

Foundation plantings will be provided around the building, along with a location for a medicinal plant garden incorporating plants that have historically been used by American Indians.

Shade trees will be provided throughout the site. Berms and rock features will also be used to define spaces and provide interest to the project.

A water conserving irrigation system will be designed to irrigate plants and reduce exterior water usage. Landscape plantings and features will be integrated into the site's stormwater system to reduce stormwater runoff and piping.

Other features incorporated into the exterior landscape will include pedestrian walkways, benches for seating, a cook shed, sweat lodge location, outdoor gathering space, outdoor classroom/event space, and an outdoor seating/dining area. In addition, there is potential to restore small areas to their original historical prairie condition, as is being planned in EWU Prairie Restoration Project.

D.5 STRUCTURAL BASIS OF DESIGN NARRATIVE

The following design narrative provides a general overview of the structural design including design loads, performance criteria, framing and lateral system descriptions, and material specifications.

DESIGN CRITERIA

2021 International Building Code

Roof Dead Load (includes solar panel load): 25 PSF

Snow Load: 32 PSF

> Ground Snow: 40 PSF

> Drifting and unbalanced snow loading in accordance with ASCE 7.

> Importance Factor = 1.10 (based on Occupancy Category III rating)

Roof Total Load Deflection Limit: L/240

Roof Live Load Deflection Limit: L/360

Wind Design

> Basic Wind Speed (3-second gust): 109 MPH

> Exposure C

> Risk Category III

Seismic Design

> Site Class(Per code minimum) D

> Spectral Response Coefficient (Short Period) SDS: 32.7%g

> Spectral Response Coefficient (1-Second Period) SD1: 18.0%g

> Seismic Design Category C

> Importance Factor 1.25

BUILDING FRAMING RECOMMENDATIONS

Preliminary plans are for a single story structure with a space for assembly with a high ceiling. Framing options for gravity loads include:

> Conventional framing of wood studs with plywood sheathing for lateral design with press plate wood trusses for roof framing.

> Mass-Timber framing with Cross-Laminated Timber members and glu-laminated beams.

> The tall assembly space may require structural steel braced frames or moment frames depending on the openness of the space of the final design.

Foundations will consist of conventional, reinforced, continuous spread footings. Columns will be supported on reinforced, isolated concrete footings. Footing sizes will be designed to meet the allowable soil bearing pressure. The floor will be a 4 inch thick slab on grade, reinforced with #4 rebar at 24" on center, each way. Slab joint spacing will be approximately 12'-0" on center in each direction. Sub-grade preparation for the slab on grade will be completed per the geotechnical report.

The roof framing over the two wings of the structure and the assembly space will be proprietary wood members such as RedBuilt Joists or Glu-Lam beams with SIPS panels for the decking.

Wind and earthquake forces will be resisted by a likely combination of the following options:

> Plywood-sheathed shear walls

> Steel-braced frames/moment frames

> CLT wall panels

TABLE:
Concrete Requirements

	Minimum 28 Day Compressive Strength	Air Entrainment (+or- 1.5%)	Maximum Size Aggregate	Maximum Water/cement Ratio
All Structural Conc, U.N.O.	3000 PSI	None	3/4"	0.50
Interior Slabs on Grade	3000 PSI	None	3/4"	0.42*
Exterior Slabs on Grade	4000 PSI	6%	3/4"	0.45
Topping Slabs	3000 PSI	None	3/8"	0.42*
Footings	3000 PSI	None	1"	0.50
Foundation Stem Walls	3000 PSI	5%	3/4"	0.45
Exterior C.I.P. Walls	3000 PSI	5%	3/4"	0.45
Structural Slabs & Columns	4000 PSI	None	3/4"	0.50

* Water/Cement ratio variance not allowed.

All reinforcing bars to be Grade 60 (Fy = 60,000 psi)

MATERIAL SPECIFICATIONS

Concrete Requirements: As shown in Table above.

Steel Framing Requirements

> Connection material, embedded items: ASTM A36

> Structural Tubes: ASTM A500, Grade B

> Structural framing bolts (steel connections): ASTM A325N

> Anchor Rods: ASTM A36

> Threaded Rods: ASTM A36

> Welding Electrodes: E70XX

Glu-Laminated Timber Beams

Per AITC 117 "Design Standard Specifications for Structural Glued Laminated Timber of Softwood Species"

Simple span beams: 24F-V4

Continuous or cantilever beams: 24F-V8

Cross-Laminated Timber Panels

CLT members to comply with ANSI/APA PRG 320 "Standard for Performance-Rated Cross-Laminated Timber"

Proprietary Wood Products

Premanufactured wood I-joists, open-web joists, beams, and trusses to have ICC acceptance. Possible manufacturers include but are not limited to:

> RedBuilt

> Trus Joist by Weyerhaeuser

D.6 MECHANICAL BASIS OF DESIGN NARRATIVE

GENERAL MECHANICAL REQUIREMENTS

All mechanical systems, equipment and components will be designed, selected and installed in accordance with all applicable codes and standards including:

- International Building Code (IBC), Standards and Amendments.
- International Mechanical Code (IMC), Standards and Amendments.
- International Fire Code (IFC), Standards and Amendments.
- Uniform Plumbing Code (UPC) Standards and Amendments.
- International Fuel Gas Code (IFGC).
- National Fire Protection Association (NFPA).
- National Electrical Code, (NEC); NFPA 70.
- 2021 Washington State Energy Code and all applicable State and local codes, laws and ordinances.
- LEED Silver Criteria
- Eastern Washington University Climate Action Plan 2022-2025
- 2021-23Predesign Manual for Capital Projects
- Industry Standards
  - American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
  - Air Conditioning and Refrigeration Institute (ARI) Standards
  - NFPA 90A - Installation of Air Conditioning and Ventilating Systems

ENERGY

Project Sustainability Goals

Electrification

- As the electrical grid adopts greater percentages of renewable energy sources (wind, solar, hydro, etc.), a path to decarbonize the built environment is electrification. The 2021 Washington Energy Code will require electrification for buildings of this size & occupancy for HVAC systems and partial electrification of building domestic hot water. This will be accomplished for this project through heat pump technology via a centrally located ground source.

LEED Certification

- Project is targeting LEED Silver certification minimum under the v4.1 New Construction pathway.

Resiliency

- Project should consider the effects of climate change on projected weather patterns when sizing and planning for operation of HVAC systems.

High Performance Public Buildings per 39.35D RCW

- Project to achieve LEED Silver minimum

Net Zero Energy per Executive Order 20-01

- Building to be designed to zero energy or zero energy-capable
- Team to evaluate building expected EUI and required PV array size along with for net zero ready, to be located on or off site as allowed by AHJ

Clean Buildings Act per RCW 19.27A.210

- Compliance with operating EUI targets beginning in 2028

GHG Emissions Reduction Policy

- Building to comply with statewide GHG emissions reporting requirements.
- Follow EWU Climate Action Plan objectives.

2021 WSEC Compliance

Project will be subject to the 2021 Washington building codes, including the 2021 Washington State Energy Code.

Envelope

- Project is anticipated to comply prescriptively with envelope provisions via the R-value, U-value, or Component Performance alternative approach.

C406 Additional Energy Efficiency Credit Measures

- Project shall comply with the minimum number of new building energy efficiency credits and new building load management credits per Table C406.1 and Table C406.2.
- Suggested efficiency credit strategies to explore include but are not limited to:
  - Improved heating efficiency
  - High-performance DOAS
  - Reduced lighting power
  - Renewable energy
  - Heat pump domestic hot water heating
  - Reduced air infiltration
- Suggested load management credit strategies to explore include but are not limited to:
  - Lighting load management
  - HVAC load management
  - Building thermal mass
  - Renewable Energy
- Project shall either provide an on-site solar PV array sized per section C411 or shall comply with one of the available exceptions. Preliminary size calculated at approximately 15 kW installed capacity.
- Project shall comply with solar readiness requirements to provide a solar zone for future PV and per section C411.

MECHANICAL SYSTEMS

The following narrative describes the mechanical systems intended for the new Lucy Covington Building which is to be constructed in a two phase approach.

Project Mechanical Goals

Utilize the EWU Physical Chilled Water Plant & New Geothermal Heating Plant proposed.

> EWU has invested heavily in this chilled water plant over the years, and it has the available capacity to serve this new Lucy Covington building. In addition, there are pipe mains extremely close to the proposed building footprint. The project team will make use of this available source.

> Utilize approximate 120 degree heating water for the new geothermal heating plant to reduce carbon footprint and reduce fossil fuel load of current campus steam system. New direct bury piping or tunnel construction will be required from central geothermal plant to proposed mechanical room location in phase 1.

Healthy Buildings

> Utilize decoupled ventilation & conditioning strategies using dedicated outside air systems (DOAS) or also known as energy recovery ventilators (ERV). These systems operate with the core intent to ensure buildings are well ventilated for students to learn success and improve energy efficiency. Provide both MERV 15 & carbon filtration to ensure high indoor air quality, even during forest fire seasons. Consider design impacts of future pandemic resiliency direction.

Building Load Estimates

Cooling: ~70 tons (120 gpm) Total

~46.6 tons (80 gpm) for phase 1

~23.4 tons (40 gpm) for phase 2

Heating: ~975 MBH Total

~640 MBH (60 gpm) for phase 1

~335 MBH (30 gpm) for phase 2

Ventilation: ~9,600cfm

Design Temperatures

> Cooling air supply temperature: 55°F-60°F

> Heating air supply temperature: 85°F-90°F

> Chilled water supply/return: 44°F/56°F (from campus central chiller plant)

> Heating water supply/return: 115-120°F/95-100°F (from new geothermal plant)

Electrified Source Energy System Concept

Heating System

> Hot water provided by the new campus low temperature heating water system that can supply 115-120°F water for heating use in building hot water coils.

Pumping configuration – primary/ secondary

> (2) primary inline pumps operating constant volume integral to equipment.

> (2) secondary vertical inline pumps operating variable volume will serve building coils as required.

Pressure independent control valves to be used at all coils.

Control per local and remote DP sensors.

> Located in the main mechanical room of phase 1.

> Piping to be sized to accommodate phase 2 of project but capped at phase 1 for continuation.

Backup boiler plant hot water connection.

> Sized to support the hot water supply via steam to hot water heat exchanger from EWU steam plant on campus via utility tunnels close to the Lucy Covington site & also build in system resiliency.

Other hydronic components include but are not limited to:

> Coalescing air separator sized for nominal main pipe size.

> Expansion tank.

> Makeup water assembly.

> Locate all hydronic equipment in the main mechanical room of phase 1.

Cooling System

> Pumping configuration – Primary, Secondary, Tertiary

> The primary and secondary pumps exist and are located at EWU's physical plant. Provide (2) tertiary vertical inline pumps operating variable volume to serve building coils. Tap off campus chilled water distribution utility tunnel northwest of building footprint and provide isolation valves exterior to the building in a small vault and immediately inside building.

> Pressure independent control valves to be used at all coils

> Control per local and remote DP sensors

> For system options I, provide (2) dedicated inline pumps to serve the terminal coil with lower temperature water (dehumidification ability). The tertiary pumping assembly described above will tap off the return line to the building, mix to 55-57°F and serve all building sensible only coils in the chilled beam system.

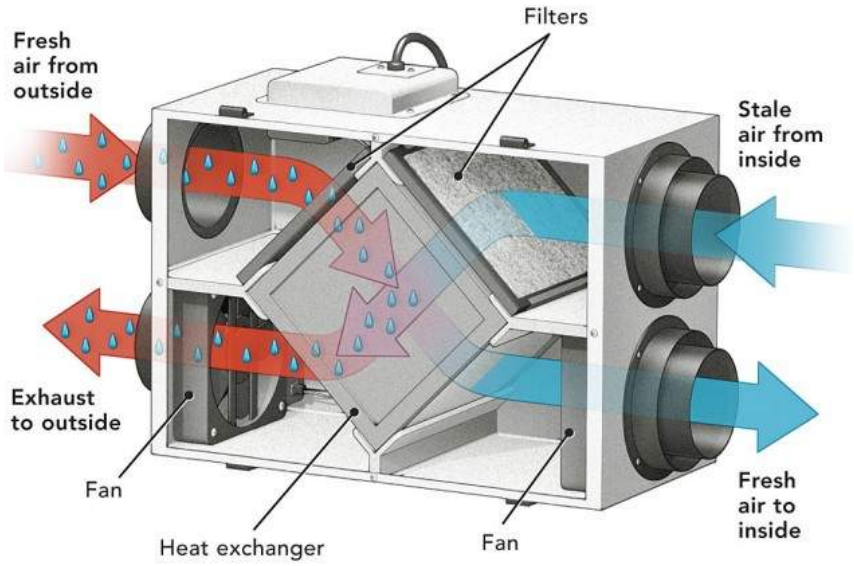
> Locate in main mechanical room in phase 1

Vibration & Sound Isolation

Mechanical equipment will be provided with vibration isolation mounts and hangers to meet criteria for maximum vibration levels.

HVAC systems will be designed to a maximum sound level of 45 dBA on the "A" weighted scale. More sensitive areas will be dealt with on a case-by-case basis depending on the space's specific requirements.

IMAGE:
Dedicated Outside Air System (DOAS)



Mechanical Insulation
Refrigerant piping will be insulated per manufacturers recommendations and IMC requirements.

Ductwork will be insulated with either external, flexible glass fiber blankets or internal, acoustical glass fiber duct liner.

Exhaust Systems
Toilet rooms, and general room exhaust will be provided with either individual exhaust fans or can be integrated to the DOAS system exhaust so the energy can be recovered from the conditioned air that would otherwise be wasted.

Air Distribution
Supply and return air will be distributed to each zone from the chilled beams(s) and fan coil(s) to the associated zone(s). Duct will be constructed per SMACNA standards and lining will be used to attenuate sound as needed to maintain acceptable sound levels for spaces served.

Ductless Split System
A ductless mini split system, in its most basic form, includes one outdoor unit and one indoor unit, connected by refrigerant tubing and electrical wiring. The indoor unit is often wall-mounted and delivers heated or cooled air directly into the space – no ductwork needed. Ductless split systems will be utilized for rooms such as IT and electrical which require year-round dedicated cooling.

Kitchen Exhaust and Make-up Air System
A type I hood system will be required for the commercial kitchen space. The indoor hood will be selected to meet the needs and equipment of the cooking space. A dedicated makeup air unit with evaporative cooling and natural gas heat will be located near the kitchen and ducted to the hood plenum. Demand controlled ventilation will be used to limit the amount of outside air needed from the makeup air unit and exhaust fan when systems under the hood are only in partial use.

Dedicated Outside Air System (DOAS)
All systems mentioned in HVAC system options will be coupled with an energy recovery DOAS system to provide ventilation to each space throughout the facility. This system uses a centralized dedicated outside air fan system to filter and temper the outside air that is required to maintain an acceptable level of indoor air quality with a modern office building. The tempered air (55 F to 65 F) is distributed to multiple fan coil units that provide individual zone control to different parts of the building.

The DOAS draws air into the building through a set of MERV 13 minimum filters to remove the majority of particulate matter from the air. After the filters, the air is passed through an energy recovery heat reclaim coil that preheats the air with waste heat from the building exhaust system. Next the air is passed through heating and cooling coils which operate depending upon the ambient conditions. A supply fan is then used to distribute the tempered outside air through the building to the system chosen for building conditioning.

Control Systems
This facility will utilize a Direct Digital Control system (DDC) for the control of the HVAC systems.

System features will include but not the following:

> Optimum start/stop
> Demand limiting
> Monitoring of supply air, outside air and mixed air temperatures
> Alarms
> Trend logging

The control system will have a direct interface with the electric utility meter for energy monitoring purposes. All air handling units will be equipped with airflow measuring stations in the outside air ductwork to ensure adequate and efficient ventilation. All air handling units and fan coil units will be equipped with economizer capability.

HVAC OPERATING STRATEGIES TO MAXIMIZE ENERGY SAVINGS

Varying air handler fan speeds:

> Fan speeds may be adjusted not only in response to heating or cooling needs, but also to limit peak electrical demand. Most buildings exhibit thermal inertia, meaning that the mass of the structure and its contents tend to stabilize temperature changes even when heating and cooling systems work to alter them.

> Some facility maintenance engineers have taken advantage of this stabilizing effect by reducing air handler fan speeds and the cooling or heating inherent in circulating air for brief periods (for example, 10 minutes out of an hour) when power cost is most costly. By sequentially shifting this reduction among all air handlers, no one space feels the reduction long enough to result in a significant change to occupant comfort.

Cooling and heating coil water supply temperatures:

> An outdoor air sensor may be used with appropriate programming to raise heating water temperature as outdoor temperatures drop and lower it on moderate days.

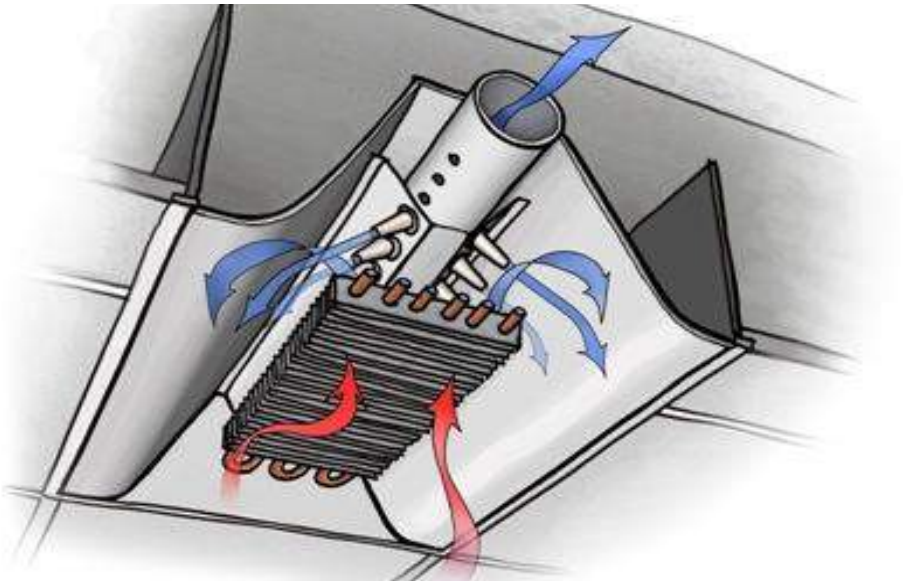
Supply water temperatures also may be reset based on return water or return air temperature where they reflect the need for conditioning specific zones or on a time schedule to reflect occupancy. When no one is in space, its temperature may be allowed to vary widely.

Carbon dioxide sensors:

> Carbon dioxide sensors can be used to control outside air intake. As with temperature control, sound HVAC design provides sufficient fresh air to deal with the worst-case scenario, including full occupancy in a zone such as meeting rooms or cafeterias. Most of the time, however, these spaces are only partially filled, so that far more outside air is brought in than required by code or comfort under this condition. Conditioning of outside air, at times, can account for nearly half the load on an HVAC system.

> By measuring carbon dioxide in return air, a reasonable estimate of the number of occupants may be made, allowing for a reduction in outside air.

IMAGE:
Chilled Beam System with DOAS



Chilled and heating water pump speed:

> Pump speed can be reduced through the use of variable speed drives. When zone coil water control valves throttle back in response to a reduced load in the space, a pressure sensor located within the piping system can sense the change in pressure and reduce the flow through the system accordingly.

HVAC SYSTEM OPTIONS

Chilled Beam System with DOAS (Preferred Alternative)
Active chilled beams use a circulating hot and chilled water loop that is routed to each heat pump unit. The heating and cooling source of this loop will come from either new the central geothermal campus plant and can be backed up via current campus central plant steam system.

Each chilled beam unit has a chilled and heated water connection to provide heating and cooling with the use of ventilation air from an energy recovery ventilator (DOAS). The temperature differential between the supplied and room air provides 3-4 times the amount of airflow increase through induction from what is provided to each chilled beam unit which greatly reduces overall system fan energy.

This mechanical system can vary widely in cost depending on geothermal plant capability. For pricing of this system, it is assumed to be heated water from the new geothermal heating plant with backup heat from campus steam system along with chilled water from the current chilled water plant and is estimated at approximately $50/SF.

Advantages:

> It's very flexible. The system can be subdivided or expanded into new zones to fit building remodeling or additions easily and inexpensively.

> If a unit fails, the entire system doesn't shut down.

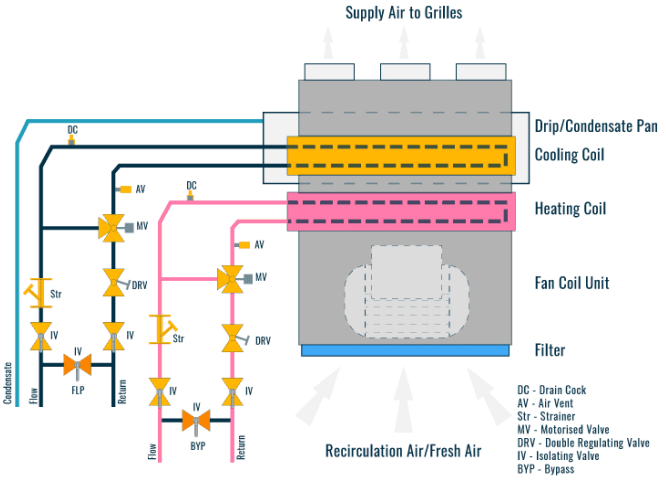
> This type of system can easily be designed to facilitate partial occupancy of the building while the remaining portions are unoccupied.

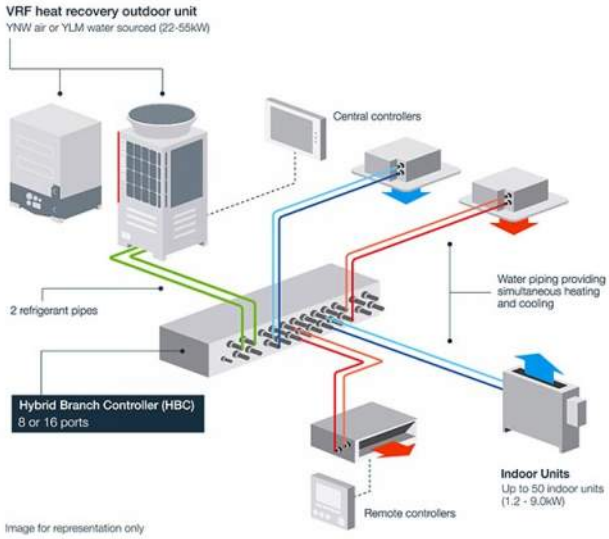
> No moving parts or filters on terminal units so maintenance is extremely low.

> Its high efficiency reduces annual energy costs and reduces greenhouse gas/CO2 emissions due to no terminal fan use for distribution of air.

> Newer technology allows for the variation of the nozzles airflow to accommodate demand control ventilation while not losing induction ratios.

IMAGE:
Four Pipe Fan Coil System with DOAS (Left)
Variable Refrigerant Flow (VRF) with DOAS (Right)





Disadvantages:

> Temperature swings can be hard for the chilled beam to keep up with that can cause comfortability issues for some in the extreme hot or cold.

> Pumps, Heat Pumps and/or chillers will require periodic maintenance.

Four Pipe Fan Coil System with DOAS
Four-pipe systems utilize two independent coils, one for heating and one for cooling, modulating cooling and heating valves for controlling coil capacities allow this type of system to only deliver the quantity of heating or cooling required by the space load. This makes the system very comfortable. For example, if 62F air is required to condition the space, then the coil valves will modulate water flow to the coils to deliver air at this temperature.

This system requires a central chiller and a boiler to provide the heating and cooling water to each respective loop. The water is circulated to the fan coils located in various mechanical rooms within the facility or could come from the campus network.

The estimated first cost for this system is around $45/SF installed.

Advantages:

> Unoccupied areas of the building may be isolated and shut down.

> Zones can be individually controlled.

> Familiar system across campus.

Disadvantages:

> This system requires multiple building envelope penetrations to accommodate individual outside air and relief hoods/louvers.

> Water loops need to be chemically treated periodically to prevent corrosion.

> Failure of the many valves and components it is circulated through.

Variable Refrigerant Flow (VRF) with DOAS
Variable refrigerant flow systems with heat recovery (VRF-HR) capability can operate simultaneously in heating and/or cooling mode, enabling heat to be used rather than rejected as it would be in traditional heat pump systems. VRF-HR systems are equipped with enhanced features like inverter drives, pulse modulating electronic expansion valves and distributed controls that allow the system to operate in net heating or net cooling mode, as demanded by the space.

The system we would propose would use a combination of concealed ducted ceiling mounted units to condition smaller individual spaces. Fan coil style units would also be used in larger meeting and conference rooms to provide adequate zoning. Additional refrigeration piping and capacity will be added based on anticipated needs by the owner. The outdoor condensing units will be mounted on the ground near the building since we will likely have a pitched roof. If mounting the unit on the roof is unacceptable, a well space at roof level or a ventilated mechanical space at the perimeter of the building are also acceptable locations for the units. Efforts will be made to locate the units in a central location considering the refrigeration line length limitation of the systems.

The estimated first cost for this system is around $42/SF installed.

Advantages:

> It's very flexible. The system can be subdivided or expanded into new zones to fit building remodeling or additions easily and inexpensively when extra branches are provided and capped.

> If a unit fails, the entire system doesn't shut down.

> This type of system can easily be designed to facilitate partial occupancy of the building while the remaining portions are unoccupied.

> Its high efficiency reduces annual energy costs and reduces greenhouse gas/CO2 emissions.

TABLE:
Analysis of Mechanical Systems

SYSTEM	COST ESTIMATE: - FIRST COST - ANNUAL MAINTENANCE COST - ANNUAL ENERGY COST	PRO	CONS
Chilled Beams (Preferred Alternative)	$1,200,000 $4,464 $41,240	• Lowest energy system • Possible Integration of Campus Utilities • Very Little Maintenance for Terminal Units • Individual Room Control	• High First Cost • Relies on Geothermal Central Plant for Maximizing Efficiency
4-Pipe Fan Coil	$1,080,000 $6,460 $54,200	• Possible Integration of Campus Utilities • Ease of Controllability • Familiar System on EWU Campus	• No Individual Room Control for Smaller Spaces • Not as Efficient as Other Systems • Chiller/Boiler Maintenance
Variable Refrigerant Flow	$1,008,000 $3,752 $40,385	• Lowest First Cost • Energy Efficient • Flexible Installation • Individual Room Control	• No use of Campus Utilities • Lots of refrigerant piping and leak potential • Shorter Equipment Lifespan • Specialized Technician Required for Maintenance

Disadvantages:

> Refrigerant leaks can be troublesome to track down when they occur.

> The sound of outdoor condensing units can be loud.

> Control integrations between proprietary controls and DDC can be problematic for precise control.

D.7 PLUMBING BASIS OF DESIGN NARRATIVE

Domestic hot water will be generated from water-to-water heat exchangers connected to the new low temperature heating water system, serviced by the newly proposed geothermal heating water system. Domestic hot water will be generated between 115-120°F from a water to water heat exchanger located in the mechanical room of phase 1. If water temperatures in excess of 120°F are needed within the building, an electric booster heater should be provided (style of booster heater to be determined based upon discussions with EWU). Point of use mixing valves will be used at all lavatories and hand washing sinks to limit water to 105°F. Each system will have a circulation pump, which will operate only in the building occupied hours, or as programmed by the Energy Management System.

Plumbing fixtures, water heaters, domestic water piping, sanitary waste and vent piping, and storm drainage (rainwater) piping will be designed and installed in accordance with the Uniform Plumbing Code, Washington State Amendments to UBC Chapter 11 Accessibility and the Rules and Regulations of the Washington State Board of Health.

Site Utilities for sewer and water service will come from existing sanitary sewer lines that run along the northern and eastern portion of the site as well as a water line along the eastern portion, which will be used as the connection point for the proposed building. It is assumed the building will have fire sprinklers and will need a fire service line as well as the domestic water service line. An irrigation system will be connected to the same water line. Locations for backflow preventers, water meters and fire hydrants will be determined during building and site design.

It is estimated that the new facility will require a 2-1/2 inch domestic water service and a 6-inch wastewater connection. Survey information will determine if a new tap is required for either service mentioned.

Kitchen faucets will be limited to 2.2 gallons per minute (gpm) flow except for those used for filling operation. Toilet rooms will have wall hung water closets (1.28 gallons per flush) and urinals (0.125 gallon per flush) with battery-powered, sensor-operated flush valves. Lavatories will be low flow (.5 gpm), battery-powered, sensor-operated faucets.

LEED requirements may affect the values stated above if points for Indoor Water Use Reduction are implemented.

CONCLUSION

In conclusion, we believe the active chilled beam system will be the best system fit for the proposed building and use. Blending high efficiency and versatility while respectfully using the land as a heat sync provides one of the lowest carbon footprints available and will assist in LEED certification of the new facility. While this system is not the least expensive upfront cost option it will attain project goals of sustainability and renewability which are extremely important to the meaning and mission of the Lucy Covington Building stakeholders. This system also gives excellent zone control and equipment longevity which is easily modified for future building reconfiguration in the future. The table below is a summary of estimated costing and benefit analysis.

D.8 ELECTRICAL, TELE-COMMUNICATIONS, AND SECURITY BASIS OF DESIGN NARRATIVE

PROJECT ELECTRICAL ANALYSIS

General

The conceptual program for the Preferred Alternative allocates approximately 15,000 gross square feet (GSF), into a single-story facility that supports the project goals described in Section 02, Problem Statement. The proposed Lucy Covington Leadership House brings together cultural/community gathering & event spaces, student collaboration & support spaces, and exhibit gallery & performance spaces. The proposed building concept incorporates a speaking hall that accommodates 300 people, a student commons for studying and collaboration, and exhibit space featuring the life and legacy of Lucy Covington.

Located on the southeast corner of 7th Street. And G Street, in the City of Spokane, Washington. The project includes minimal additional parking in accordance with City of Spokane ordinances and provisions, given there is existing parking in proximity. The new building will adhere to the 2021-23 OFM Biennium Predesign Manual & the 2020 NEC (National Electrical Code). Design will provide power and infrastructure for solar readiness to allotted space designated by architect to comply with 2021 Washington State Energy Code.

Applicable Codes And Standards

The completed installation will conform to the latest adopted version of all federal, state, and local codes with amendments and additions, regulations, including industry standards, such as:

- IEEE: Institute of Electrical and Electronic Engineers
- NEMA: National Electrical Manufacturers Association
- NFPA: 110
- NFPA: National Fire Protection Association
- NEC: National Electrical Code
- IBC: International Building Code
- IFC: International Fire Code
- TIA/ETA: All Applicable Telecommunications Industry Assoc./ Electrical Industries Alliance. Applicable State and local codes, laws, and ordinances.

All Necessary permits and inspection required by the governing authorities having jurisdiction over this work are to be obtained by the Contractor. Compliance with state and local codes is the responsibility of the Contractor.

Existing Site Utilities

Existing onsite power. The proposed project site is currently serviced by Avista through underground electrical distribution system. The campus Electrical Distribution Upgrades Ph. 2, Termination Pt. #11A above grade, brings a high voltage switch to the proposed Lucy Covington Leadership House site. A new underground feeder from the existing termination Pt. #11A will be installed to serve the new building. Transformer location to be coordinated during design phase

Utility to coordinate burial of remaining electrical overhead services and/or relocation of underground electrical. Avista and Eastern Washington Campus Officials to verify acceptable design.

New Electrical Power Distribution

The proposed project site is currently serviced by underground electrical and would require use of the above ground service and meter locations to be coordinated with Architect. Estimated utility service will be 2000 AMPS at 208V, 3 PHASE, with estimated loads as follows:

- Lighting: 18.7 Kw
- Air Conditioning 100 Kw
- Heating 28.3 Kw
- Water Heating 15.4 Kw
- Cooking 13.7 Kw
- Refrigeration 3.66 Kw
- Receptacles 137.3 Kw
- Miscellaneous 4.6 Kw
- Elevators 20 Kw
- Other Motors 92.7 Kw

Total Connected Load 434.4 Kw

+25% Spare Capacity 543 Kw

543 kW at 80% Power Factor 679kVA (1885 amps)

Power Density

Standard power density (W/ft2) for typical educational space will be provided.

Redundancy And Emergency Power

A generator will be provided for the addition as an alternate electrical source of power for use during an interruption of the normal electric supply if the existing emergency generator systems prove to be loaded to the recommended maximum capacity. Generator back-up and emergency power will be provided in accordance with the NEC, and NEMA 110.

Eastern Washington University Campus requirement specify emergency and standby power generation will be provided by means of a weatherproof sound attenuating engine driven natural gas fueled generator set. The generator will be sized to supply the emergency and standby loads served. Emergency power will be monitored to report most normal failures such as low starting batteries, overload, etc.

The generator(s) will be mounted at appropriate height to allow for maintenance access to oil drain low point. Provided with an automatic transfer switch to automatically switch loads between the normal EWU campus power and generator backed power.

The emergency electrical distribution system will supply power to all life safety systems within the building such as egress lighting, exit lighting and the fire alarm system. Standby power system

is to provide generator backed power to non-life safety loads within the new building as necessary, such as computer servers, telecommunications rooms and it associated cooling along with any other equipment determined critical.

Lighting Design
Lighting controls will be in accordance with applicable energy codes. Lighting levels will be provided in designated spaces per 2021 Washington State Energy Code. We will use the Illuminating Engineering Society (IES) standards for all areas not covered by the Architect/ Engineer Design Guide. High efficiency LED luminaires will be provided with energy-saving control and switching scenarios. Light fixture types, layout and switching configurations/locations, utilizing antimicrobial finishes where required will be closely coordinated in accordance with EWU standards and design intent. In addition, site/parking LED lighting standards will also be added and integrated into the existing campus site-controlled lighting infrastructure. Lighting CCT will range from 3500 K - 4000 K promoting focus and alertness in an education facility. Interior Lighting Power Allowances – Building Area Method will meet the 0.70 LPD (w/ ft2) per WAC 51-11C-405053. Exterior building grounds lighting will have an efficacy of 100 lumens per watt per WAC 51-11C-4705061.

Lighting Levels
Lucy Covington Leadership house required lighting levels are as follows: (For spaces not listed, the current IESNA light level recommendations will be followed).

> Offices: 45 FC with dual level switching and occupancy sensor.
> Lobbies: 20 FC
> Corridors and means of egress: 15 FC.
> Conference rooms: 30 FC to 50 FC with dimming controls as required.
> Restrooms: 20 FC
> Equipment rooms: 30 FC
> Computer Rooms/Data Center: 50FC with dual level switching.
> Laboratories (general): 750 to 100FC.
> Exterior lighting at building entrances, walkways, streets, and parking lots: Not more than 2 FC.

Enhanced Circadian Lighting Desing that promotes higher productivity, improved memory and cognitive function including improved mood and metabolic health will be considered to combat the systemic relationship that Indigenous students have with education facilities.

Lighting Controls
Manual switches to turn on, occupancy sensors to turn on or off, scheduled lighting controls and lighting sweeps and daylight dimming will be designed in accordance with applicable state and federal energy codes in addition to meet and/or exceed project LEED Silver certification requirement. Predesign lighting control intent is as follows:

> Open office: manual switch on, occupancy sensor off.
> Closed office, storage and copy rooms: manual switch on, occupancy sensor off.
> Corridors and other service spaces: time clock schedule.
> Perimeter office (open and closed), lobbies and corridors: same as above, but also include daylight dimming.
> Conference rooms: manual switch on, occupancy sensor off.
> Parking garage: Not Applicable.
> Exterior: photocell and time clock.

Receptacles
Receptacles will be duplex-grounded receptacles and no more than 6 duplex receptacles on a single circuit. Electrical receptacle cover plates will be distinctively colored or marked for identification.

Electrical receptacle cover plates or electrical supplied from the emergency system will be distinctively colored or marked for identification. Ground fault interrupters will comply with NFPA 70. Receptacles will comply with the Architect/Engineer Design Guide.

Conduit
Conduits will be rigid metal type when used in damp or exposed locations, or when specifically required by the NEC. PVC conduit will be used where routed underground. PVC Schedule 40 conduit will be used for concrete encased circuits. PVC Schedule 80 conduits will be used for direct buried branch circuits. Electrical metallic tubing will be used in dry concealed locations and in furred, ceiling spaces. Flexible conduits will be used for final connections to be recessed luminaires, motor driven equipment and vibrating equipment. Conduit will not be used as a ground path; all electrical circuits will contain an equipment ground wire. Minimum conduit size will be ¾" trade size for homeruns, ½" to receptacles, switches, and luminaires.

Conductors
Conductors will be copper with 600-volt insulation. Conductors No. 8 and larger will be stranded, type THWN. Smaller conductors will be a solid type THHN/ THWN. Aluminum conductors will not be permitted. Conductors for use in high temperature locations will be insulated as required by the NEC. The minimum size of power conductors will be No. 12 AWG.

Fire Alarm System
The Fire Alarm System will be provided in compliance with NFPA 101 and NFPA 72 as well as the Architect/Engineer Design Guide. The system will be integrated into the existing campus facilities fire alarm system. Contractor will provide a complete fire alarm system design to meet all requirements of the AHJ (Authority Having Jurisdiction).

No specific type or manufacturer is required during predesign, EWU campus preferred manufacturer and type will be coordinated during design phase. A fully addressable system is required to be code compliant.

Security System
Coordination with Owner's preferred vendor for rough-in and raceway only to device locations to be fully integrated per EWU standards.

Data And Communication Systems
The data and communications system scope of work at this time includes horizontal cabling for condominium units (phone and CATV), backbone cabling to each office level and each of two major retail tenant spaces, and house cabling needs. This includes copper, cable TV and fiber optic for backbone, and copper UTP and CATV for horizontal cabling. Lucy Covington Leadership House data and cabling will be designed with Phase 2 taken into consideration.

Networking equipment such as servers, ethernet switches, routers, software, and computers will be owner provided.

Telecommunication Rooms: MDF room will be a dedicated space located on the first floor of the building, to be designed for the termination of horizontal station cabling, backbone cabling and campus distribution cabling.

Security And Access Control
Coordination with Owner's preferred vendor for rough-in and raceway only to device locations. Security concerns for the building include controlling access to the office during the day to meet campus expectations and after hours. No specific type or manufacturer is being specified during predesign. Desired security system features (e.g., card reader, fingerprint, length of image storage capacity, remote access capabilities and backup features, user programmability, reporting functions, battery backup duration, etc.) will be coordinated with EWU campus security.

Audio Visual Systems
To be room specific, coordination with Owner's preferred vendor for rough-in and raceway only to device locations. Distribution of audio and video signaling within each classroom and conference room in accordance with EWU standards. The system will consist of AV input plate(s), ceiling mounted speakers, amplifier/video switcher, control panel, mounting hardware, wireless microphones, assistive listening output, and cabling. Audio visual equipment, such as video projectors, flat panel displays, etc. and will be furnished by the owner.

SUSTAINABILITY

General
Project baseline goal is LEED Silver with mandated Energy and Atmosphere requirements as follows:

> Fundamental Commissioning and Verification
> Minimum Energy Performance
> Building-Level Energy Metering
> Fundamental Refrigerant Management

Stretch goal for project entailing LEED Platinum to be addressed during design phase. EWU has expressed strong interest in Net Zero Renewable Energy. Enhanced goals to achieve Net Zero to be further assessed during design phase taking into account cost effectiveness, space constraints and environmental impact. Cost effective is defined as a simple payback of less than 5 years or a life cycle cost less than the baseline. A life cycle cost analysis (first cost, energy, operations, maintenance, replacement, productivity), is not necessary for measures with simple paybacks less than 5 years.

Solar Design
On-site renewable energy. New buildings larger than 10,000 square feet of gross conditioned floor area, will include a renewable energy generation system consisting of not less than 0.5 W/ft2 or 1.7 Btu/ft2 multiplied by the sum of the gross conditioned floor area. Washington State Energy Code 2021 Edition, 51-11C WAC Section C411.

Based on a 15,000 SF footprint the solar design will need to generate 7-8kW of renewable energy. It can be anticipated to be a minimum of $93,000.00 Solar Energy Electrical Power Generation System including, solar panels, inverter(s), mounting, accessories.

System Specifications:
> MAXIMUM POWER DC (WP): 8,000 watts DC; 8.0 kW
> MAXIMUM POWER AC (WP): 7,305 watts AC CEC
> ESTIMATED POWER GENERATED: 967 kWh AC monthly average
> MAXIMUM POWER VOLTAGE VMP (V): 240 Volts
> MAXIMUM SYSTEM OUTPUT CURRENT IMP (A): 29 Amps
> MINIMUM REQUIRED OCPD CIRCUIT BREAKER RATING (A): 40 Amps
> ARRAY DIMENSIONS: 430 square feet
> ARRAY WEIGHT: 1,120 lbs.
> DISTRIBUTED LOAD: 2.6 lbs. psf.

Sustainability Goals And Strategies Summary
Eastern Washington University commitment to sustainability (EWU Climate Action Plan) and decarbonization offers several opportunities for LCLH to integrate enhanced energy efficiency design directives to include but not limited enhanced lighting control, color rendering, established equipment benchmark (e.g., plug load v. total energy consumption), controlled receptacles, light pollution reduction and renewable onsite energy.

Challenges towards building wide sustainability include space constraints limiting onsite renewable photovoltaic energy production. Photovoltaic battery storage and efficacy losses also pose a concern for a net zero design. Photovoltaic battery storage needs, an approximate lifespan of 20 years and cost effectiveness concerns pose ongoing challenges and future concerns. Electrical Utility power grid requirements will not reduce total Avista power plant capacity design and needs for the building.

COMMISSIONING

Scope
Current commissioning scope with campus management includes lighting controls, fire alarm interface, emergency power.

Electrical equipment (switchboards, panel boards, transformers), vertical transport, special systems (security, data and communications, intercom, CCTV, fire, life safety, fire alarm) are not under commissioning authority but will still have quality control and assurance requirements performed by design team, campus operations staff and the contractor.

Commissioning Plan
An Ongoing Commissioning Plan is a required document for LEED, Fundamental Commissioning of the Building Energy and Atmosphere Systems.

Rigor
Project predesign commissioning scope is for above average rigor of building systems.

Design Reviews
Design Reviews are characterized by a thorough independent design review of the commissioned systems and assemblies by qualified engineers focusing on commissioning, performance, and O&M issues.

Specifications
Commissioning specifications will be thorough and fully describe all requirements of the Contractor, including specific testing requirements for each type of equipment.

Roles
The roles of all parties and the sequence of the commissioning process will be clearly and completely described.

Installation Verification
Installation Verification during early and mid-construction the level of rigor is characterized by field observation by the Commissioning Authority or team, as necessary, to observe component and system installations for general progress and issues affecting performance and testing. Contractors are responsible for the installation, set up and startup of their equipment and filling out Commissioning Authority provided, and all manufacturer provided checklists.

Performance Verification
Performance Verification/Testing will be accomplished through review of control code programming, documented field testing of each sequence of operation for all equipment and through monitoring performance over time with trend logs from the building automation system. Testing will be conducted from detailed, step-by-step, repeatable test scripts specifically applicable to this project approved by the Commissioning Authority. Testing will include testing each sequence in the sequence of operations, and other significant modes, sequences and control strategies not mentioned in the written sequences; including, but not limited to startup, shutdown, unoccupied and manual modes, modulation up and down the unit's range of capacity, power failure, alarms, component staging and backup upon failure, interlocks with other equipment, and sensor and actuator calibrations.

All larger, more complex, or life-safety equipment will be individually tested. Testing only a sample of some equipment may be allowed where such equipment is small in physical size or importance, is numerous and is not complex or critical for life-safety. Tests for a given system or assembly will not be conducted until they are fully operational under normal and reliable control with construction checklists, control calibrations, programming and control system graphics complete.

All testing documentation for complex equipment will be directed and overseen by the Commissioning Authority or by another independent party, such as the fire marshal or a certified independent testing company (e.g., electrical equipment testing). Documented testing for less complex equipment and repetitive equipment (of large quantities, e.g., air terminal units) may be directed by the Contractor alone, as approved by the Commissioning Authority, with spot retests and test report review by the Commissioning Authority.

Commissioning Objectivity
Project predesign commissioning scope is for typical level of objectivity. Commissioning Authority will have direct access to independently discuss issues with any party of the project team and by all issues identified by the commissioning team from initial identification being concurrently distributed directly to the Owner, Architect and Contractor.

Issue Management
Issue Management. Issues are legitimate for identification and distribution when, 1) Any requirements as delineated in the contract documents are not being met, or 2) When significant elements of the EWU's Project Requirements are not being met). Issues will be reported regardless of potential cost impacts to any party or potential impacts to the project schedule.

SECTION 06

APPENDIX E: MEMORANDA OF UNDERSTANDING

E. MEMORANDA OF UNDERSTANDING

The Lucy Covington Leadership House will further the goals of Eastern Washington University's commitment to the Memoranda of Understanding (MOUs) with three regional Tribes: Coeur d'Alene (July 26, 2019), Kalispel (February 12, 2018), and Spokane (April 15, 2019).

The primary purpose of the MOUs is to sustain and advance relationships between EWU and these Tribes. The purpose identified in the MOUs are summarized as follows:

- Establish an Annual Tribal Leadership Summit.
- Establish an American Indian Advisory Board where each Tribe has the authority to appoint one individual.
- Recruit, retain, and successfully graduate more American Indian students.
- Recruit, retain, and promote qualified American Indian faculty and staff to aid EWU in its mission and delivery of services to tribal communities and American Indian students.
- Strengthen partnerships between tribal communities and EWU academic and student support areas.
- Plan and construct a longhouse-style facility on campus that enhances the recruitment and success of American Indian students, acknowledges and honors the region's Tribes, and serves as a place for cultural learning and exchange for the entire community.

Through the MOUs, the preceding priorities will receive sustained attention from EWU and the Tribes to maintain communication and address shared objectives.

The MOUs are guided in spirit by the Centennial Accord between the Federally Recognized Indian Tribes in Washington State and the State of Washington of 1989. The accord affirms the sovereignty of Washington's federally recognized tribes and calls for clearer communication and better collaboration between tribal and state governments.

Lucy Covington Center Repository Research Agreement

Through an ongoing partnership with the Colville Confederated Tribes that Eastern Washington University formalized in the 'Lucy Covington Center Repository Research Agreement,' EWU intends to honor Lucy Covington's legacy. Within the Lucy Covington Initiative, emphasis areas have been identified: supporting future leaders; creating a confluence of culture and causes; and developing a Lucy Covington Archive.

The MOUs are included in this Appendix. A full copy of the Lucy Covington Center Repository Agreement (14 pages) is also available upon request.

Spokane Tribe of Indians

P.O. Box 100 • Wellpinit, WA 99040 • (509) 458-6500 • Fax: (509) 458-6575

April 15, 2019

Angela R. Jones
Chief of Staff – Eastern Washington University
129 Showalter Hall
Cheney, WA 99004

Re: Memorandum of Understanding Between the Spokane Tribe of Indians and Eastern Washington University

Dear Ms. Jones,

Enclosed please find two original copies of the Memorandum of Understanding Between the Spokane Tribe of Indians and Eastern Washington University ("MOU") and the Spokane Tribe of Indians regarding, among other things, establishing an Annual Tribal Leadership Summit and a Native American Advisory Board.

The Spokane Tribal Business Council ("Tribal Council") has approved the MOU and Chairwoman Carol Evans has signed on behalf of the Tribe. Please countersign both original copies, keep one original for your records, and return the other to the Tribe via the enclosed self-addressed return envelope. The Tribe looks forward to working with EWU to strengthen the relationship and enhance EWU's educational research and service partnerships and programs.

Respectfully,

Jessica Flett
Legal Counsel
Spokane Tribe of Indians

Encs.

Cc via email:
Chairwoman Carol Evans carol@spokanetribe.com
Nicole DeVon ndevon@ewu.edu

Eastern Washington University

Memorandum of Understanding Between
The Spokane Tribe of Indians and Eastern Washington University

This Memorandum of Understanding ("MOU") is entered into by Eastern Washington University ("EWU") and the Spokane Tribe and signed below, with reference to the following:

EWU recognizes and affirms established Federal policies under which Native American tribal governments are treated as distinct legal and political entities, with their own powers of self-government and self-determination.'

This MOU is being enacted for the purpose of enhancing and sustaining the government-to-government relationship between the Spokane Tribe of Indians and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Spokane Tribe.

EWU and the Spokane Tribe wish to formalize and sustain a structure that strengthens and advances the relationships between them and enhances EWU's educational research and service partnerships and programs involving tribes, American Indian students, and the broader American Indian community.

1. Purpose.

1.1 Based on this MOU, the following will occur to sustain and advance relationships between EWU and the Spokane Tribe:

1.1.1 Establishing an Annual Tribal Leadership Summit. At this government-to government meeting attended by elected tribal leaders and the EWU president, priority initiatives will be identified, discussed, and advanced.

1.1.2 Establishing a Native American Advisory Board ("Advisory Board") composed of tribal representatives, the EWU Vice President for Diversity and Inclusion, as well as appropriate EWU students, alumni, staff, and faculty. This group will address priorities and issues identified at the EWU Tribal Leadership Summit.

1.1.3 The Tribal Business Council of the Spokane Tribe of Indians shall have the authority to appoint one (1) individual of their choosing to serve on the Advisory Board.

1.1.4 Enhancing efforts, particularly through early outreach to middle schools and high schools, to recruit, retain and successfully graduate more American Indian students with university degrees.

1.1.5 Recruiting, retaining, and promoting qualified American Indian faculty and staff at the University in academic and administrative departments to aid EWU in its mission and delivery of services to tribal communities and American Indian students.

1.1.6 Strengthening partnership between tribal communities and EWU academic and student support areas.

1.1.7 Planning and constructing a longhouse-style facility on campus that enhances the recruitment and success of American Indian students, acknowledges and honors the region's tribes, and serves as a place for cultural learning and exchange for the entire community.

1.2 Through this MOU, the preceding priorities will receive sustained attention from EWU and the Spokane Tribe to maintain communication and address shared objectives.

1.3 This MOU will institutionalize, formalize and sustain these important relationships, ensuring that changes in leadership will not diminish the university's commitment to working with the tribe or the tribe's commitment to working with the university.

2. Terms and Working Principles

2.1 The parties entering into this Memorandum of Understanding agree to the following terms and working principles detailed in this section below, which will aid in creating mutual understanding and productive relationships.

2.2 **Unique Legal Status of the Tribe:** The unique legal status of tribes, rights reserved through treaties, agreements, historic and cultural interests, creates a unique relationship between tribes and state agencies, including EWU. Tribes maintain sovereign rights that predate the formation of the United States and the State of Washington and are guaranteed under treaties and federal laws.

2.3 **Government-to-Government:** Federally Recognized Indian Tribes have a special government-to-government relationship with the United States government. Government-to-government is also used to describe the relationship and protocols between tribes and other governments such as states. State agencies and tribes work directly with each other in a government-to-government fashion, rather than as subdivisions of other governments.

2.4 **1989 Centennial Accord:** This Memorandum of Understanding is guided by the *Centennial Accord Between the Federally Recognized Indian Tribes in Washington State and the State of Washington* of 1989. The Centennial Accord is published on the internet by the Governor's Office of Indian Affairs at www.goia.wa.gov/Government-to-Government/CentennialAgreement.html. A corresponding accord between the out-of-state tribes with treaty reserved rights in Washington State can be found at www.goia.wa.gov/Relations/OutOfStateAccord.pdf.

3. Implementation of MOU

3.1 This Memorandum of Understanding will become effective upon the signatures of the parties.

3.2 The parties shall meet and review progress under this agreement on an annual basis, in the format outlined within this memorandum.

3.3 This MOU may be amended by mutual written agreement of the parties at any time.

3.4 Any party may withdraw from this MOU by providing the other parties 30 days' written notice of its intent to withdraw.

The following signatory parties have executed this Memorandum of Understanding:

Spokane Tribe of Indians

Carol Evans

Chair woman

Spokane Tribal Business Council / April 15, 2019

Eastern Washington University

MCullman

President, EWU

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE COEUR D'ALENE TRIBE AND EASTERN WASHINGTON UNIVERSITY

This Memorandum of Understanding ("MOU") is made between Coeur d'Alene Tribe ("the Tribe"), P.O. Box 408, Plummer, Idaho 83851, and the Eastern Washington University ("EWU"), 214 Showalter Hall, Cheney WA 99004, and signed below, with reference to the following:

EWU recognizes and affirms established Federal policies under which Native American tribal governments are treated as distinct legal and political entities, with their own powers of self-government and self-determination.

This MOU is being enacted for the purpose of enhancing and sustaining the government-to-government relationship between the Tribe and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Tribe.

EWU and the Tribe wish to formalize and sustain a structure that strengthens and advances the relationships between them and enhances EWU's educational research and service partnerships and programs involving tribes, American Indian students, and the broader American Indian community.

1. Purpose.

1.1 Based on this MOU, the following will occur to sustain and advance relationships between EWU and the Coeur d'Alene Tribe:

1.1.1 Establishing an Annual Tribal Leadership Summit. At this government-to government meeting attended by elected tribal leaders and the EWU president, priority initiatives will be identified, discussed, and advanced.

1.1.2 Establishing a Native American Advisory Board ("Advisory Board") composed of tribal representatives, the EWU Vice President for Diversity and Inclusion, as well as appropriate EWU students, alumni, staff, and faculty. This group will address priorities and issues identified at the EWU Tribal Leadership Summit.

1.1.3 The Tribal Council of the Coeur d'Alene Tribe shall have the authority to appoint one (1) individual of their choosing to serve on the Advisory Board.

1.1.4 Enhancing efforts, particularly through early outreach to middle schools and high schools, to recruit, retain and successfully graduate more American Indian students with university degrees.

1.1.5 Recruiting, retaining, and promoting qualified American Indian faculty and staff at the University in academic and administrative departments to aid EWU in its mission and delivery of services to tribal communities and American Indian students.

1.1.6 Strengthening partnership between tribal communities and EWU academic and student support areas.

1.1.7 Planning and constructing a longhouse-style facility on campus that enhances the recruitment and success of American Indian students, acknowledges and honors the region's tribes, and serves as a place for cultural learning and exchange for the entire community.

1.2 Through this MOU, the preceding priorities will receive sustained attention from EWU and the Coeur d'Alene Tribe to maintain communication and address shared objectives.

1.3 This MOU will institutionalize, formalize and sustain these important relationships, ensuring that changes in leadership will not diminish the university's commitment to working with the tribe or the tribe's commitment to working with the university.

2. Terms and Working Principles

2.1 The parties entering into this Memorandum of Understanding agree to the following terms and working principles detailed in this section below, which will aid in creating mutual understanding and productive relationships.

2.2 **Unique Legal Status of the Tribe:** The unique legal status of tribes, rights reserved through treaties, agreements, historic and cultural interests, creates a unique relationship between tribes and state agencies, including EWU. Tribes maintain sovereign rights that predate the formation of the United States and the State of Washington and are guaranteed under treaties and federal laws. Nothing in this MOU shall be construed as a waiver of the Tribe's inherent sovereign immunity.

2.3 **Government-to-Government:** Federally Recognized Indian Tribes have a special government-to-government relationship with the United States government. Government-to-government is also used to describe the relationship and protocols between tribes and other governments such as states. State agencies and tribes work directly with each other in a government-to-government fashion, rather than as subdivisions of other governments.

2.4 **1989 Centennial Accord:** This Memorandum of Understanding is guided in the spirit of the *Centennial Accord Between the Federally Recognized Indian Tribes in Washington State and the State of Washington* of 1989. The Centennial Accord is published on the internet by the Governor's Office of Indian Affairs at www.goia.wa.gov/Government-to-Government/CentennialAgreement.html. A corresponding accord between the out-of-state tribes with treaty reserved rights in

Washington State can be found at www.goia.wa.gov/Relations/OutOfStateAccord.pdf.

3. Implementation of MOU

3.1 This Memorandum of Understanding will become effective upon the signatures of the parties.

3.2 The parties shall meet and review progress under this agreement on an annual basis, in the format outlined within this memorandum.

3.3 This MOU may be amended by mutual written agreement of the parties at any time.

3.4 Any party may withdraw from this MOU by providing the other parties 30 days' written notice of its intent to withdraw.

The following signatory parties have exeeuted this Memorandum of Understanding:

Coeur d'Alene Tribe	**Eastern Washington University**
Ernest L Stensgar Ernest Stensgar, Chairman	JKCullinan EWU President Mary Cullinan
07/12/2019 Date	7/26/19 Date

EXECUTIVE OPERATIONS
MEMORANDUM OF UNDERSTANDING
BETWEEN CDA TRIBE AND EASTERN
WASHINGTON UNIVERSITY

CDA RESOLUTION 121 (2019)

WHEREAS, the Coeur d'Alene Tribal Council has been empowered to act for and on behalf of the Coeur d'Alene Tribe pursuant to the revised Constitution and Bylaws, adopted by the Coeur d'Alene Tribe by referendum November 10, 1984, and approved by the Secretary of the Interior, Bureau of Indian Affairs, December 21, 1984; and

WHEREAS, the Coeur d'Alene Tribal Council has a responsibility for the Health, Welfare, and Economic Development of the Tribe and its members; and

WHEREAS, the Coeur d'Alene Tribe is committed to promoting higher education among the tribal membership; and

WHEREAS, the Tribe and the Tribal Liaison to the President of Eastern Washington University (EWU) met to discuss ways to enhance and sustain the government-to-government relationship between the Tribe and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Tribe; and

WHEREAS, the Tribe and EWU have worked together to develop an MOU establishing a Tribal Leadership Summit, a Native American Advisory Board and multiple ways to enhance outreach and recruitment of middle school and high school students on the reservation; and

WHEREAS, the Tribe and EWU shall enter into a Memorandum of Understanding ("MOU") which enhances and sustains the government-to-government relationship between the Tribe and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Tribe; and

NOW, THEREFORE, BE IT RESOLVED, That the Coeur d'Alene Tribal Council hereby approves the MOU with Eastern Washington University to strengthen and enhance the government to government relationship between the Tribe and EWU, and promote higher education in the reservation community; and

BE IT FURTHER RESOLVED, That the Coeur d'Alene Tribal Chairman or his designee is authorized to sign all necessary documents related to this request on behalf of the Coeur d'Alene Tribe.

CERTIFICATION

The foregoing resolution was adopted at a meeting of the Coeur d'Alene Tribal Council held at the Tribal Administrative Building, 850 A Street, Plummer, Idaho, on July 11, 2019, with the required quorum present by a vote of 5 FOR 0 AGAINST 0 ABSTAIN 1 OUT

ERNEST L. STENSGAR, CHAIRMAN
COEUR D'ALENE TRIBAL COUNCIL

DONALD E. SCZENSKI, SEC/TREASURER
COEUR D'ALENE TRIBAL COUNCIL

C010071

Eastern Washington University

Memorandum of Understanding Between
The Kalispel Tribe of Indians and Eastern Washington University

This Memorandum of Understanding ("MOU") is entered into by Eastern Washington University ("EWU") and the Kalispel Tribe and signed below, with reference to the following:

EWU recognizes and affirms established Federal policies under which Native American tribal governments are treated as distinct legal and political entities, with their own powers of self-government and self-determination.'

This MOU is being enacted for the purpose of enhancing and sustaining the government-to-government relationship between the Kalispel Tribe of Indians and EWU, a state agency, within the protocol outlined in the Washington State Centennial Accord and the Kalispel Tribe.

EWU and the Kalispel Tribe wish to formalize and sustain a structure that strengthens and advances the relationships between them and enhances EWU's educational research and service partnerships and programs involving tribes, American Indian students, and the broader American Indian community.

1. Purpose.

1.1 Based on this MOU, the following will occur to sustain and advance relationships between EWU and the Kalispel Tribe:

1.1.1 Establishing an Annual Tribal Leadership Summit. At this government-to government meeting attended by elected tribal leaders and the EWU president, priority initiatives will be identified, discussed, and advanced.

1.1.2 Establishing a Native American Advisory Board ("Advisory Board") composed of tribal representatives, the EWU Vice President for Diversity and Inclusion, as well as appropriate EWU students, alumni, staff, and faculty. This group will address priorities and issues identified at the EWU Tribal Leadership Summit.

1.1.3 The Tribal Business Council of the Kalispel Tribe of Indians shall have the authority to appoint one (1) individual of their choosing to serve on the Advisory Board.

1.1.4 Enhancing efforts, particularly through early outreach to middle schools and high schools, to recruit, retain and successfully graduate more American Indian students with university degrees.

1.1.5 Recruiting, retaining, and promoting qualified American Indian faculty and staff at the University in academic and administrative departments to aid EWU in its mission and delivery of services to tribal communities and American Indian students.

2/1/18

1.1.6 Strengthening partnership between tribal communities and EWU academic and student support areas.

1.1.7 Planning and constructing a longhouse-style facility on campus that enhances the recruitment and suceess of American Indian students, acknowledges and honors the region's tribes, and serves as a place for cultural learning and exchange for the entire community.

1.2 Through this MOU, the preceding priorities will receive sustained attention from EWU and the Kalispel Tribe to maintain communication and address shared objectives.

1.3 This MOU will institutionalize, formalize and sustain these important relationships, ensuring that changes in leadership will not diminish the university's commitment to working with the tribe or the tribe's commitment to working with the university.

2. Terms and Working Principles

2.1 The parties entering into this Memorandum of Understanding agree to the following terms and working principles detailed in this section below, which will aid in creating mutual understanding and productive relationships.

2.2 **Unique Legal Status of the Tribe:** The unique legal status of tribes, rights reserved through treaties, agreements, historic and cultural interests, creates a unique relationship between tribes and state agencies, including EWU. Tribes maintain sovereign rights that predate the formation of the United States and the State of Washington and are guaranteed under treaties and federal laws.

2.3 **Government-to-Government:** Federally Recognized Indian Tribes have a special government-to-government relationship with the United States government. Government-to-government is also used to describe the relationship and protocols between tribes and other governments such as states. State agencies and tribes work directly with each other in a government-to-government fashion, rather than as subdivisions of other governments.

2.4 **1989 Centennial Accord:** This Memorandum of Understanding is guided in the spirit of the *Centennial Accord Between the Federally Recognized Indian Tribes in Washington State and the State of Washington* of 1989. The Centennial Accord is published on the internet by the Governor's Office of Indian Affairs at www.goia.wa.gov/Government-to-Government/CentennialAgreement.html. A corresponding accord between the out-of-state tribes with treaty reserved rights in Washington State can be found at www.goia.wa.gov/Relations/OutOfStateAccord.pdf.

3. Implementation of MOU

3.1 This Memorandum of Understanding will become effective upon the signatures of the parties.

2/1/18

C010071

3.2 The parties shall meet and review progress under this agreement on an annual basis, in the format outlined within this memorandum.

3.3 This MOU may be amended by mutual written agreement of the parties at any time.

3.4 Any party may withdraw from this MOU by providing the other parties 30 days' written notice of its intent to withdraw.

The following signatory parties have executed this Memorandum of Understanding:

Kalispel Tribe of Indians	**Eastern Washington University**
	EWU President Mary Cullinan
2-6-18	2/12/18
Date	Date

2/1/18

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Section 07

SUPPLEMENTAL APPENDICES

A. Sustainability Workshop Summary

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SECTION 07

SUPPLEMENTAL APPENDIX A: SUSTAINABILITY WORKSHOP SUMMARY

A sustainability workshop for the Lucy Covington Leadership House was held on March 20, 2024 and engaged EWU staff with the consultant team. The meeting notes and presentation are included on the following pages.

MEETING MINUTES

PROJECT:	EWU Lucy Covington Leadership House	**PROJECT NO:**	2022407
DATE:	20 March 2024	**FILE NAME:**	
SUBJECT:	**Sustainability Charette Meeting Minutes**		
MEETING DATE:	20 March 2024	**TIME:**	12:30 pm- 2 pm
LOCATION:	https://ewu.zoom.us/j/81900040773		

ATTENDEES:	Eric Budsberg	EWU	ebudsberg@ewu.edu
	Troy Bester	EWU	tbester@ewu.edu
	Kris Jeske	EWU	kjeske1@ewu.edu
	Marijana Misic	Mahlum	mmisic@mahlum.com
	Scheer Chan	Mahlum	schan@mahlum.com
	Nima Motahari	Womer	nimam@wwomer.com
	Tony Janson	Womer	tonyj@wwomer.com
	Cade Egbert	Womer	cade@wwomer.com
	Kenny Hoener	Kartchner	kenny@kartchnerengineering.com
	Layla Lechich	Kartchner	layla@kartchnerengineering.com
COPY TO:	Chad Lang	Womer	chad@wwomer.com
	Wayne Rogers	Womer	wayner@wwomer.com
	Mark Cork	Mahlum	mcork@mahlum.com
	Mark Kartchner	Kartchner	Mark@kartchnerengineering.com

The following represents the architect's understanding of discussions held and decisions reached in the meeting. Anyone with amendments to these minutes should notify the author within five (5) days of the minutes date in order to amend as appropriate.

ACTION ITEMS

> None

ITEM	DISCUSSION	ACTION BY
1.1	Introductions	
1.2	EWU Climate Action Plan & Certification Paths: The team broadly reviewed EWU's 2022-2025 Climate Action Plan, following by discussion of different sustainability certification paths. LEED Certification > Project will be required to meet LEED Silver level certification. Other campus projects were able to achieve Gold level certification, and that can be a target for Lucy Covington Leadership House project. International Living Future Certifications The team broadly reviewed different levels of ILFI Certification systems > EWU noted CORE Green Building Certification may be worthwhile to consider if requirements appear to be in strong alignment with the project > Further review is needed to better understand how this certification compares with LEED Gold level; to understand the level of effort and differences in certifications. > Exploring a certification program alternative to LEED may be of interest to keep up with or surpass other rival universities that are pursuing alternative sustainability certifications.	
1.3	Sustainability Considerations SITE The team discussed ways to reconnect and relate to the natural environment and the surrounding context through baseline and stretch goal lenses. > Baseline: open space, bioretention swales and rain gardens, reduction of het island effect on the project site > Creation of ethnobotanical garden- pilot credit. Medicinal garden has been identified as a desired component of the project. > Stretch goals: permeable paving may be a consideration, but a green roof is not desired as it is not as successful considering the climate. WATER The team discussed ways to rethink how we use water, respect it as a natural resource, and work in harmony with natural water flows. > Baseline use of low flow fixtures and ultra-low flow fixtures acceptable. Waterless urinals have been problematic in the past and should be avoided. > Baseline heat pump water heating systems can be implemented along with hot water assist form water source heat pump units	

combined with hot water recirculation to provide building domestic hot water. This will be explored and

- Stretch goal: Rainwater harvesting, and grey water reuse requires complex systems and space that would be better used in upgraded efficiencies and energy use systems. These will not be pursued unless needed.
- Stretch goal: Advanced water metering of systems to identify possible water saving strategies and solutions to implement was an option to explore.

ENERGY

The team discussed ways to reduce our reliance on carbon intensive energy by designing efficient, low-energy systems and relying on renewable forms of energy.

- Baseline will use high performance HVAC equipment in conjunction with Micro District Ground Source System in combination with decoupled high efficiency DOAS system which will achieve EUI of low 20's.
- Passive cooling via operable windows is seen as problematic due to security and outdoor air conditions that present themselves in the area throughout the year. This would also be problematic with louvered openings and wind sails as well.
- Passive style envelope to help energy usage systems perform at the highest level possible is encouraged.
- Interface between water source heat pumps and domestic water systems to help drop energy usage across systems will help overall system efficiency.
- Stretch goal: Enhanced commissioning can be used to ensure systems are being properly utilized to maximize efficiency. This was a possibility to investigate the project.
- Possible credits for renewable energy power agreements that may already be used on campus. Research will be done to see if this is viable.
- PV panels are desirable, but the team discussed the challenge of power storing to get the project towards net zero, due to both first cost and efficiency loss.

CARBON

Team discussed ways to reduce our reliance on carbon intensive energy by designing efficient, low-energy systems and relying on renewable forms of energy.

- Project would pursue CLT and sustainably sourced lumber to reduce project's embodied carbon impacts.
- Low carbon concrete mix will be another way to reduce overall carbon footprint of the building.

- Team concluded that purchasing carbon offsets is not of interest due to lack of transparency and measurable outcomes.

HEALTH

The team discussed impacts and the relationship of the quality of materials, air and environment on human health.

- Some baseline identified goals are design to Universal Design Principles, incorporating biophilia and access to daylight, but also specifying materials with Declare label.
- Advanced filtration was also brought up using higher efficient filters on DOAS systems as well as the possibility of contaminant mitigation strategies such as ionization, electrostatic filters, UV light or HEPA filtration. This would be on a case-by-case basis and will be coordinated through design and implemented if desired.
- Health can also be increased ventilation to spaces throughout the building while attaining credits. This was not commented on but will be investigated if desired.
- Decreased acoustical reverberation can lead to a better overall environment and will be accounted for in design using duct lining, duct silencers, equipment selection and material systems chosen. This reduces the building “shock” factor when entering space.
- Thermal comfort will be guaranteed through proper zoning and control of HVAC system such that each occupant will have optimized productivity and wellbeing. This was encouraged.

The meeting graphics presented are included in the attached document:

24 0320 Sustainability Charette_presentation.PDF

END OF MEETING MINUTES


Lucy Covington Leadership House
Project Update
March 20, 2024
WOMER
& ASSOCIATES
ARCHITECTS • ENGINEERS
mahlum


Meeting Agenda
Introductions (1min)
EWU Climate Action Plan & Certification Paths (9 min)
Sustainability Goals & Strategies (60 min)
Next Steps (5 min)

Lucy Covington Leadership House
EWU Climate Action Plan

GREENHOUSE GAS REDUCTION STRATEGIES

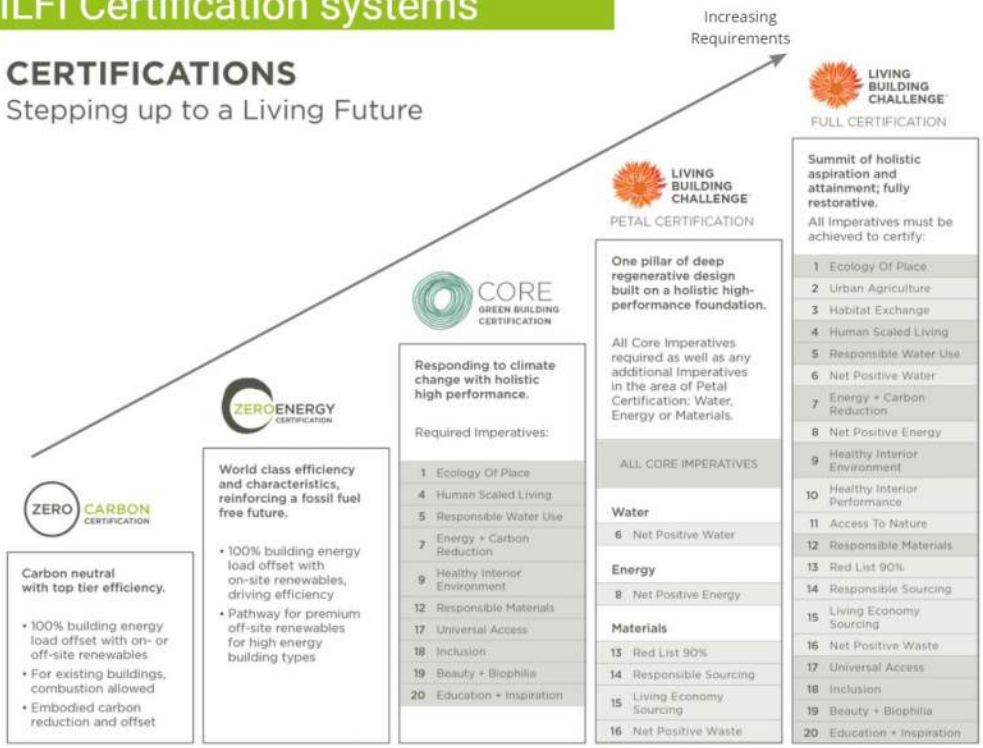
- BUILDING EFFICIENCY
- TRANSITIONING CENTRAL PLANT TO RENEWABLE SOURCES
- LAND RESTORATION
- TRANSPORTATION "GREENIFICATION"

Lucy Covington Leadership House
Sustainability can look different

SITE	WATER	ENERGY	HEALTH	CARBON
Reconnect and relate to the natural environment and the surrounding context.	Rethink how we use water, respect it as a natural resource, and work in harmony with natural water flows.	Reduce our reliance on carbon intensive energy by designing efficient, low-energy systems and relying on renewable forms of energy.	Human health and potential is strongly impacted by the relationship to and quality of materials, air and environment.	Carbon emissions into the atmosphere are a primary driver of global warming and climate change.

LEED NC

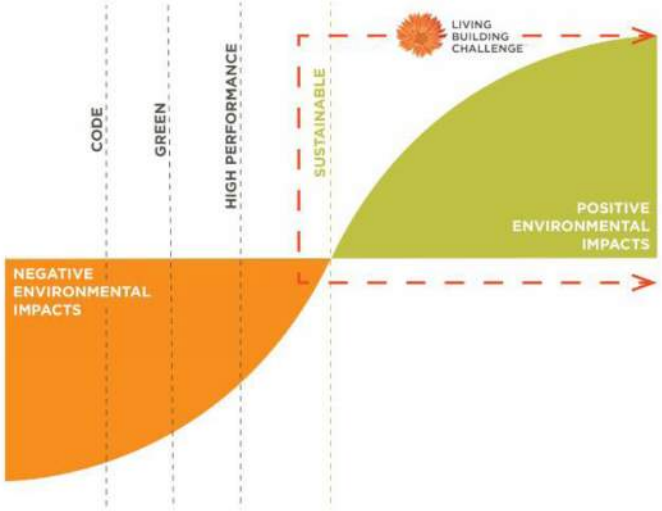
ILFI Certification systems



ILFI Certification systems

SETTING THE IDEAL AS THE INDICATOR OF SUCCESS

THE LIVING BUILDING CHALLENGE IS A PHILOSOPHY, CERTIFICATION, AND ADVOCACY TOOL FOR PROJECTS TO MOVE BEYOND MERELY BEING LESS BAD AND TO BECOME TRULY REGENERATIVE.



12 | Living Building Challenge℠ 4.0

INSTEAD OF A WORLD THAT IS MERELY A LESS BAD VERSION OF THE ONE WE CURRENTLY HAVE- WE ASK A SIMPLE AND PROFOUND QUESTION- WHAT DOES GOOD LOOK LIKE?

Site

Open Space
LEED Credit can be obtained by providing 30% or more of open space for the entire site.

Bioretention Swales / Rain Gardens
These areas to utilize native plants, provide water quality treatment and flow control.

Large Shade Trees
LEED Heat Island Reduction Credit to shad paved areas

Ethnobotanical Garden
Focus on local tribe's native edible plants and their other cultural uses.

Permeable Paving

Green Roof

OPPORTUNITES

Plenty of open space to utilize green space.	Reduce 'Heat Island' with green roof, permeable paving and shade trees.	Opportunity to restore the open space area with native and adapted plants
Utilize all stormwater runoff for rain gardens.	Reduce amount of water used on irrigation	Land restoration & site preservation
Ethnobotanical Garden may be a pilot credit	Permeable paving is viable and may be worth considering.	

CHALLENGES

Cost for permeable pavers / green roof	Maintenance cost of landscaping / permeable pavers / green roof	Green roof is not very viable considering the climate

BASELINE | **STRETCH GOALS** | **DISCUSSION**

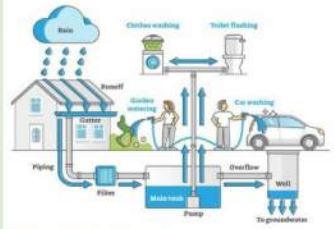
Water

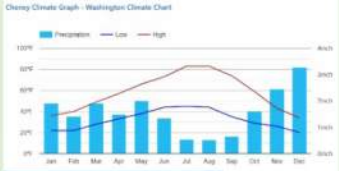
Efficient Plumbing Fixtures
Reduce water demand by selecting low-flow or ultra low flow fixtures

Efficient Hot Water Heating & Recirculation
Reduce hot water consumption by installing high efficient water heaters and circulation pumps

Drought Tolerant / Native Plantings
Select plants that will thrive in the PNW climate all year long

RAINWATER HARVESTING





Rainwater Harvesting
Display rain water catchment systems for educational purposes

Advance Water Metering
Identify opportunities for improvement through fixture metering

Greywater

Grey Water
Used water from sinks, showers, etc. without harsh chemicals

OPPORTUNITES

Rainfall during school year to offset supply fixtures - toilet flush | Capture HVAC condensation for plants - makeup water | Provide energy dashboard to display building performance

Conservation as encouragement to see world as more interconnected, interdependent | Identify possible savings paths through potable water for irrigation, plumbing fixtures & domestic hot water | Water Independence

CHALLENGES

Up front costs and maintenance for water reuse | Storm water capture is not efficient for irrigation in PNW (drought during time of need) | Storage room required for grey water system

Offsetting cost for rainwater collection installation versus budget in lower rain environment | Increased piping throughout building to accomplish taking up valuable space

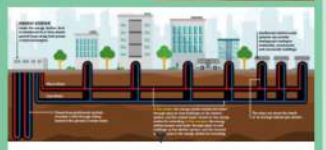
BASELINE | **STRETCH GOALS** | **DISCUSSION**

Energy

Washington State Energy Code
Hi-performance envelope
Reduced plug loads + plug load control
Highly efficient HVAC systems with heat recovery
Highly efficient LED lighting systems with automatic reduction controls

Additional Efficiency Package
More efficient HVAC performance, High efficiency service water heating, enhanced envelope, reduced air filtration, Reduced lighting power, Enhanced digital lighting control, Minimum 40 KW PV array

Luminaire Level Lighting Controls
Reduced power + student engagement



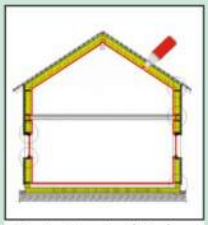
High performance HVAC
Micro district ground source system- constant ground temperature. High system coefficient of performance.

Decoupled - Separating Ventilation and Space conditioning
(Ventilation) Dedicated outdoor air system with heat recovery.
(Space conditioning) Air to water heat pump with heating/chilled water system.

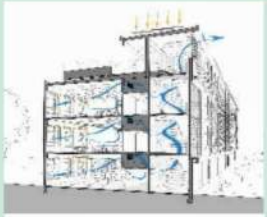
Code	Washington State Energy Code			Seattle Energy Code		
Version	2012	2015	2018 DOAS	2012	2015	2018 DOAS
EUI - BASE	50	48	39	48	42	36
EUI HIGH PERF	17-20					

Similar Past Projects
Energy performance relative to baseline (code) and high performance

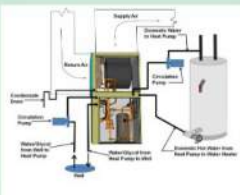
Net Zero Energy (EUI 17-20)
The building produces as much or more energy than it uses
Maximize on-site solar PV & High performance HVAC system.



Passive House Level Envelope
High levels of insulation and high-quality windows. Building airtightness, and minimized thermal bridging.



Passive Cooling
Reduce the amount of mechanical equipment and take advantage of the PNW temperate climate via windows controls tied to HVAC systems



Building/System/Spaces
Look for synergies between systems, spaces to minimize and create effective and efficient system.

Enhanced Commissioning
Commissioning agent to facilitate assistance through design, construction and post construction operation to ensure owner intent and quality is met

Renewable Energy
Reduce environmental and economic impacts through use of renewable energy sources and reduction of fossil fuel energy systems

OPPORTUNITES

Generating systems that support learning for the EWU students and faculty. | Incorporate visible systems (PV, rainwater capacity & usage) Educational/ Conservation | Creating a building that gives back as much as it needs to be built and operate.

Use hybrid systems to maximize energy use potential - water heat assist from WSHP | Increased efficiency DOAS to reduce overall building load for cooling and heating | Future proofing mech - good tight envelope to limit leaks to future environmental change. Also leave

Energy Independence | Enhanced Lighting Control: Color Rendering, Glare Control, Circadian Lighting Design | Equipment Benchmark: Plug loads v. total energy consumption.

Controlled Receptacles: WSEC requires 50%. | Lighting Design will meet LEED v.4 Materia Ingredient Reporting. | Light Pollution Reduction: Minimize consequences of development on wildlife.

CHALLENGES

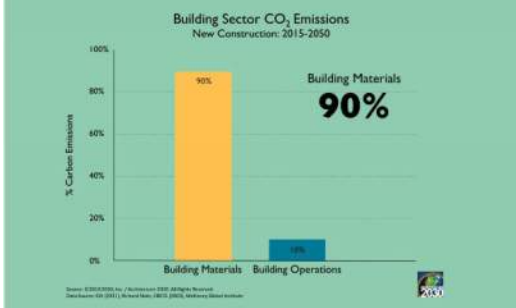
Potential air quality issues for passive cooling / ventilation due to allergens and fire season air quality | Existing soil conditions for ground source - not fully know | Creating balance between project costs and sustainability (high performance).

Spatial Daylight Autonomy: Possible challenges to building design | Net Zero Solar: Cost, Space Constraints, Environmental Impact of Manufacturing & Disposing of Panels. | Electrical Utility Power Grid must still provide power to all loads (may not reduce power plant capacity).

PV Battery Storage System: Efficiency Losses | PV Battery Storage: Approx. 20yr Lifespan | Possible Limitation of 30% Solar Energy Offset based on space constraints. Need for REC's.

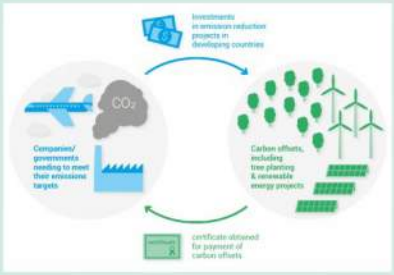
BASELINE | **STRETCH GOALS** | **DISCUSSION**

Carbon



Mass Timber
The use of CLT and heavy timber is advantageous for both the low carbon impact and biophilic design properties.

Low Carbon Conrete
There are enough lower carbon mixes available now that amount to a 30% carbon reduction for little or no additional cost.



Carbon Offsets
purchase carbon offsets to zero out or reduce construction and building operation emissions.

Embodied Carbon - Lucy Covington Leadership House
Potential carbon reductions of 16-26% as compared to other construction types

OPPORTUNITES

CHALLENGES

BASELINE | STRETCH GOALS | DISCUSSION

Health

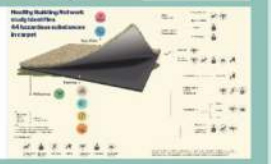
Acoustical Performance
Promote occupant well-being, productivity and communications through acoustic design

Thermal Comfort
Promote occupant productivity and well-being through efficient thermal comfort design

Design for EQUITY
meet ADA requirements and Universal Design Principles

Declare.

Specify responsible and transparent
Set targets and prefer products and manufactures that:
- provide transparency (EPD, Declare, HPD, C2C)
- demonstrate equitable labor practices



Access to daylight & fresh air for all regularly occupied spaces
- Consider operable windows.
- Meet ASHRAE IAQ requirements

Incorporate Biophilia
Connection with nature through natural forms, materials and replicating natural processes.

Local Materials
Within 500 miles or in WA State

Certified Wood
50% FSC in structure, blocking, & finishes

Maximize Indoor Air Quality
Provide strategies to eliminate SBS factors such as more efficient filtration, walk off mats, operable windows, CO2 monitoring and increased outside air ventilation

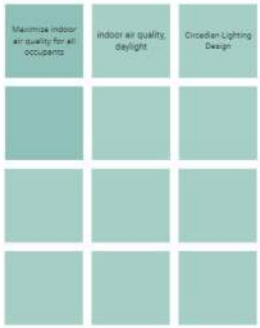
Circadian Lighting Design
-Higher Productivity
-Improved memory & cognitive function
-Better metabolic health
-Improved Mood

Specify Certified:
Red List Free, Living or Petal Certified products & materials (amount per LBC)

Just.

Prefer JUST
Just Diversity certified team members certified workforce / MWBE

OPPORTUNITES



CHALLENGES

BASELINE | STRETCH GOALS | DISCUSSION

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