2020 Census Local Update of Census Addresses Operation (LUCA) Respondent Guide

Instructions for Using the Geographic Update Partnership Software (GUPS)

U.S. Department of Commerce
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United States Census Bureau
4600 Silver Hill Road
Room 4H177
Washington, DC 20233

The Census Bureau issued a *Federal Register Notice* to revise its confidentiality pledge language to address the new cybersecurity screening requirements:

Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data.

INTRODUCTION

A. Background

The 2020 Census Local Update of Census Addresses Operation (LUCA) is a voluntary decennial census operation. LUCA is the only opportunity prior to the 2020 Census for tribal, state, and local governments (including the District of Columbia and Puerto Rico) to review and update the Census Bureau's residential address list for their jurisdiction. The Census Bureau relies on a complete and accurate address list to reach every living quarters and associated population for inclusion in the census. The Census Address List Improvement Act of 1994 (Public Law 103-430) authorizes the LUCA operation. Refer to <https://www.census.gov/geo/partnerships/luca-pl-103-430.html> for more information.

Title 13, United States Code (U.S.C.), provides for the confidential treatment of address information and structure points showing the location of housing units or group quarters. For more information about Title 13, U.S.C., please refer to <https://www.census.gov/history/www/reference/privacy_confidentiality/title_13_us_code.html>. Signed confidentiality agreements and restrictions are required to participate in LUCA. See Appendix A, *Confidentiality and Security Guidelines* or refer to <https://www.census.gov/geo/partnerships/luca.html>.

B. The Census Bureau's Master Address File

The Master Address File (MAF) is a nationwide database of all addresses used to support many of the Census Bureau's operations. Besides containing mailing addresses and ZIP Codes, an address record in the MAF also contains geographic information about the location of addresses. In areas where there are non-city style addresses (e.g., rural route or post office box number), the address record may contain additional information such as a location description.

C. The Topologically Integrated Geographic Encoding and Referencing Database

Address records in the MAF link to road segments or road features in the Topologically Integrated Geographic Encoding and Referencing (TIGER) database. The TIGER database includes the geographic coordinates and names of all streets, water features, other linear features, and boundaries for all jurisdictions and statistical areas (census tracts[1], census blocks[2], etc.) used to tabulate decennial census data.

[1] A **census tract** is a small, relatively permanent statistical division of a county or statistically equivalent entity, delineated for the purpose of presenting Census Bureau statistical data.

[2] A **census block** is a geographic area bounded by visible features, such as streets, roads, streams, and railroad tracks, and invisible features, such as the boundaries of governmental units and other legal entities. Census blocks are the smallest area for which the Census Bureau collects and tabulates statistical information.

D. LUCA Responsibilities

The Census Bureau's LUCA responsibilities include:

- Provide training to LUCA participants.
- Provide the necessary materials to participants.
- Provide assistance to participants.
- Process updates submitted by LUCA participants.
- Review and validate LUCA submissions.
- Provide feedback materials for participant review.
- Provide assistance for participants to resolve any address discrepancies.
- Provide for a formal appeal of disputed addresses by an independent federal agency outside of the Census Bureau and the Department of Commerce.

The LUCA participant responsibilities include:

- Select your LUCA liaison and reviewers. The Census Bureau suggests that individuals in your jurisdiction involved in zoning enforcement, not work on this operation since this may create a conflict of interest.
- Sign and return *D-2002—Registration Form*.
- Read, understand, and agree to abide by *D-2004—Confidentiality and Security Guidelines* including all liaisons, reviewers, and anyone with access to Title 13, U.S.C. materials (See **Appendix A** for the terms of the *Confidentiality and Security Guidelines*).
- Sign and return to the Census Bureau *D-2005—Confidentiality Agreement Form* including the signature of all liaisons, reviewers, and anyone with access to Title 13 materials.
- Complete and return the *D-2006—Self-Assessment Checklist*.
- Complete and return the *D-2003—Product Preference Form*.
- Ensure that everyone working on LUCA understands the procedures for participating in the operation and Census Bureau terminology and concepts.
- Keep Census Bureau addresses and maps showing structure points[3] (housing units and group quarters locations) confidential and ensure they are used only for census purposes.
- Ensure the receipt of all required materials for the LUCA review.
- Prepare a strategy to conduct the review of LUCA materials.
- Complete your address list review and return your updated materials to the Census Bureau within 120 calendar days of receiving your LUCA materials.
- Review the Census Bureau's detailed feedback materials.

[3] A **structure point** is a coordinate location that represents the location of one or more housing units and/or group quarters. Structure points are protected by Title 13, U.S.C. See Appendix A, *Confidentiality and Security Guidelines.*

- Appeal address discrepancies to the LUCA Appeals Office.
- Destroy (preferred method) or return all Title 13 materials to the Census Bureau after the appeal process is complete.
- Verification by the LUCA liaison of the destruction or return of Title 13 materials by signing and returning to the Census Bureau *D-2012—Destruction or Return of Title 13, U.S.C. Materials* Form.
- Sign and date the *D-2012—Destruction or Return of Title 13, U.S.C. Materials* Form required by all LUCA reviewers.

For your convenience, several forms are included in the Appendix and are available on the LUCA Web site at <https://www.census.gov/geo/partnerships/luca.html>. These forms include:

- *D-2001—Contact Information Update Form*—if you need to update LUCA contact information, complete and return this form.
- *D-2004—Confidentiality and Security Guidelines*—provides a detailed explanation for protecting and safeguarding the confidential Census Bureau materials covered by Title 13, United States Code (U.S.C.).
- *D-2005—Confidentiality Agreement Form*—if your LUCA Liaison changes or to add additional reviewers complete and return this form.
- *D-2011—Inventory Return Form*—return this form with your address and feature updates.
- *D-2012—Destruction or Return of Title 13 Materials Form*—use this form at the conclusion of the LUCA operation to inform the Census Bureau that the LUCA liaison has destroyed or returned all Title 13 materials.

E. The Geographic Update Partnership Software Respondent Guide Organization

Geographic Update Partnership Software (GUPS) is a customized geographic information system (GIS) provided by the Census Bureau. Based on an open-source platform known as QGIS, GUPS is an easy-to-use software designed to meet the needs of LUCA participants without extensive GIS experience. It replaces the MAF/TIGER Partnership Software (MTPS) previously used in 2010 LUCA. (If you would like more information on the QGIS open-source platform, refer to <https://www.qgis.org/en/site/>.)

Use this respondent guide in conjunction with the *2020 Census Local Update of Census Addresses Operation (LUCA) Respondent Guide, Digital Address List Format* (hereafter referred to as the *Digital Respondent Guide*) included in your package. The *Digital Respondent Guide* includes:

- LUCA Overview (specifies the guidelines and requirements for the LUCA).
- A suggested workflow.
- Information specific to reviewing and updating various types of geographic entities.
- How to add, delete, and modify addresses.
- The methods available to validate your address changes before submission.
- How to submit files using the Secure Web Incoming Module (SWIM).

Additionally, the *Digital Respondent Guide* provides scenarios and examples of address edits you may run into during your review. Use the *Digital Respondent Guide* scenarios in conjunction with this GUPS guide functionality to perform specific scenarios.

This document contains the technical directions for using GUPS, giving step-by-step instructions for how to:

- Obtain and install the GUPS application.
- Load Census address lists and shapefiles into GUPS.
- Import your own data files into GUPS.
- Correct and update the Census Address List.
- Validate your changes and create output files in GUPS.
- Export zip files for submission.

Hyperlinks appear as bold, underlined, light-blue text, are included throughout the documentation where appropriate. Bolded links will connect you to the step-by-step instructions to a specific topic, text, or table with related content.

Note: **GUPS is continuously being updated and revised**. As a result, you may notice some discrepancies between the appearance of individual screens used in examples in this guide, especially in regards to polygon colors on the maps and the appearance of specific buttons. Other small variations may also appear.

F. Training and Technical Support

Training workshops provide instruction on using the LUCA materials. In addition, self-training aids and webinars are available online at the LUCA Web site at <www.census.gov/geo/partnerships/luca.html>.

Note: If you need additional information or assistance, please call **1-844-344-0169** or email **geo.2020.luca@census.gov**.

Table 1: LUCA Schedule

Date	Event
January 2017	Advance notice mailed to Highest Elected Officials (HEO), Tribal Chairs (TC), and other LUCA contacts.
March 2017	LUCA Promotional Workshops begin.
July 2017	LUCA Invitation and Registration materials mailed to HEOs, TCs, and Governors.
October 2017	LUCA Training Workshops begin.
February-April 2018	Participants receive their LUCA materials.
March-September 2018	Census Bureau processes LUCA submissions.
April 2018-May 2019	Census Bureau validates 2020 LUCA addresses.
August-September 2019	Census Bureau delivers feedback materials to participants for review.
April 1, 2020	Census Day.

CHAPTER 1: GETTING STARTED

This guide contains directions on how to use the tools available within the GUPS application, as well as step-by-step instructions for how to carry out specific address updates (e.g., additions, deletions, edits, etc.). Refer to *Chapter 4 Reviewing and Updating the Address List and Paper Maps* in the *Digital Respondent Guide* for further details on using the actions codes to make updates to the Census Address List.

This section includes information needed to use the GUPS. It offers a description of the GUPS application and gives specific instructions for how to install GUPS.

Your GUPS LUCA materials package includes three data discs. GUPS will prompt you to insert the disks in sequence. You must use the discs provided for GUPS to operate correctly.

1) A GUPS software installation disc.
2) A Title 13 Data Disc (DISK1of2.exe)—contains the Census Address List.
3) A Non-Title 13 Data Disc (DISK2of2.exe)—this executable file contains:
    a. The Address Count List.
    b. The digital maps (TIGER partnership shapefiles).

Additionally, the root directory contains:

    c. The *2020 Census Local Update of Census Addresses Operation (LUCA) Respondent Guide: Instructions for Using the Geographic Update Partnership Software (GUPS)*.
    d. The *2020 Census Local Update of Census Addresses Operation (LUCA) Respondent Guide: Digital Address List Format*.
    e. A header template file.
    f. A fillable Inventory Form for the Submission of LUCA Materials.
    g. A Readmefirst6.txt file.

The GUPS option automatically creates a folder directory on your computer for both address list and shapefiles, and copies them into it. By doing this, GUPS will not run into problems trying to locate data on your computer.

Before beginning the installation, check your computer (using **Table 2**) to verify that it has the capabilities needed to run GUPS.

1.1 System and Hardware Requirements

You can use GUPS on a desktop PC or a network environment. **Table 2** lists the hardware and software requirements to install and run GUPS. Also included are the software requirements to play training videos available within the application and submit files through the SWIM website.

Table 2: GUPS Hardware and Software Requirements

Hardware	Operating System	Browser
Disk Space Needed to Run GUPS: 1.3 GB **Disk Space Needed to Store Shapefiles:** Shapefile sizes vary. To view the size of your shapefiles, select a file/ folder, right-click, and choose Properties in the drop-down menu. The Files Properties box opens and displays the file/folder sizes. Select multiple files/folders in the list to view their properties via the same method. **RAM:** • 4 GB minimum recommended	**Windows:** To run GUPS, you need one of the following Windows operating systems: • Windows XP • Windows Vista • Windows 7 • Windows 8 • Windows 10 **Apple Mac OS X:** Mac OS X users must secure a license for Microsoft Windows and use a Windows bridge. The suggested bridge software is Boot Camp, which comes pre-installed on all Mac computers. See instructions for using Boot Camp at: <https://www.apple.com/support/bootcamp/getstarted/> **Note:** Since Boot Camp requires you to restart your computer to set up the bridge, be sure to print the instructions provided at the URL above before you begin.	**Minimum Browser Versions to Play Training Videos:** • Internet Explorer 9 • Google Chrome 3 • Mozilla Firefox 3.5 • Apple Safari 4 **Minimum Browser Versions to Use SWIM:** • Internet Explorer 8 • Google Chrome 3 • Mozilla Firefox 3.5 • Apple Safari 4.1.3

Depending on the Windows OS version, the GUPS dialog boxes may have a different appearance than the screenshots contained in the respondent guide, however, the content is the same.

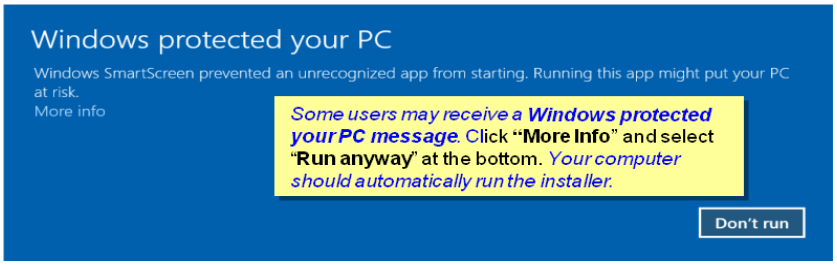
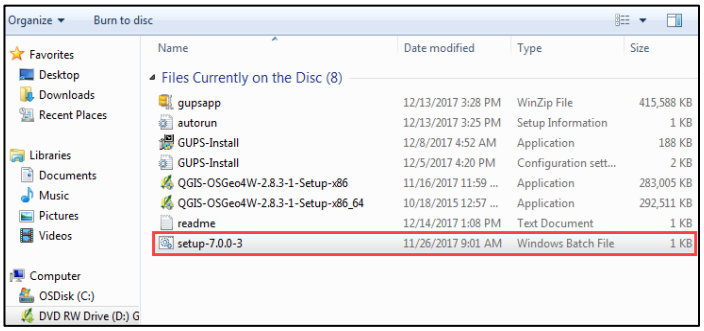
Note: If your computer is equipped with hibernation, please ensure that hibernation is set to at least 20 minutes.

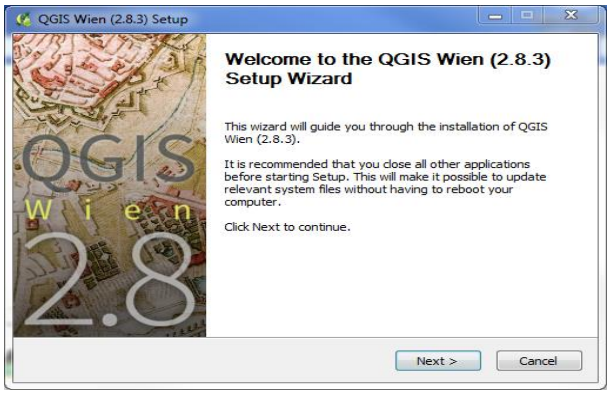
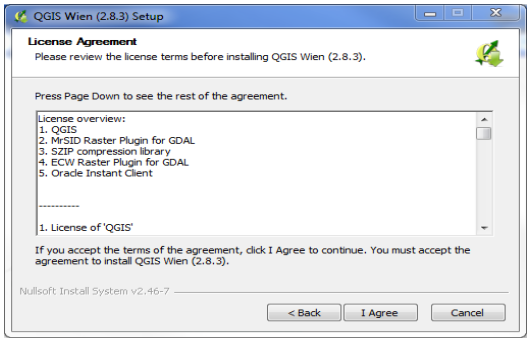
See **Appendix A, Section A4 Security Guidelines** for information on computer and password requirements while using GUPS and Title13 confidential data.

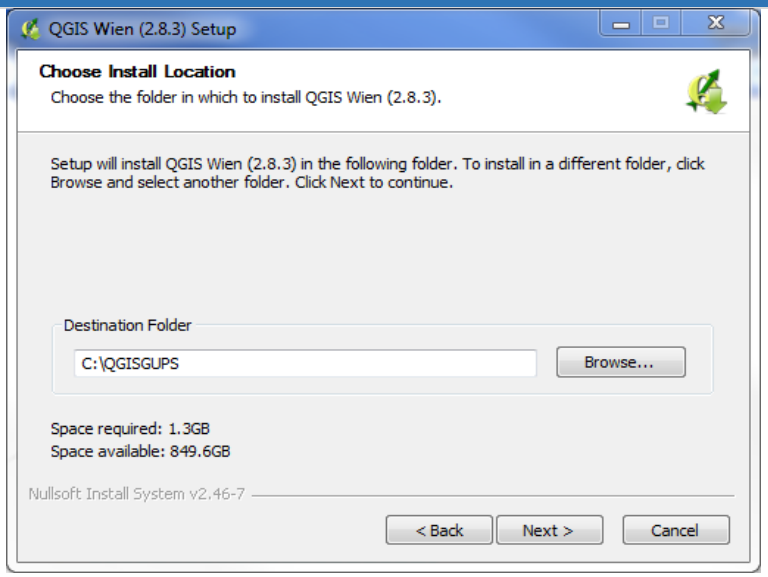
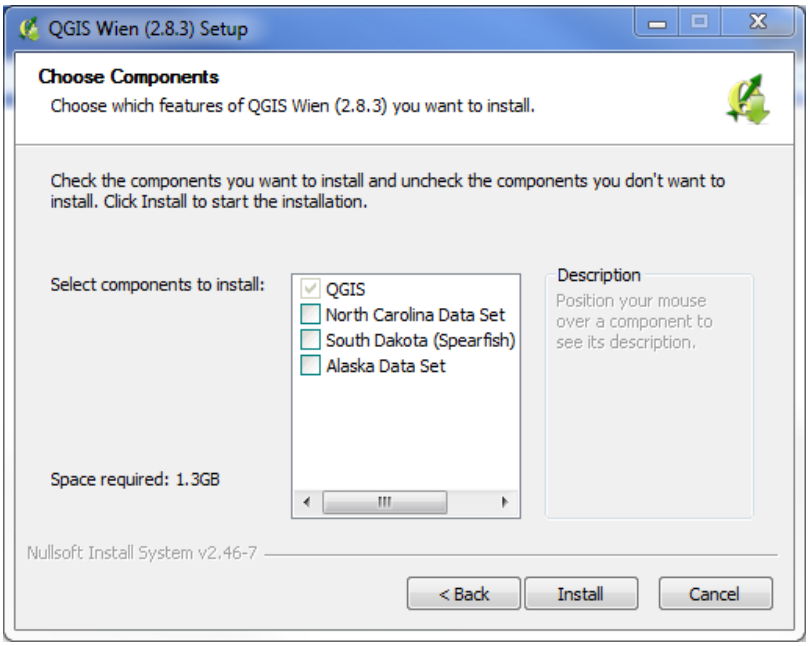
1.2 How to Install GUPS

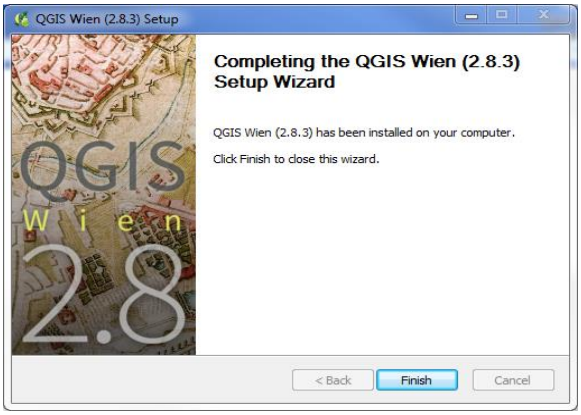
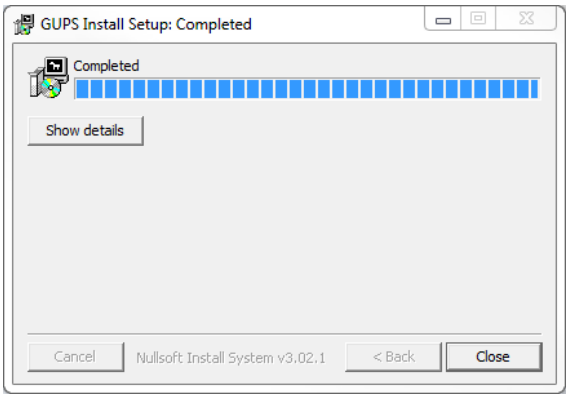
If you already have GUPS loaded, please make sure you are using the most current version. Compare the version on your computer with the one provided on the Census Bureau's installation disc to acquire the latest version. To complete the installation, follow the steps in **Table 3**.

Table 3: Install the GUPS Application

Step	Action and *Result*
Step 1	Place the installation disc into your computer's CD/DVD drive. *A **Windows protected your PC** pop-up box may appear.*  To continue, click **"More info",** then select **"Run anyway**.""
Step 2	If you receive a User Account Control pop-up that asks, "Do you want to run this file?" "Do you want to allow the following program from an unknown publisher to make changes to this computer?" or a similar query, click **Run**, **Yes**, **Allow**, or an option that allows you to proceed. *The software should begin to run automatically.* See the example below.
Step 3	If the software does not run automatically, open Windows Explorer, navigate to your CD/DVD drive, and double-click on the file named ***setup-7.0.0-3***.  If the software still does not run properly, contact your System Administrator for assistance.

Step	Action and *Result*
Step 4	*When the installer opens, the **Welcome to the QGIS GUPS Setup Wizard** screen appears.*  (**Note:** The number in the screen title version you see will be 2.8.3 or greater.) Before proceeding, close all other programs or applications you have open. Once other programs and applications are closed, click the **Next** button.
Step 5	*The **License Agreement** screen appears*.  Read the **License Agreement** and click the **I Agree** button to continue.
Step 6	*The **Choose Install Location** screen opens.* The **Browse** button on this screen allows you to browse your computer for installation location. We recommend that you install the application at the default location.

Step	Action and *Result*
	 To begin the installation, click the **Next** button to continue.
Step 7	*The **Choose Components** screen opens*.  ☑QGIS in the **Select components to install** field is grayed out since it is the default. You do not need to select it, click the **Install** button to continue.
	If you want to review a previous screen or reread the license agreement, click the **Back** button (each screen contains this button). *This returns you to the previous screen*.

Step	Action and *Result*
Step 8	The software takes approximately 5 to 10 minutes to install. *When it is finished, the **Completing the QGIS GUPS Setup Wizard** screen opens.*  To complete the installation, click the **Finish** button at the bottom of the **Completing the QGIS GUPS Setup Wizard** screen.
Step 9	 *Once the application installs, a blue QGIS icon appears on your desktop*.

1.3 GUPS Help

For supplemental information on functions within GUPS that are specific to QGIS, refer to the QGIS user's manual at: <https://docs.qgis.org/2.8/en/docs/user_manual/index.html>. The QGIS manual offers helpful information on several actions not described in detail in this guide, including working with user-provided data layers, and creating customized coordinate systems.

For questions concerning technical problems with the GUPS application, please call 1-844-344-0169 or email geo.2020.luca@census.gov .

CHAPTER 2: INTRODUCTION TO GUPS

After successfully installing GUPS, you are ready to start your LUCA address review.

- If you wish to practice using GUPS without committing the changes you make, simply exit the system without saving. Before the system closes, it will give you the option to discard the changes.
- If you feel comfortable with the system, but you do not want to make all your changes in one session, simply save your changes, then close the system. When you open GUPS later, it will allow you to reopen the project and continue working.

2.1 How to Open GUPS and Start a New Project

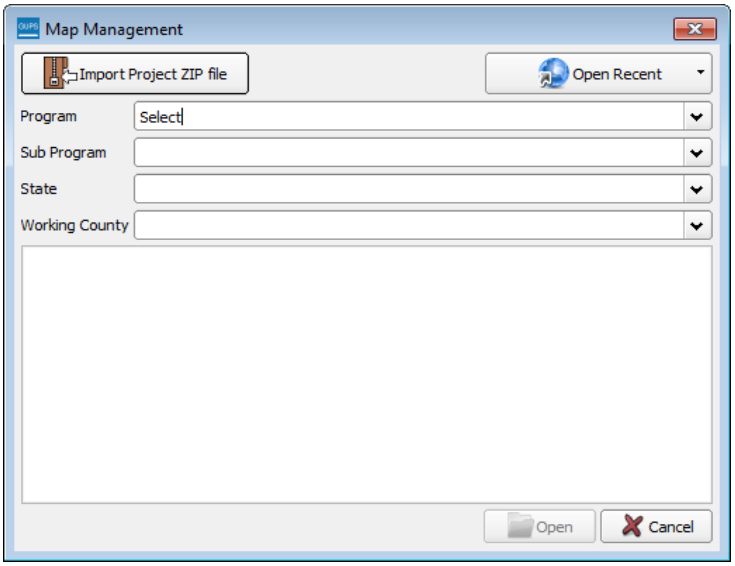
To open the GUPS application and begin your LUCA address updates, follow the steps in **Table 4** below. Before beginning, note that you will need the following to begin your updates:

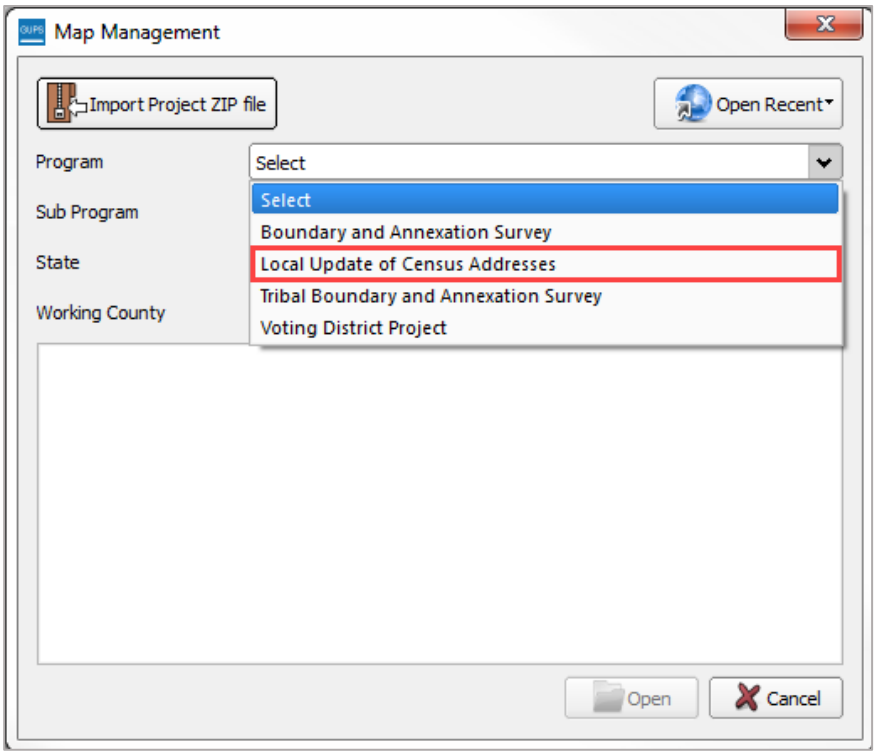
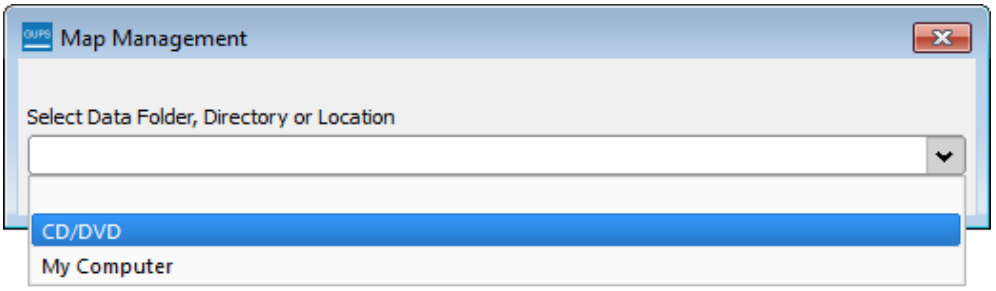
1. The Title 13 Data Disc (DISK1of2.exe) contains the Census Address List.
2. Your Encryption Key, received in a password letter separate from your LUCA materials.
3. The Non-Title 13 Data Disc (DISK2of2.exe) which contains the Address Count List and shapefiles for your jurisdiction.
4. You will need at least 2 GB free on your hard drive during the installation.

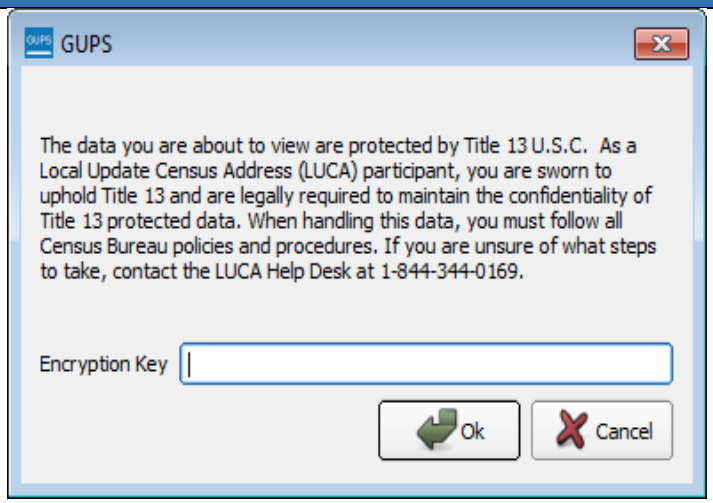
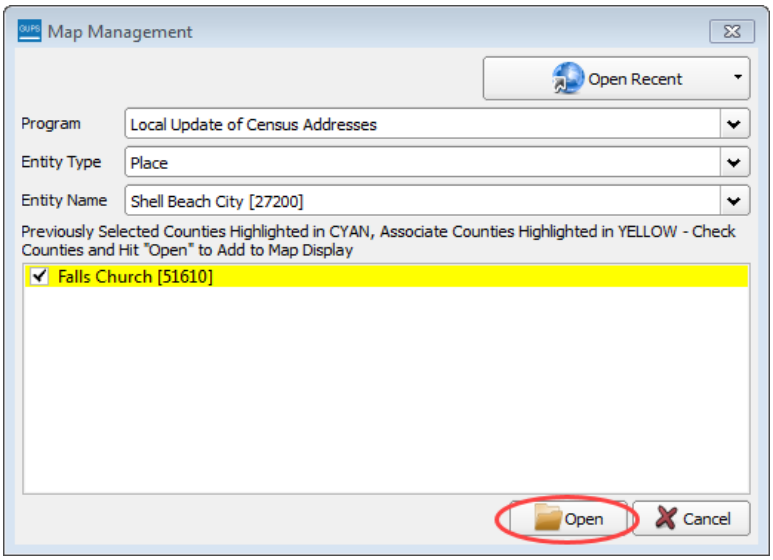
Note: In all the Action/*Result* tables, the action is usually a command or action you need to perform and the Result(s) of the action will be shown in italics. For example: if you click the QGIS icon on your desktop, *the software should begin to run automatically.*

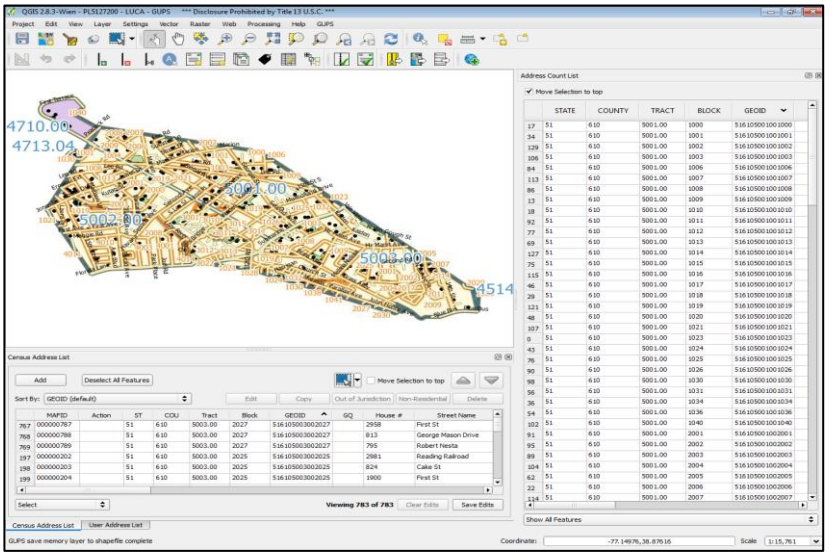
Table 4: Open GUPS and Start a New Project

Step	Action and *Result*
Step 1	Double-click the **QGIS Desktop** icon on your desktop. *The QGIS splash screen appears*. (**Note:** QGIS provided the open-source platform for building GUPS.)

Step	Action and *Result*
Step 2	Wait until the application loads (If you have an older computer, this may require a few minutes). *When the GUPS application has loaded, the GUPS main page opens, and the **QGIS Tips!** box appears*. **Note:** Since QGIS provided the open-source platform for building GUPS, you may see references to QGIS in several locations within the GUPS application.
Step 3	If you wish to view QGIS system tips, click the **Next** button to read the first tip. Use the **Previous** and **Next** buttons to navigate within tips. If you do not wish to see tips again, click the checkbox in the bottom left-hand corner that states ***I've had enough tips, don't show this on start up any more!***
Step 4	To begin a GUPS project, close the **QGIS Tips!** box by clicking the **OK** button. *The box closes and the **Map Management** dialog box opens, as shown below.* 

Step	Action and *Result*
Step 5	In the **Map Management** dialog box, use the drop-down menu next to the **Program** field to select your program, **Local Update of Census Addresses.** (Alternatively, if you are reopening a project you started, select the **Open Recent** drop-down. From there, you may select any previously started project.) 
Step 6	After you select the Program, *the **Select Data Folder, Directory or Location** box opens*.  Select **CD/DVD** from the drop-down menu.
Step 7	After selecting CD/DVD, GUPS prompts you to insert the Title 13 Data Disc (DISK1of2.exe) which contains the Census Address List. After selecting the **OK** button, GUPS prompts you to input your **Encryption Key**, which you received in a password letter separate from your LUCA materials.

Step	Action and *Result*
	 After inputting your **Encryption Key** and selecting the **OK** button, GUPS prompts you to insert the Non-title 13 Data Disc (DISK2of2.exe) which contains the Address Count List and shapefiles for your jurisdiction. Select the **OK** button after inserting the DVD. **Note:** If the data does not load, you may need to free up disk space (locally). You need at least 2 GB free on your hard drive during the installation. Please keep in mind that Title 13, U.S.C. protects this data.
Step 8	Once the Non-title 13 Data Disc (DISK2of2.exe) data has loaded, you will see the Entity Type, Entity Name, and any counties associated with your jurisdiction displayed in the window.  (Training—Fictitious Information) Check the box next to the county/counties you would like to start reviewing, and select the **Open** button.

Step	Action and *Result*
	If your entity is in multiple counties, it may be helpful to perform your review of each county individually to enhance performance.
Step 9	The map, Census Address List, and Address Count List display on your screen.  (Training—Fictitious Information)
	If you have trouble loading data, please call the LUCA help desk at 1-844-344-0169.

2.2 GUPS Main Page

Figure 1 shows the layout of the GUPS main page. This page contains all the tools needed for making LUCA updates. You complete all work from this page.

Figure 1 shows the main page elements. These include the:

1. Map View (where the data display).
2. Standard toolbar.
3. LUCA toolbar.
4. Address Lists (Census Address List, User Address List tab).
5. Address Count List.
6. Status Bar (at bottom of page).

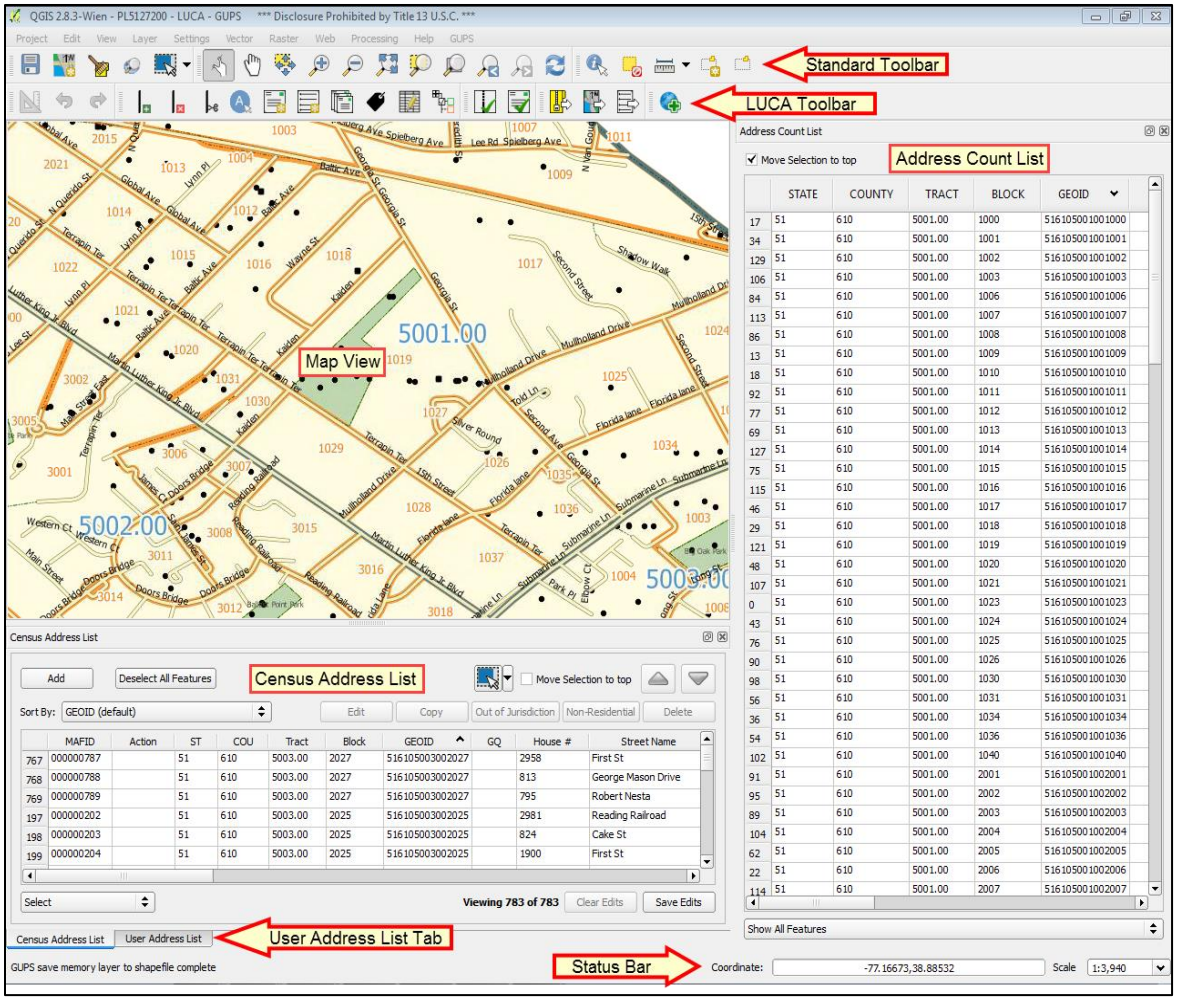
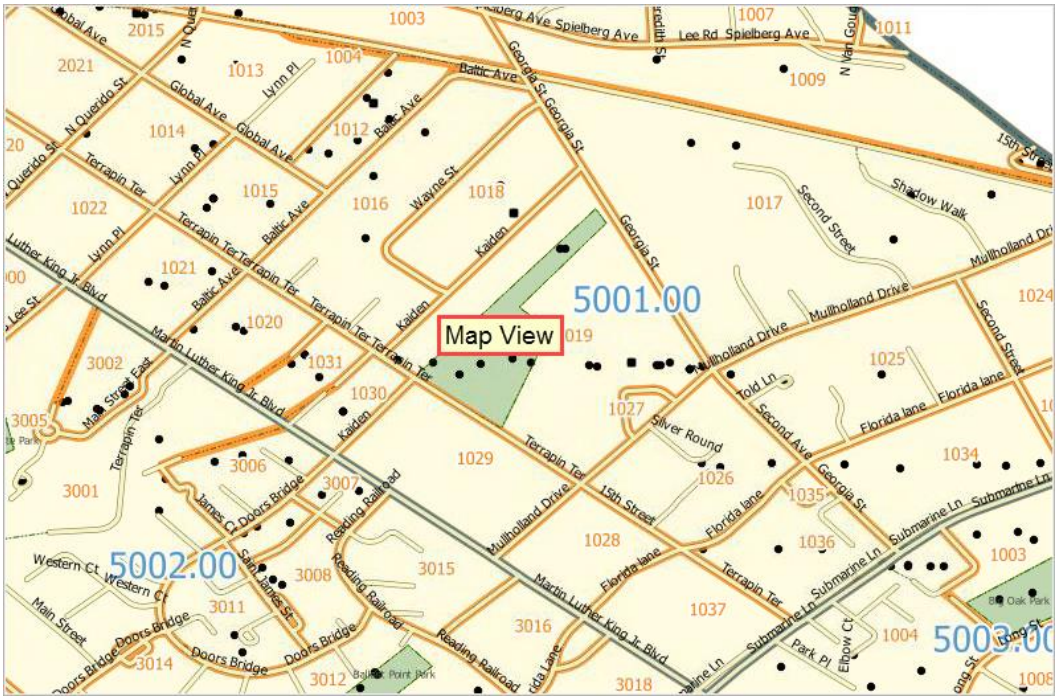
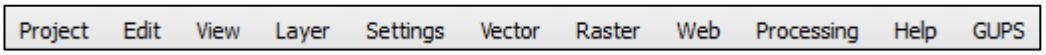


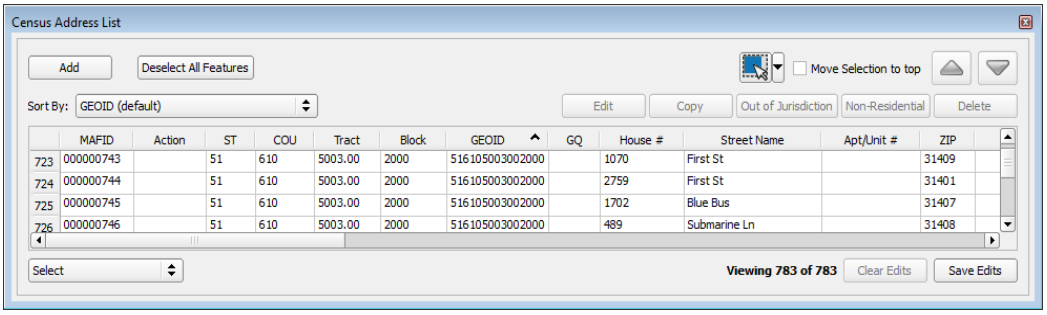
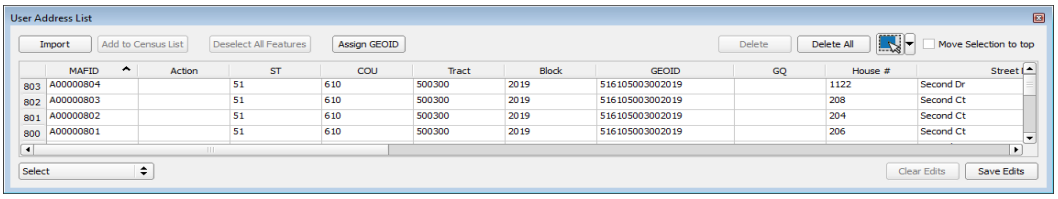
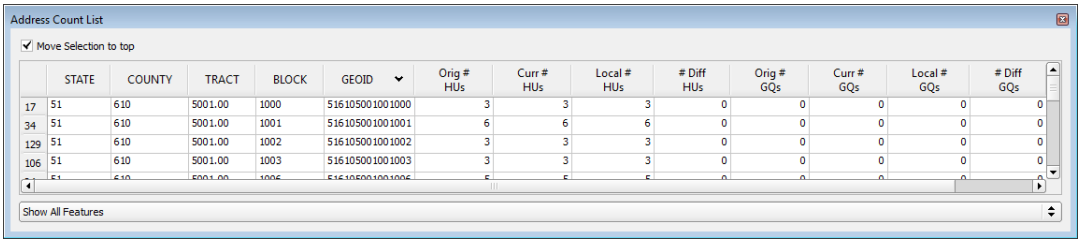
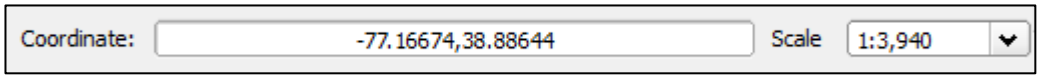
Figure 1. GUPS Main Page Layout (Training—Fictitious Information)

Table 5 explains the purpose for each element on the GUPS main page.

Section 2.2.1 through **Section 2.2.6** describe in detail the individual components and specific functions of each element.

Table 5: GUPS Main Page Elements

Page Element	General Function
Map View	The Map View displays the data for the entity you selected in the **Map Management** dialog box.  (Training—Fictitious Information)
Menu	Offers basic features such as **Settings** and **Help**; tools to manage the Map View and import user-provided data; important calculation, measurement, and geoprocessing tools; and tools needed to make shapefile updates. Note that almost all of the functions available from the **Menu** are also available in the application's conveniently located toolbars. 
Standard Toolbar	Provides navigation tools and other tools needed to interact with the Map View and layers' attribute tables.
LUCA Toolbar	Gives the specific tools needed to make LUCA updates, view linear feature attributes, review and validate changes, export zipped files, and print.

Page Element	General Function
Census Address List	Contains all of the residential (city style and non-city style) addresses known to the Census Bureau within your jurisdiction. You can manipulate the Census Address List in a variety of ways to simplify your review.  (Training—Fictitious Information)
User Address List	Provides a way for you to import your own list for viewing and editing.  (Training—Fictitious Information)
Address Count List	Used for reference, contains all of the residential (city style and non-city style) addresses for your jurisdiction that are currently recorded by the Census Bureau. The list will contain the number of geocoded housing unit and group quarters addresses on your address list.  (Training—Fictitious Information)
Status Bar	Displays information on the map scale, projection, and coordinates and allows you to adjust the display. 

2.2.1 Map View and Table of Contents

The Table of Contents does not automatically open when you start a project. To open the Table of Contents, select the Table of Contents button from the LUCA toolbar. When you choose your program and geography in the Map Management dialog box, GUPS automatically loads a set of default data layers (and default layer groups) defined by the Census Bureau for the program you selected. As the map opens in Map View, the list of the preset layers (already grouped) appears in the Table of Contents.

Use the Table of Contents, and the small toolbar appearing at its top, to manage your Map View.

Note: The Table of Contents and the Map View windows are interdependent. The Map View display immediately reflects the selections you make in the Table of Contents. You can close the Table of Contents at any time to see more of the Map View (click on the small 'x' in the upper right-hand corner of the Table of Contents screen).

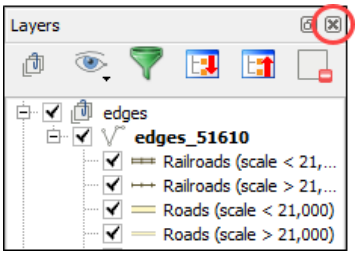


Figure 2. Layers Table of Contents

2.2.1.1. Managing the Map View from Within the Table of Contents

Within the **Table of Contents**, you can manage layer visibility (i.e., determine what layers display on the map), reorder data layers, and set new layer symbology.

2.2.1.2. Manage Layer Visibility

To add or remove layers from the Map View:

Click the checkbox next to a layer to add it to the Map View.

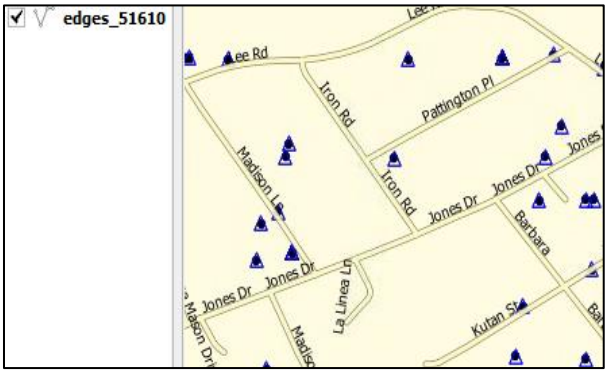


Figure 3. Check a Checkbox to Add a Layer (Training—Fictitious Information)

Uncheck the checkbox next to a layer to remove it from the view.

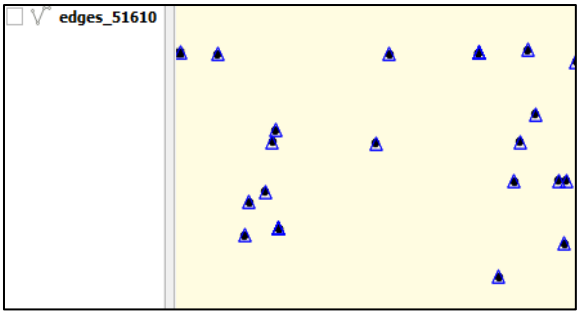


Figure 4. Uncheck a Checkbox to Remove a Layer (Training—Fictitious Information)

2.2.1.3. Reorder Data Layers

In the **Table of Contents**, the layer order determines how the layers display on the map. The top layers display on top of those below them. To change the display order:

1. Left-click on the layer name.
2. Hold down the mouse button and drag the layer to the desired position in the list.
3. Release the mouse button to place the layer in its new position. The map display reflects the new layer order in the **Table of Contents**.

2.2.1.4. Expand/Contract Table of Contents Menus

- To expand or contract the menu for a layer or layer group, click on the '+' sign to expand the group:

Figure 5. Expanding the Edges Group

- When you click the '+' sign next to the layer name, *the layer's submenu opens.*

Figure 6. The Edges Submenu Open

- When you click the '+' sign next to any of the submenu blocks, additional submenus open:

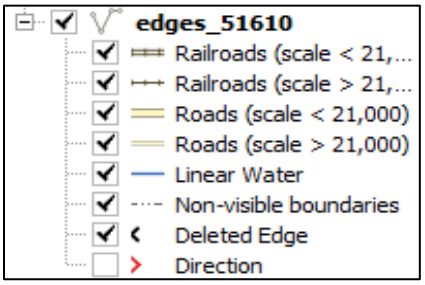


Figure 7. Opening Additional Submenus

- When you click the '-' sign next to the layer name, the submenu(s) closes:

Figure 8. Closing the Submenus

2.2.1.5. Set Layer Symbology and Labels

GUPS loads a default layer symbology established for each Census Bureau geographic partnership program. You can change the default symbology and labeling to suit your preferences. To change the default symbology for a layer in GUPS, follow the instructions in **Appendix C, Section C3 Resetting Layer Symbology**. Although loaded with default symbology specific to LUCA, you can edit all layer symbology to assist you in reviewing your materials.

2.2.1.6. Using the Table of Contents Toolbar to Manage Layers

Using the buttons on the toolbar located at the top of the **Table of Contents**, you can add and remove layers or groups, manage layer visibility, filter the legend by map content, expand or contract all sections of the **Table of Contents** list at once, and group layers.

The **Table of Contents** toolbar contains the items shown below:

Figure 9. Table of Contents Toolbar

Table 6 describes the function of each of the buttons on the toolbar.

Table 6: Table of Contents Toolbar Buttons

Button	Name	Function / Description
	Add Group	Allows you to organize layers in the **Table of Contents** into groups.
	Manage Layer Visibility	Allows you to preset views in the **Table of Contents**.
	Filter Legend by Map Content	Removes layers from the **Table of Contents** that are not currently in the **Map View** extent. This feature ensures that the **Table of Contents** does not contain entries for items not currently in the Map View.

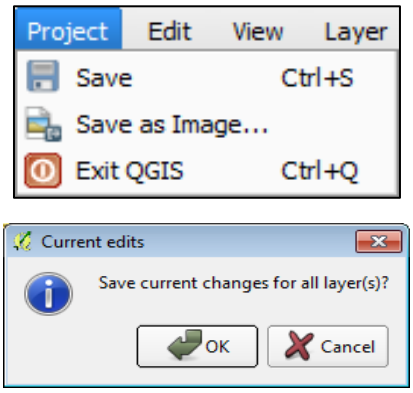
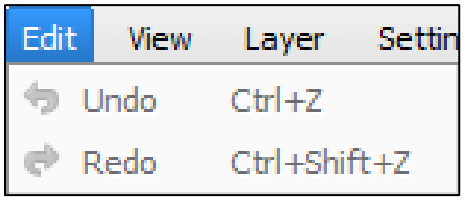
Button	Name	Function / Description
	Expand All	Expands the **Table of Contents** menus (+) to display all layers under each group's menu.
	Collapse All	Collapses the **Table of Contents** menus (-) to show only groups.
	Remove Layer/Group	Allows you to remove a layer or group from the **Table of Contents**.

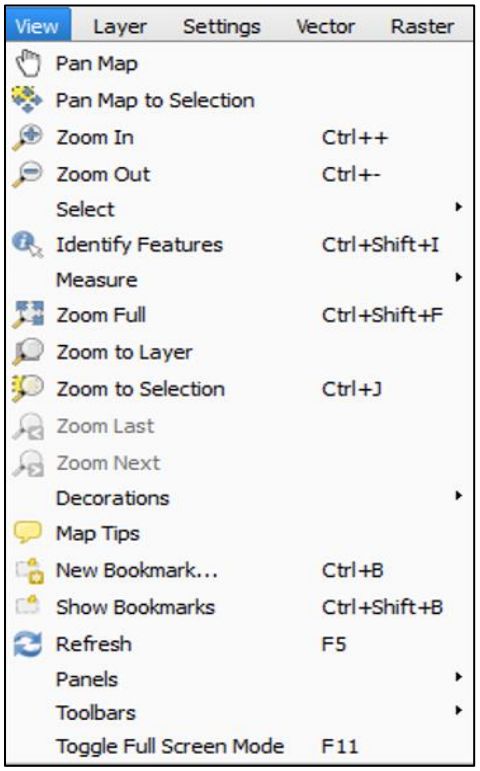
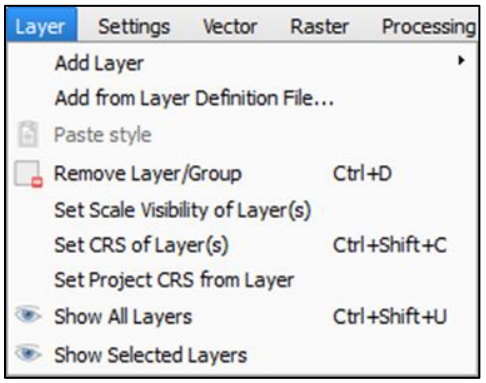
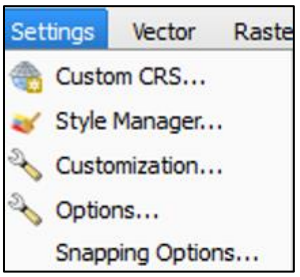
For instructions on how to use each of these tools, please refer to **Appendix C, Section C5 Table of Contents Toolbar**.

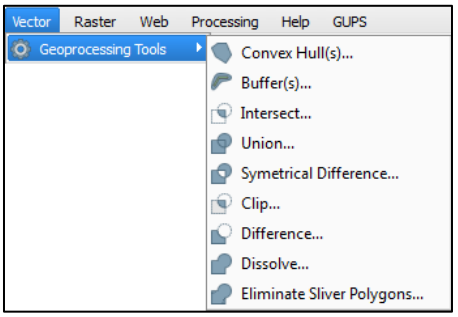
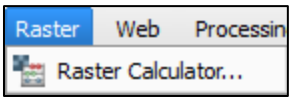
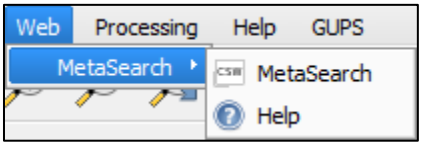
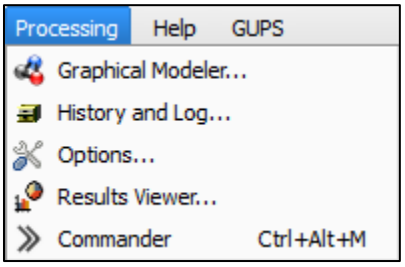
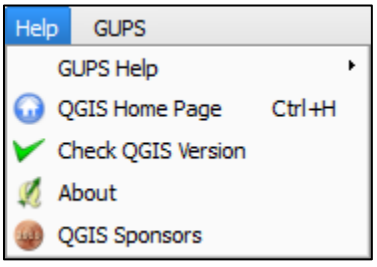
2.2.2 Menu Toolbar

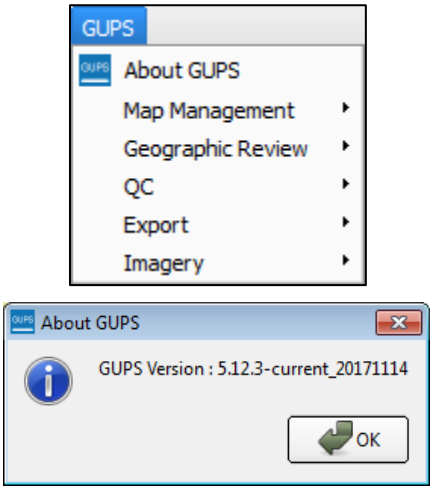
Table 7 below defines each of the tabs on the **Menu** toolbar, provides an image of the drop-down options for each, and describes each tab's function.

Table 7: Menu Toolbar Tabs and Their Functions

Tab	Drop-down Menu	Function / Description
Project		From the **Project** tab, you may save a project. Click on **Save as Image** to create an image file of the map in the **Map View**, or exit the application. If you click **Save as Image**, GUPS allows you to select a file type for the image (.png, .jpg, .tif, etc.), name the file, and save it to any location on your computer.
Edit		From the **Edit** tab, you may **Undo** your last action or **Redo** the action (if you selected **Undo** and then changed your mind). **Note:** For **Undo** to work, you must select the correct layer in the **Table of Contents**. For example, if you added a linear feature in the **Edges** layer, then closed the layer and opened the **Census Addresses** layer, **Undo** will not delete the linear feature. You must reselect the **Edges** layer to undo the linear feature's addition. **Note:** You may undo multiple actions within a layer (e.g., the addition of several linear

Tab	Drop-down Menu	Function / Description
		features) provided you have not yet saved. Saving an action, disables **Undo**.
View		The **View** tab allows you to complete several actions also available on the **Standard** toolbar. Included are options for navigating the map, identifying feature attributes, measuring distance, and creating spatial bookmarks to return to the same **Map View** later.
Layer		The **Layer** tab allows you to add and remove layers from the map, open the layer attribute table, set the map projection or Coordinate Reference System (CRS), display or hide layers. **Note:** Many of these same functions are located on the **Add Layers** toolbar and the small toolbar at the top of the **Table of Contents.**
Settings		The **Settings** tab allows you to customize the CRS and map display options and set snapping tolerances (see instructions below this table). **Note:** Snapping Tolerances - Snapping tolerances in GUPS are pre-defined by layer (e.g., the default tolerance for edges is set to 15 pixels). When making corrections, you may want to adjust the snapping tolerances for a

Tab	Drop-down Menu	Function / Description
		layer or layers. To do this, refer to **Table 42** for directions.
Vector		The **Vector** tab provides access to several tools that will aid you in the creation of buffers around features; overlay areas so that you can create an intersection, union, or symmetrical difference; merge features; and perform other common geoprocessing actions.
Raster		The **Raster** tab provides access to a Calculator, which allows you to perform calculations of existing raster pixel values. It provides a Georeferencer tool, which allows you to assign coordinates to the raster, and access to the Terrain Analysis, Projection, Conversion, Extraction, Analysis, and Miscellaneous Tools to assist in drawing land details.
Web		The **Web** tab provides access to MetaSearch, an easy and intuitive approach and user-friendly interface to searching metadata catalogues within QGIS.
Processing		Although available to GUPS users, you do not need the options under the **Processing** tab for Census Bureau geographic program participation. The items under this tab pertain to algorithms, creating models, viewing the results of algorithms executed, and history.
Help		The **Help** tab provides tools for understanding QGIS (the open-source platform on which GUPS was developed) and the GUPS application itself. Under the **GUPS Help** menu, you can find short training videos describing how to perform specific actions in GUPS.

Tab	Drop-down Menu	Function / Description
GUPS		The **GUPS** tab provides quick access to the key tools also available on the **Standard** and **LUCA** toolbars, including those needed to manage maps. Click the **About GUPS** option in the drop-down menu to find the GUPS version number. If you call for technical support, you will need to provide this number. The example shows version number 5.12.3-current_20171114. The number you see may be different.

2.2.3 Toolbars

The **Standard** and **LUCA** toolbars are located at the top of the GUPS page. These toolbars offer general GIS and system tools and allow you to make your LUCA updates.

Note: You may move the toolbars to the location most convenient for you. For example, if you prefer that the **Add Data** toolbar appear at the top of the page, you can drag it there. This allows you to expand the area available for the **Table of Contents** and the Map View.

As you work with the toolbars, hover your mouse over any toolbar button to see the name of the tool it represents. The section below describes the **Standard** and **LUCA** toolbars.

2.2.3.1 Standard Toolbar Buttons

The **Standard** toolbar provides the navigation tools to interact with the map and layers attribute tables.

Figure 10. Standard Toolbar Buttons

The **Standard** toolbar includes several smaller toolbars. A series of small parallel lines precedes each sub-toolbar.

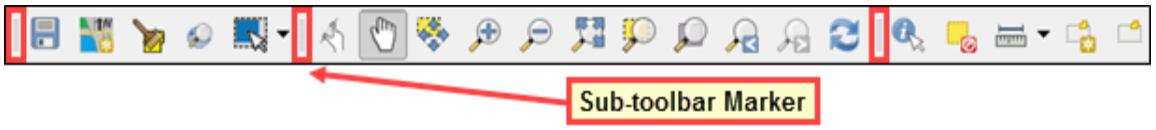


Figure 11. Sub-toolbar Markers

The first sub-toolbar contains the **Save** button, **Map Management** button, **Clean GUPS Data** button, **Search** button, and **Selection** tool.

The second sub-toolbar provides tools for viewing and navigating the map in the **Map View**.

The third sub-toolbar allows you to identify, select, and deselect features on the map, make measurements, create spatial bookmarks, and work with the layer attribute tables.

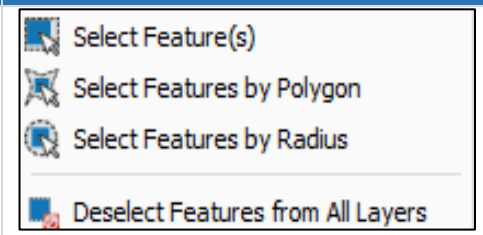
The last sub-toolbar contains buttons related to QGIS plug-ins. (If you did not install plug-ins before starting GUPS, this toolbar will be blank.) If you wish to install plug-ins, please refer to the instructions in **Appendix C, Section C6 Plugins**.

To rearrange the toolbars, left-click and hold the sub-toolbar marker then drag it to the desired location. Release the mouse button to set the toolbar in the new location.

Table 8 defines the purpose of each button on the **Standard** toolbar.

Table 8: Standard Toolbar Buttons

Button	Name	Function / Description
	Save	Saves the current GUPS project, including any changes to layer properties, projection, last viewed extent, and layers added.
	Map Management	Choose your geographic program in GUPS and access the automatically loaded default map display layers based on the program chosen.
	Clean GUPS Data	**Warning! This tool deletes files and folders permanently!** This allows you to delete a single or multiple county project(s). You can select the project to delete or choose to delete all the projects in a specific program. The color red highlights the active project in the current session. Cleanups that include the current session will cause GUPS to shut down.
	Search and Zoom	Choose to search a map by Place, 2010 Census Tract, 2010 Census Block, Landmark, or Street Name.
	Select Feature(s)	Enables you to select layer features in the map window with a single click, dragging a box, or drawing graphics on the screen.

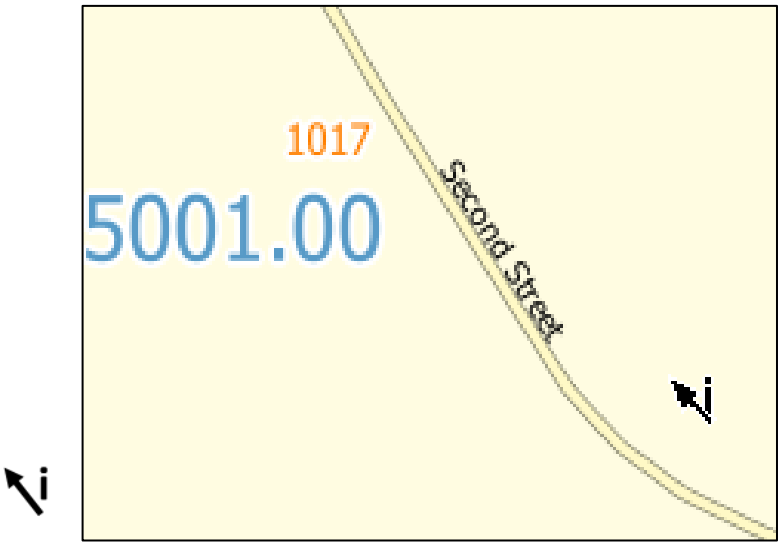
Button	Name	Function / Description
		
	Touch Zoom and Pan	Designed for touchscreen computers. Allows you to zoom and pan the map displayed in the **Map View** using finger gestures to increase or decrease the map scale.
	Pan Map	Shifts the map in **Map View** without changing the map scale. Click the button, and then click a location on the map to re-center the map to the clicked location.
	Pan Map to Selection	Shifts the map in **Map View** to the rows selected in the attribute table for a selected feature. After selecting a feature(s), click the button to re-center the map based on the selected feature(s).
	Zoom In	Displays the map in **Map View** at a larger scale. Click the button, and then click on the map at the location to which you want to zoom.
	Zoom Out	Displays the map in **Map View** at a smaller scale.
	Zoom Full	Displays the map in **Map View** at a smaller scale and zooms the map view to the full extent of the county.
	Zoom to Selection	Zooms the **Map View** to the rows selected by query in the attribute table for a feature(s). After selecting a feature(s) on the map, click the button to view the feature(s) at a greater map scale.
	Zoom to Layer	Zooms the **Map View** to the layer selected in the **Table of Contents**. After selecting the layer, click the button to zoom to the layer's extent.
	Zoom Last	Zooms the **Map View** to the previous map extent.
	Zoom Next	Zooms the **Map View** forward to the next map extent (if you viewed the previous extent).
	Refresh	Displays the **Map View** to initial full display.

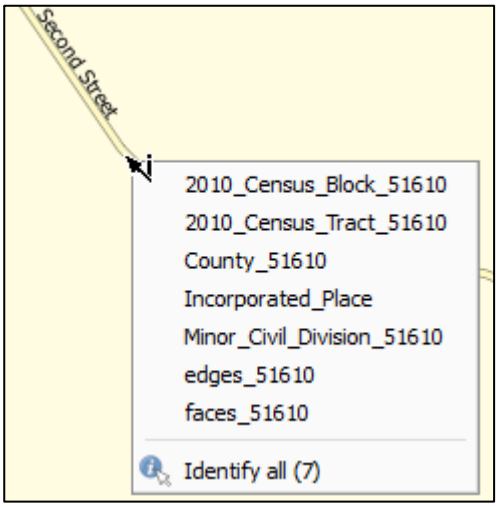
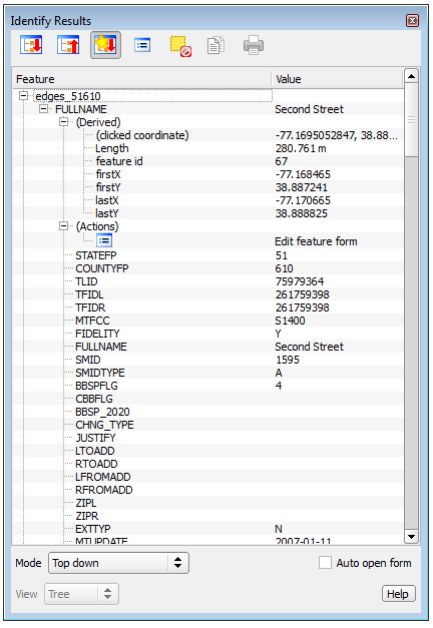
Button	Name	Function / Description
	Identify Features	Identifies geographic features. Click the button and then click on a feature on the map to identify the feature at the location.
	Deselect Features from All Layers	Deselects selected features from all layers.
	Measure	Provides options to measure linear distance, area, and angles on the map.
	New Bookmark	Creates and names a spatial bookmark of the current **Map View**.
	Show Bookmarks	Display all bookmarks you created.

2.2.3.2 Identify a Feature Using the Identify Features Button

To identify a feature on the map, follow the steps in **Table 9**.

Table 9: Identify a Feature on the Map

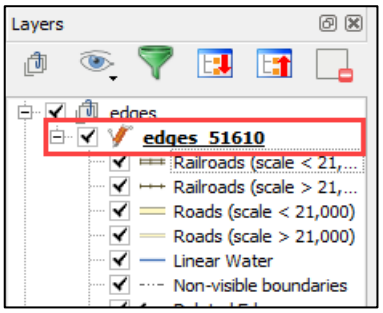
Step	Action and *Result*
Step 1	Click the **Identify** button on the **Standard** toolbar. Your arrow will display with an '**i**' beside it.  (Training—Fictitious Information)

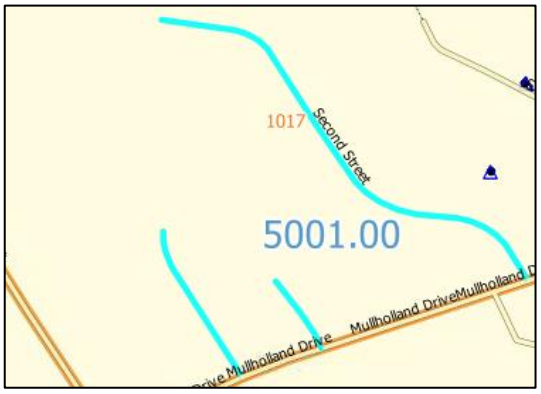
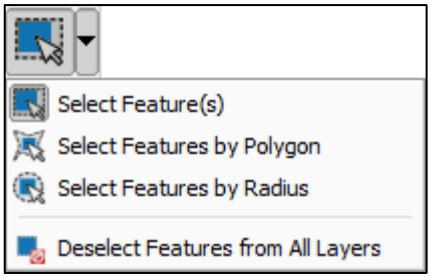
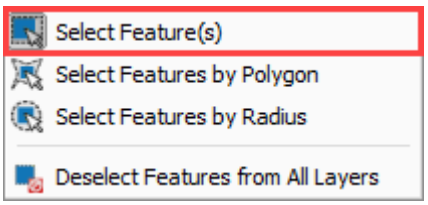
Step	Action and *Result*
Step 2	Right-click on the feature. *The results display in a drop-down menu on the map*.  (Training—Fictitious Information) Select the layer you want to receive information about. *The **Identify Results** window opens.*
Step 3	Alternatively, click the **Identify** button, then left-click on the feature. *The feature turns red (color may vary) and the **Identify Results** screen opens under the **Table of Contents**, showing the feature attributes*. (Note that here we have dragged the screen from beneath the **Table of Contents**.) 

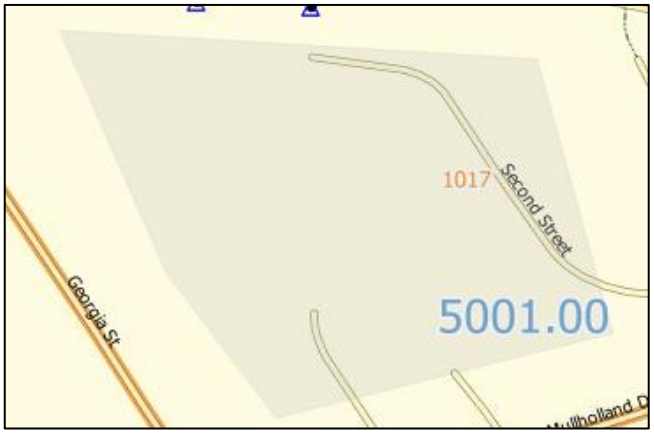
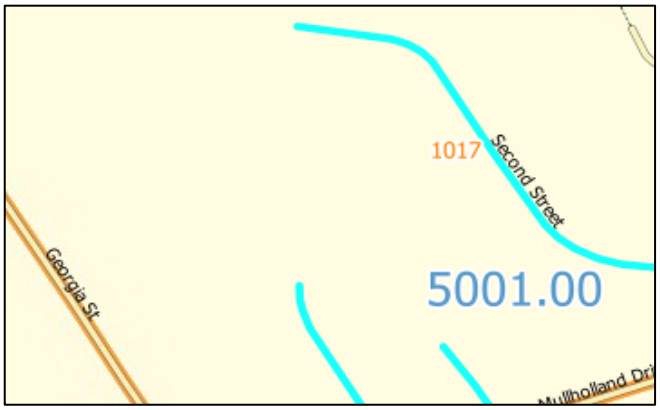
2.2.3.3 Using the Select Features and Deselect Features Buttons

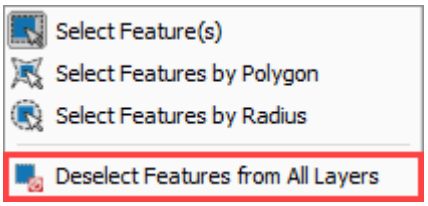
The **Select Features** button gives you several ways to select features on the **Map View**. The **Deselect Features from All Layers** button allows you to deselect features you previously selected. **Table 10** describes each of the feature selection methods and explains how to deselect features.

Table 10: Select / Deselect Features on the Map

Step	Action and *Result*
	A Note on GUPS Tools GUPS tools remain active until you select a different tool. For example, if you use the **Select Features** tool to select multiple address points then decide you would rather add a new linear feature instead, you must click the **Add Linear Feature** tool before you click on the map again. If you do not, the **Select Features** tool, still active, selects a different set of address points.
Step 1	Click on the layer name in the **Table of Contents** for the layer in which you want to select a feature. For example, if you want to select linear features, click on the **Edges** layer. The layer is active when it is underlined. 
Step 2	Click once on the **Select Features** button on the **Standard** toolbar.
Step 3	Click on an edge in the **Map View**. *The selected edge turns cyan blue (color may vary).* (Training—Fictitious Information)

Step	Action and *Result*
Step 4	To select more than one edge, hold down the **CTRL** key while clicking on the additional edges. This method is suited to instances where you want to select edges that are not intersecting, as shown below.  (Training—Fictitious Information)
	You can also select multiple features by clicking the **Select Feature** button then dragging your cursor over the features. This method is convenient when you want to select a large number of address map spots within an area without having to click each map spot, one by one.
Step 5	To open other **Select Features** options, click on the down arrow to the right of the **Select Features** button. *The **Select Features** drop-down menu opens*.  **Note:** When the **Select Features** menu opens, the button's appearance changes.
Step 6	The first option in the menu, **Select Feature(s)**, duplicates the functions available when you click on the main button on the toolbar. 

Step	Action and *Result*
Step 7	The second option, **Select Features by Polygon**, allows you to draw a polygon on the map to select features. To use this feature select it in the drop-down menu, then follow the steps below.
Step 8	Left-click on the map where you want to begin the polygon. Drag your cursor to extend the line to a point of your choosing, left-click and extend the line in a new direction. Continue until you have a closed polygon, as shown below.  (Training—Fictitious Information)
Step 9	When done, right-click. (This tells the system you have finished drawing). *All features within or touching the polygon are highlighted in cyan blue*.  (Training—Fictitious Information)

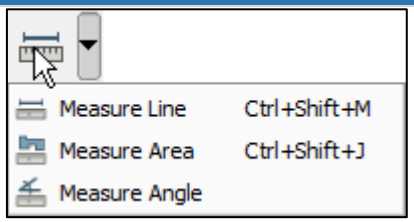
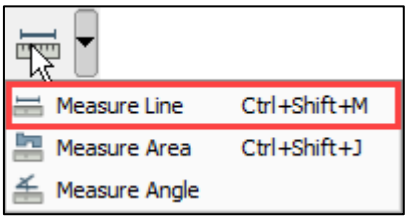
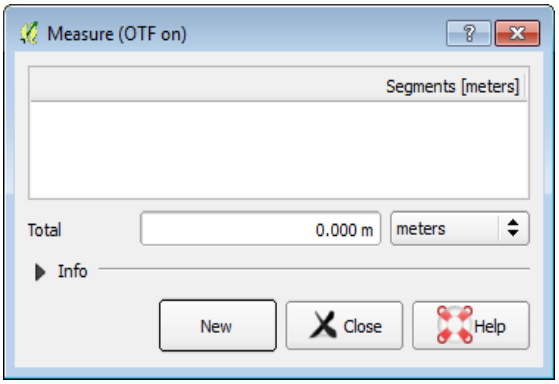
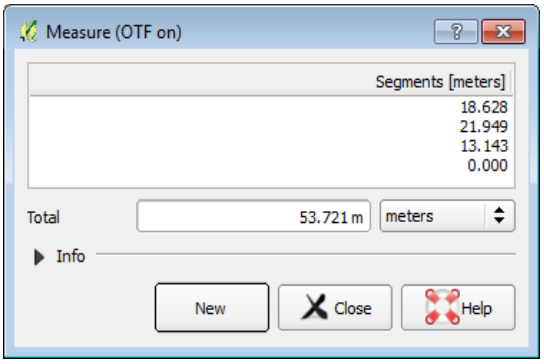
Step	Action and *Result*
Step 10	The final option, **Select Features by Radius**, allows you to use your cursor to draw a circle to define the features you want to select. To use this tool, left-click on the map where you want to begin then hold down the mouse and drag the cursor outward to expand the circle. Release the mouse when you are done. *The feature(s) selected is (are) highlighted in cyan blue*.
Step 11	To deselect feature(s) automatically, select the **Deselect Features from All Layers** option under the **Select Features** button,  or select the **Deselect Features from all Layers** button in the **Standard Toolbar**. *This clears all selections from all layers.*

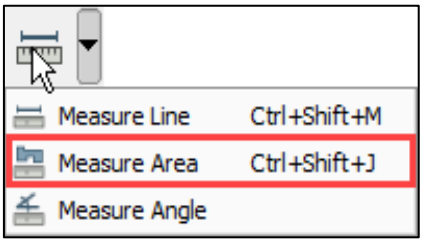
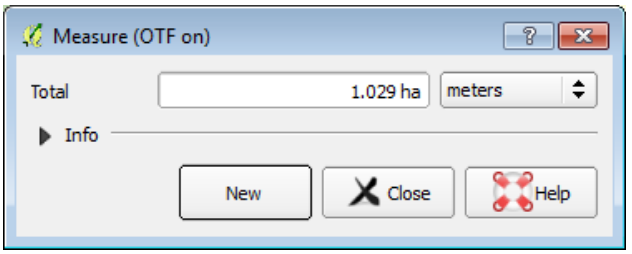
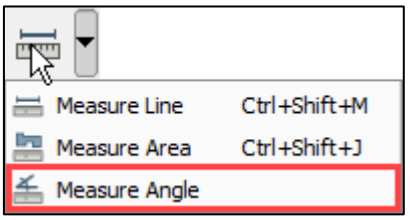
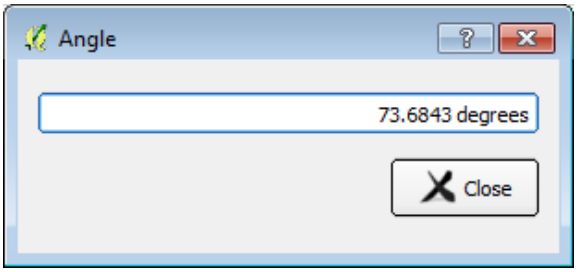
2.2.3.3.1 Determine Distance, Area, and Angles on the Map View

To measure the distance between two or more points, area, or an angle on a map, follow the steps **Table 11.**

Table 11: Measure Distances, Area, and Angles on a Map

Step	Action and *Result*
Step 1	Click the **Measure** button on the **Standard** toolbar. *The **Measure** button drop-down menu opens*.

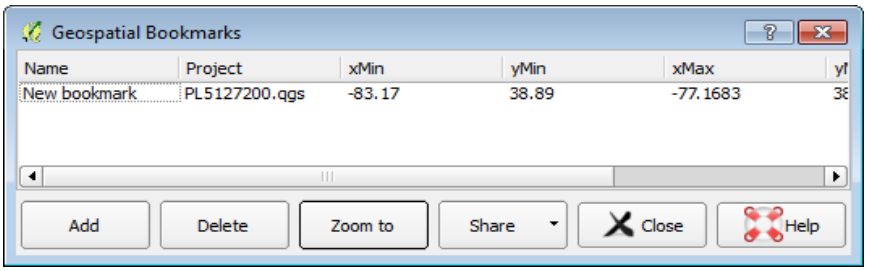
Step	Action and *Result*
	
Step 2	To measure the distance between two points on the map, select **Measure Line** in the drop-down menu.  *The **Measure** box opens*. 
Step 3	Zoom to the map location where you want to make the measurement. Click on the beginning point on the map and continue clicking on points until you reach the final point. Right-click when you are done. *The length of each segment of the line you drew, as well as the total length of the line between the beginning point and the ending point, appear in the **Measure** box*. 

Step	Action and *Result*
Step 4	To measure area on the map, select **Measure Area** in the drop-down menu.  *The **Measure** box opens*.  When the box opens, left-click on the map to begin drawing a polygon around the area you want to measure. Left-click when you reach each vertex of the polygon. When you are finished, right-click. *The area of the polygon appears in the **Total** field. Use the drop-down list to the right to see the area in other units of measure.* To begin a new measurement, click the **New** button.
Step 5	To measure an angle on the map, first select the **Measure Angle** option in the drop-down menu.  Left-click on the map to begin drawing the angle. Move the mouse cursor (but do not hold down the mouse button) to create the first side of the angle, then left-click. Move the mouse cursor again (still without holding down the mouse button) to draw the second leg. *The **Angle** box opens showing the angle measurement*. 

2.2.3.3.2 Save Locations on a Map Using the Bookmark Button

To save geographic locations on your map and view them later, follow the steps in **Table 12**.

Table 12: Bookmark Locations on a Map

Step	Action and *Result*
Step 1	Zoom to the location on the map in the **Map View** that you wish to bookmark and click on the **New Bookmark** button on the **Standard** toolbar. *The **Geospatial Bookmarks** box opens.* 
Step 2	Click on the row named **New bookmark**. Clear the **Name** field containing **New bookmark** and type in a descriptive name for the bookmark (255-character limit). Click the **Close** button. *This action adds the bookmark.*
Step 3	To view and manage spatial bookmarks, click on the **Show Bookmarks** button on the **Standard** toolbar. *The **Geospatial Bookmarks** dialog box opens.*
	You can add, delete, and edit bookmark names and coordinates from the **Geospatial Bookmarks** dialog box.

2.2.3.4 LUCA Toolbar Buttons

The **LUCA** toolbar provides the LUCA-specific functions needed to complete your review and update activities, as well as to import and export zipped shapefiles.

Figure 12. LUCA Toolbar

Table 13 describes each toolbar button.

Table 13: LUCA Toolbar Buttons

Button	Name	Function / Description
	Add Linear Feature	Add a new linear feature.
	Delete/Restore Linear feature	Delete or restore an existing linear feature.
	Split Linear Feature	Split a linear feature. You may need to split a linear feature to accurately reflect an entity's location. This feature "splits" the original into two.
	Display All Names	Display the primary name of a feature, as well as its alternate name(s).
	Census Address List	Allows you to **Add**, **Correct**, and **Delete** addresses on the Census Address list.
	User Address List	Allows you to **Import**, **Edit**, and **Add** local addresses directly to the Census Address List.
	Address Count List	Count of addresses for each census block. Allows you to move selection(s) to the top, Show All Features, or Show Selected Features.
	Show Label	This button shows and hides address labels next to the map spots in the Map view.
	Modify Linear Feature Attributes	Edit attributes of a selected linear feature.
	Show/Hide Legend	Shows or hides the legend.
	Geography Review Tool	Allows you to review edits made to linear features before creating your submission.
	Address Review Tool	Allows you to review and validate your address list for errors before creating your submission.
	Export to ZIP	Create the zip file containing all required data and shapefiles to submit to the Census Bureau.
	Print Map to File	Export a printable map in .pdf, .png, .tif, or jpeg format.

Button	Name	Function / Description
	Print Address List to PDF	Allows you to create a .pdf of the Census Address List, User Address List, or Address Count List for printing.
	Add Imagery	Adds USGS NAIP Plus Map Imagery.

These buttons will be discussed in more detail throughout **Chapter 3: Performing Your LUCA Review**.

2.2.4 Status Bar

The **Status bar** at the bottom of the GUPS main page displays information about the map. It allows you to adjust the map scale and see the mouse cursor's coordinates on the map.

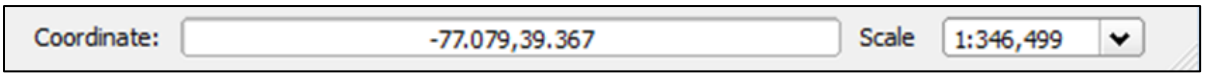


Figure 13. Status Bar

Table 14 describes each element of the Status bar.

Table 14: Status Bar Elements

Item	Description
Coordinate	Shows your current position in map coordinates (default is decimal degrees for GUPS) as you move the mouse cursor across the map.
Scale	Shows the scale of the current map view. You can change the scale using the drop down arrow next to the scale or by zooming in and out of the **Map View**.

2.2.5 Census Address List and User Address List Tab

In order to complete a LUCA address review, you need to understand the Census Address List and User Address List tabs.

The steps in **Table 17** explain how to import your data into the User Address List and how to view the Read-Only Reference Table in GUPS.

2.2.5.1 Census Address List

Contains all of the residential (city style and non-city style) addresses known to the Census Bureau within your jurisdiction. It also contains census geographic codes (state, county, census tract, census block, GEOID) that indicate the location of each address.

The Census Address List drop-down menus allow you to sort or filter the Census Address List and provides buttons for editing addresses and assigning action codes during your address review as shown in **Figure 14**. Additionally, the selection tool allows you to select address points on the map.

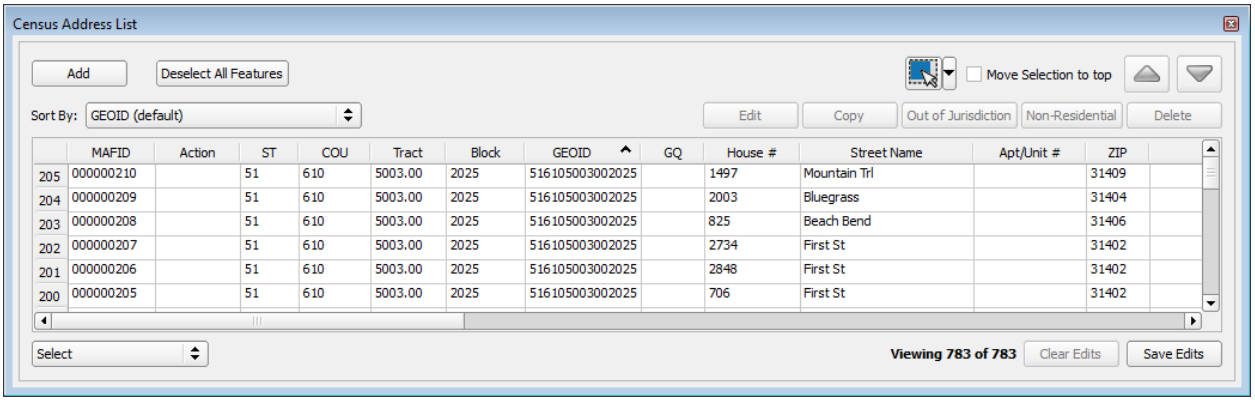


Figure 14. Census Address List (Training—Fictitious Information)

Figure 15 shows the Census Address List drop-down menus available for reviewing the address list and making address updates.

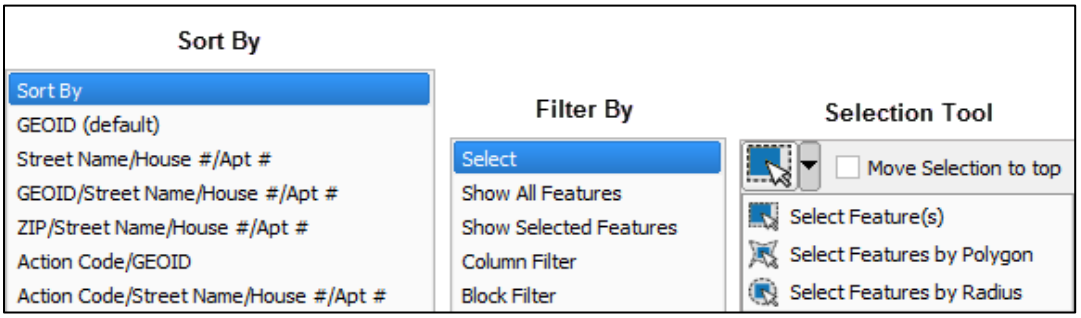


Figure 15. Census Address List Drop-Down Menus

The Census Address List consists of the following columns:

- **Blank**—Sequential number for each address record in the file.
- **MAFID**—Unique control number (maximum character length is 9 characters) assigned by the Census Bureau to each MAF address.
- **Action**—Code used to record the type of change when an update is made to an address, including:

  A—Add new or missing addresses.
  C—Flagging addresses for correction.
  D—Flagging addresses for deletion.
  J—Flagging addresses not in your jurisdiction.
  N—Flagging addresses as nonresidential.

- **ST**—Two-digit state FIPS code that identifies your jurisdiction.
- **COU**—Three-digit county FIPS code that identifies your jurisdiction.
- **Tract**—Consists of six digits with a decimal between the fourth and fifth digit, consisting of a four-digit base number, including leading zeroes, plus a two-digit number suffix, with trailing zeroes. For example, 1234.01 and 0003.00.
- **Block**—Four-digit 2010 Census Tabulation Block Number. Census blocks are numbered uniquely from 0000 to 9999 within a census tract, which nest within a county and a state. The first digit of the census block number identifies the block group.
- **GEOID**—15-digit combination of State, County, Tract, and Block fields (e.g., 010090054001009).
- **GQ**—Displays a "Y" for addresses that are considered group quarters, such as nursing homes or dormitories a flag to distinguish group quarters (GQ) from other residential addresses.
- **House #**—The assigned address number, alone or with an address number prefix and/or address number suffix that identifies a location along a thoroughfare or within a community.
- **Street Name**—The full street or road name of a thoroughfare as assigned by a governing authority or the used and recognized alternate (alias) name.
- **Apt/Unit #**—Within structure identifier, such as APT 5 or 1st FL FRN.

Note: Multiunit identifiers are required for all new added addresses and address updates for multiunit structures for LUCA. The Census Bureau will not process a multiunit address without a multiunit identifier.

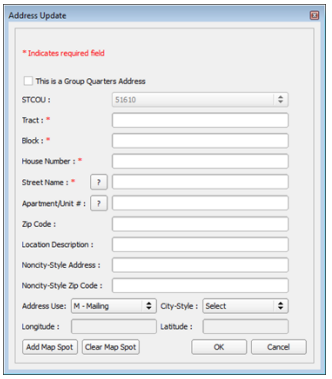
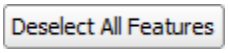
- **ZIP**—Five-digit USPS ZIP Code for city style mailing addresses.
- **GQ Name**—Name associated with a group quarters (e.g., Dobbs Hall).
- **Facility Name**—Facility name if the group quarters is associated with a facility (e.g., Group Quarters Name is Dobbs Hall, associated with the Facility Name, University of Illinois).
- **Location Description**—Description of the location and physical characteristics of a living quarters (Red Ranch w/White Shutters).
- **Non-city Style Address**—Identifies non-city style mail delivery addresses such as rural route or highway contract route and box number).
- **Non-city Style ZIP**—5-digit USPS ZIP Code for a non-city style mail delivery address.
- **Map Spot ID**—Unique number assigned by the Census Bureau for each map spot within a census block. Number starts over in each block.
- **Use**—A value assigned by the participant indicating if the address is used for M) mailing purposes, L) location purposes, including emergency services, or B) both mailing and location purposes.
- **Latitude**—Address structure latitude, populated only if the Census Bureau has captured an address structure point for the address, otherwise blank.
- **Longitude**— Address structure latitude, populated only if the Census Bureau has captured an address structure point for the address, otherwise blank.
- **City Style Address**—Displays a "Y" if city style address or an "N" if non-city style address.

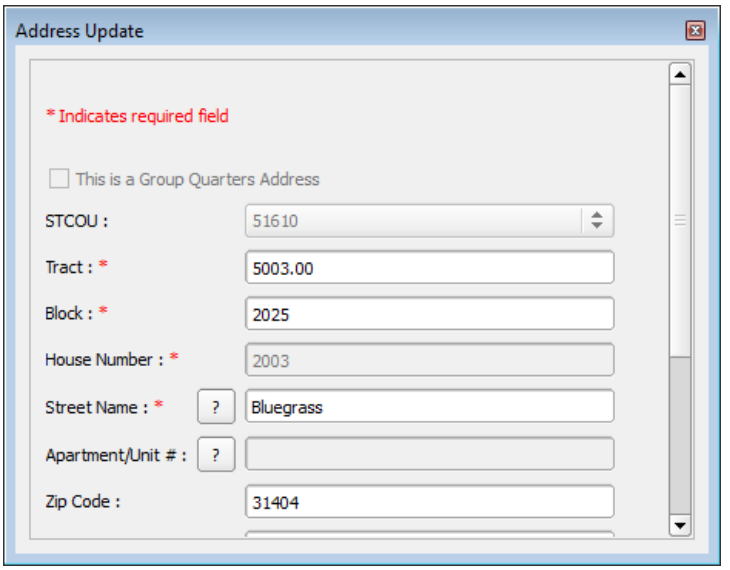
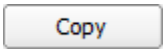
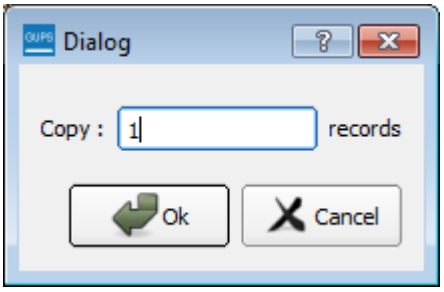
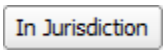
Additionally, the Census Address List for Puerto Rico will contain the following columns:

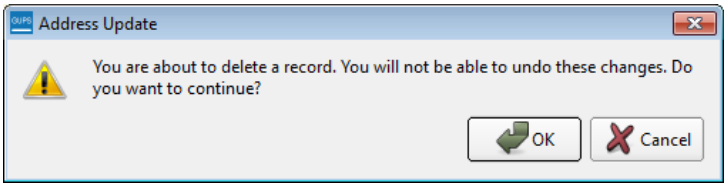
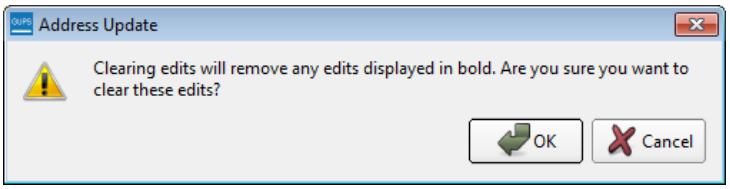
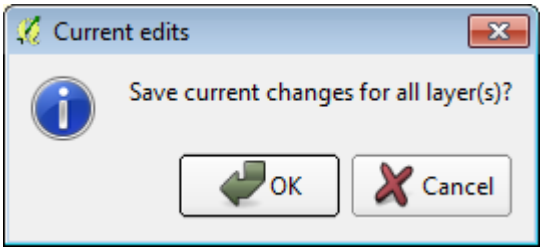
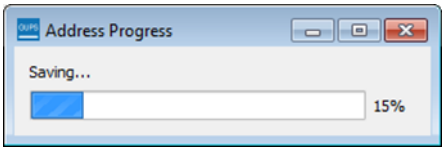
- **Urbanizacion**—Neighborhood or housing development name (e.g., URB Flora).
- **Condominium**—Residenciál Apartment/Condominium/Public Housing Complex (*residencial*) name.
- **Complex Descriptor**—Building descriptor and/or identifier, such as Tower 2 or Building III.
- **Area 1**—Name of a geographic area typically bounding a neighborhood. Include the type Barrio (BO), Sector (SEC), Barriada (BDA), Comunidad (COM) or Parcela (PARC) with the geographic name.
- **Area 2**—Secondary name of a geographic area typically bounding a neighborhood. Include the type Sector (SEC), Barriada (BDA), Comunidad (COM) or Parcela (PARC) with the geographic area.
- **KM/HM**—Kilometer and hectometer road marker values.

Table 15 provides a list of buttons and descriptions available in the Census Address List.

Table 15: Census Address List Buttons and Features:

Button	Name	Function / Description
	Add Address to the Census Address List	 Clicking on the **Add** button opens the **Address Update** window shown above. All fields with an asterisk (*) are required.
	Deselect All Features Button	Deselects features you selected using the **Select Features** tools.
	Move Selection to Top Button	Checking this button moves the selected row(s) to the top of the **Address Field**.
	Up Button	Moves your highlight up to the next line in the **Address Field**.

Button	Name	Function / Description
	Down Button	Moves your highlight down to the next line in the **Address Field**.
	Edit Button	 (Training—Fictitious Information) Clicking on the Edit button opens the **Address Update** window shown above. All fields with an asterisk (*) are required.
	Copy Button	 Copies the address record.
	Out of Jurisdiction Button	Marks the selected address with an action code of "**J**" to show the change as **Out of Jurisdiction**.
	In Jurisdiction Button	Removes the "**J**" action code to return the address to an "In-Jurisdiction" address. Inserts a "**C**" action code to indicate an address edit at some point in the review.
	Non-Residential Button	Marks the selected address with an action code of "**N**" to show the change as a **Non-Residential** address.

Button	Name	Function / Description
Residential	Residential Button	Removes the "**N**" action code to return the address to a **Residential** address. Inserts a "**C**" action to indicate an address edit at some point in the review.
Delete	Delete Button	 Inserts a "**D**" in the **Action Code** field for selected address.
Restore	Restore Button	Removes the "**D**" action code to return the address to the address list. Inserts a "**C**" action code to indicate an address edit at some point in the review.
Clear Edits	Clear Edits Button	 Removes all unsaved (bolded) edits from the Census Address List.
Save Edits	Save Edits Button	 Saves new (bolded) edits. 
Viewing 783 of 783	Viewable Addresses	This count shows the number of addresses being viewed in the address list (due to filtering) compared to the total number of addresses for your jurisdiction.

2.2.5.2 User Address List

The User Address List provides a way for you to import, view, and manipulate your own address data using the GUPS. The User Address List layout corresponds to the Census Address List field descriptions in **Section 2.2.5.1**.

There are no addresses in this list and the functionality is disabled at the initial startup. Importing your address list via the Import button, populates the address list and enables functionality.

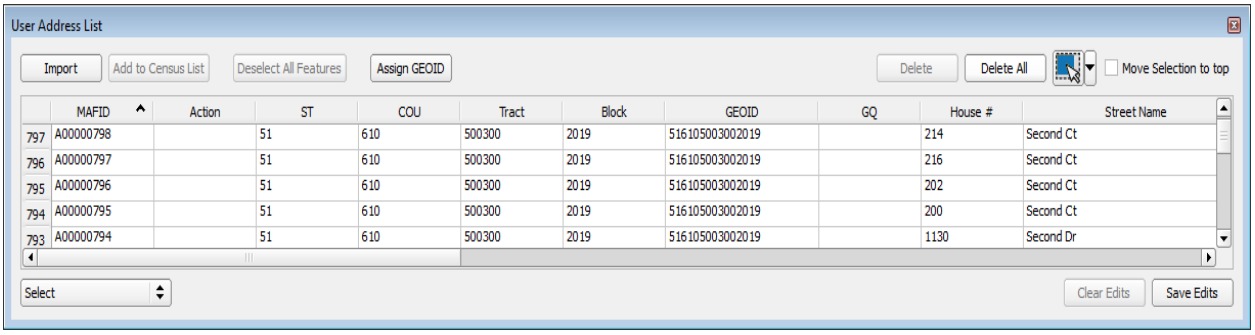
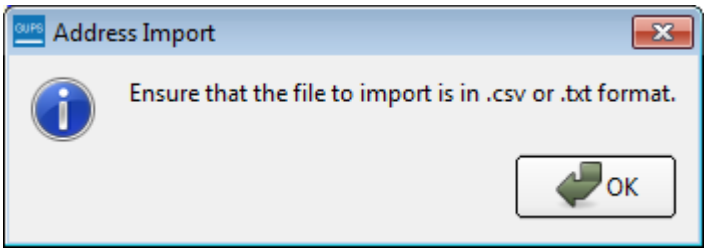
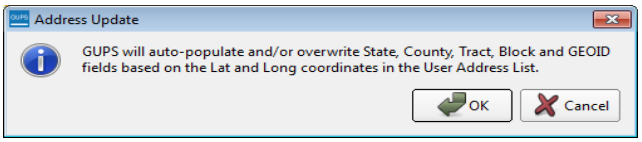
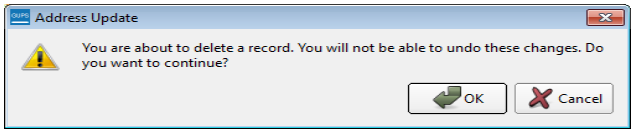
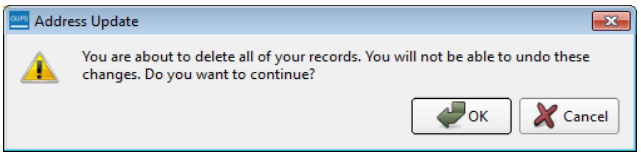
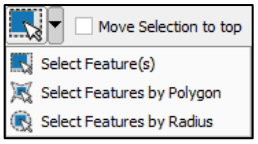
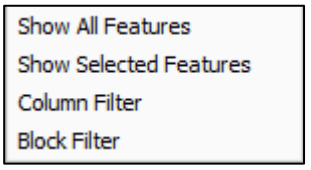
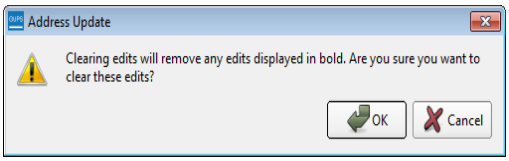


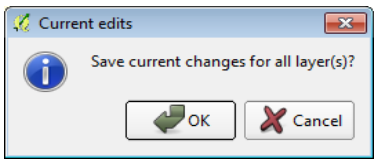
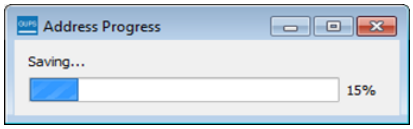
Figure 16. User Address List Screen Shot (Training—Fictitious Information)

The following is a list of buttons and descriptions available only in the User Address List.

Table 16: User Address List Buttons and Descriptions

Button	Name	Function / Description
Import	Import Button	 Imports user files, must be .csv or .txt format.
Add to Census List	Add to Census List Button	Adds the **User Address** to the Census List.
Deselect All Features	Deselect All Features Button	Deselects all rows/lines you have selected.

Button	Name	Function / Description
Assign GEOID	Assign GEOID Button	 GUPS will auto-populate and/or overwrite **State**, **County**, **Tract**, **Block**, and **GEOID** fields based on the Latitude and Longitude coordinates in the User Address List.
Delete	Delete Button	 Permanently deletes a record from the User Address List.
Delete All	Delete All Button	 Permanently deletes all records from the User Address List.
	Select Features Dropdown Menu	To open the **Select Features** options, click on the down arrow to the right of the **Select Features** button. *The **Select Features** drop-down menu opens*. (See Table 10 for details on each feature.)
	Move Selection to Top Button	Checking this button moves the selected row(s) to the top of the Address List.
	Select Dropdown Menu	 Allows you to select which features you would like to show in the User Address List.
Clear Edits	Clear Edits Button	

Button	Name	Function / Description
		Removes all unsaved (bolded) edits from the User Address List.
Save Edits	Save Edits Button	 Saves new (bolded) edits. 

2.2.5.3 Import Local Address List

When importing a User Address List, you have the option to map your address list fields to those expected by GUPS, or import your file directly with no changes. **By using the field mapping option, the User Address List will be completely interactive with many of the same functions as the Census Address List.** If you choose to import your address list as is, a read-only table view of your address list appears.

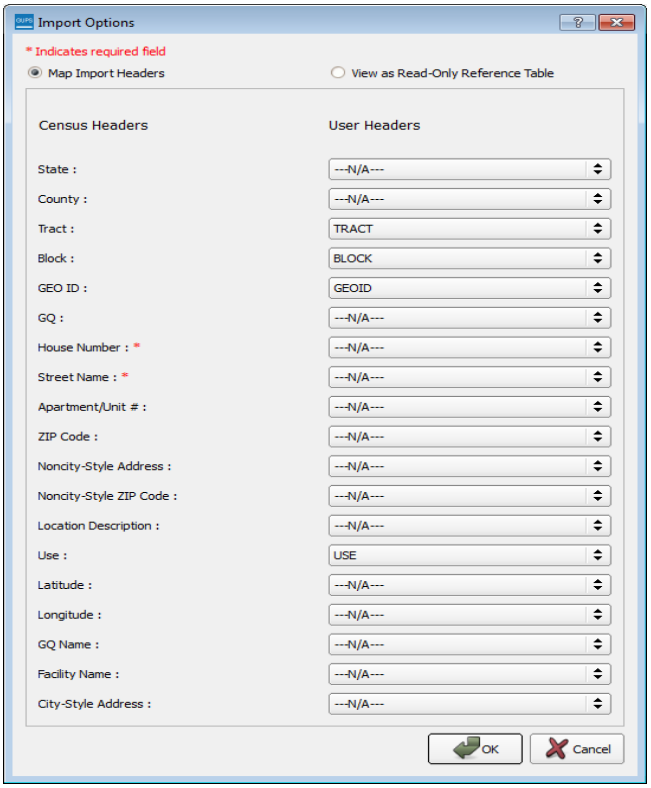


Figure 17. User Address List Import Choosing to Map Your Address Fields

You should use field mapping whenever possible. For a list of expected field headers and their specifications, please refer to **Section 2.2.5.1 Census Address List**. In addition, an address list header layout template is included in the subdirectory of the Non-Title 13 Data Disc, **2020LUCA_header_file.txt** or **2020LUCA_header_file_pr.txt**, which you may use to import your local address list into the Census Address List format.

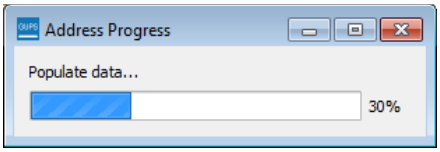


Figure 18. Address Import Conversion of User File in Progress

By default, all user imported addresses imported using the field-mapping option with a Latitude and Longitude coordinate, display on the map with a blue triangle as shown in **Figure 19**.

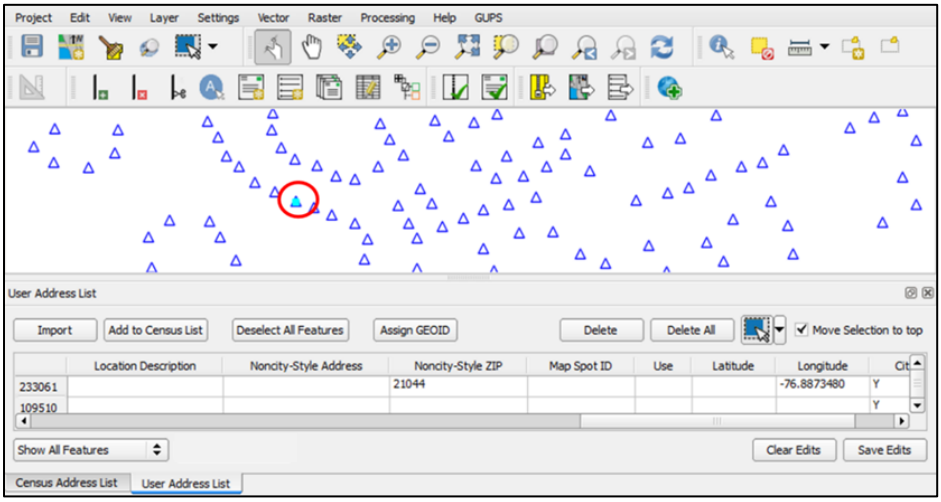
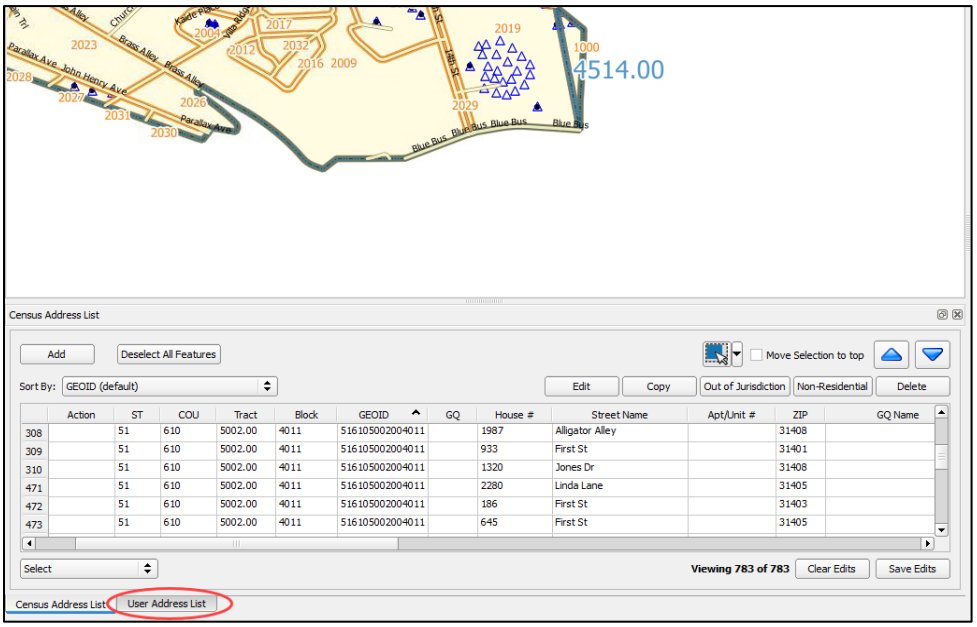
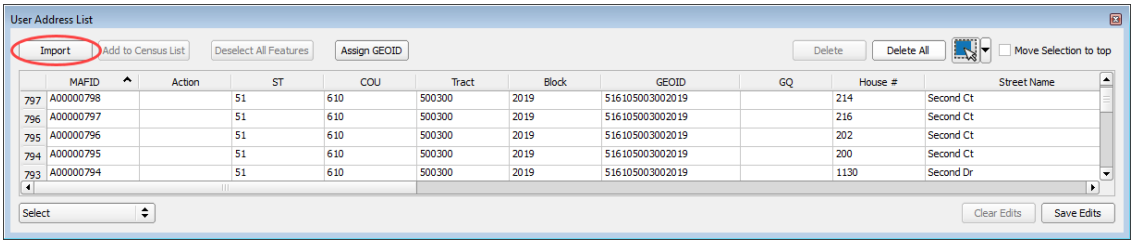
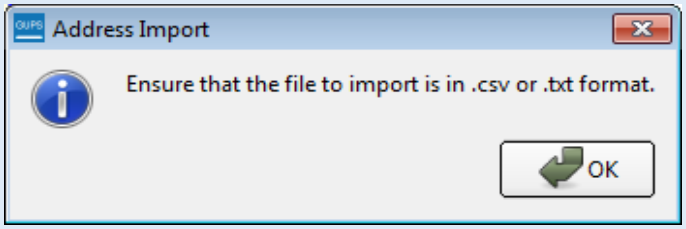
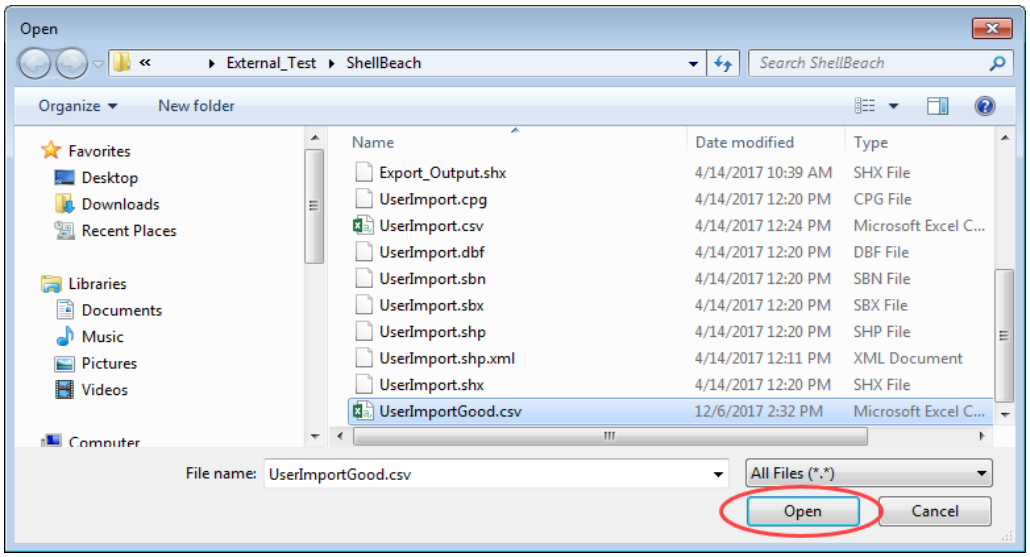
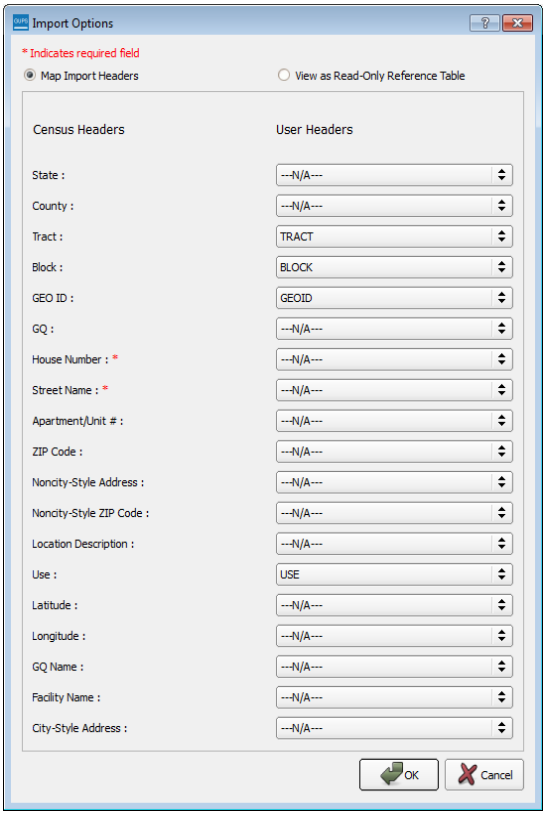


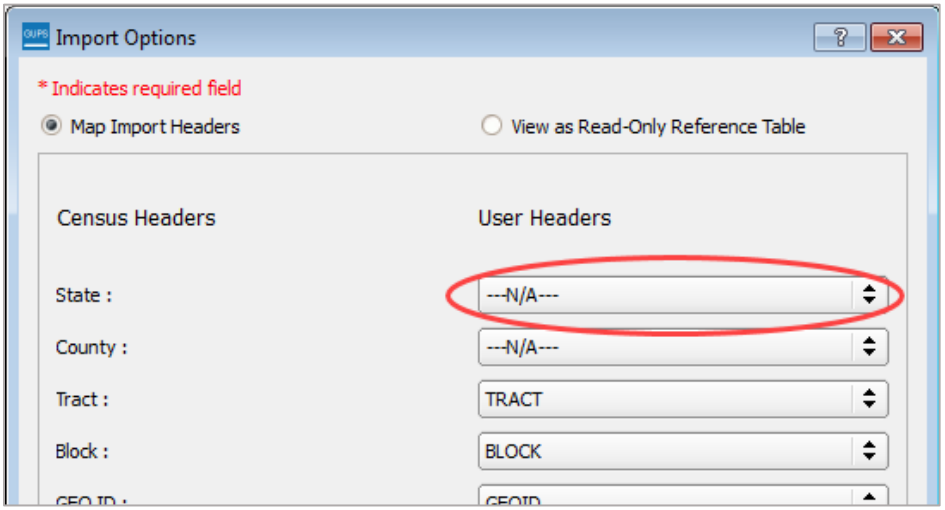
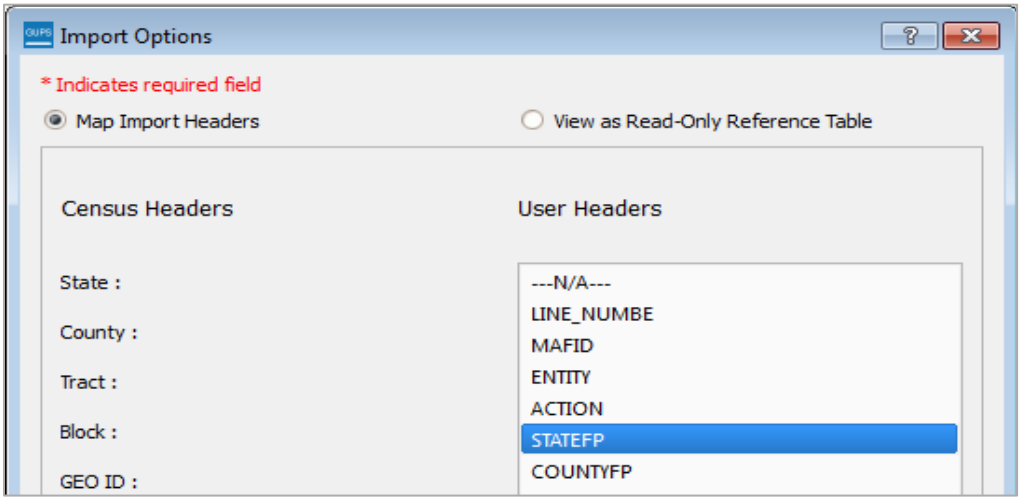
Figure 19. Imported Address with Latitude and Longitude Displayed by Blue Triangle (Training—Fictitious Information)

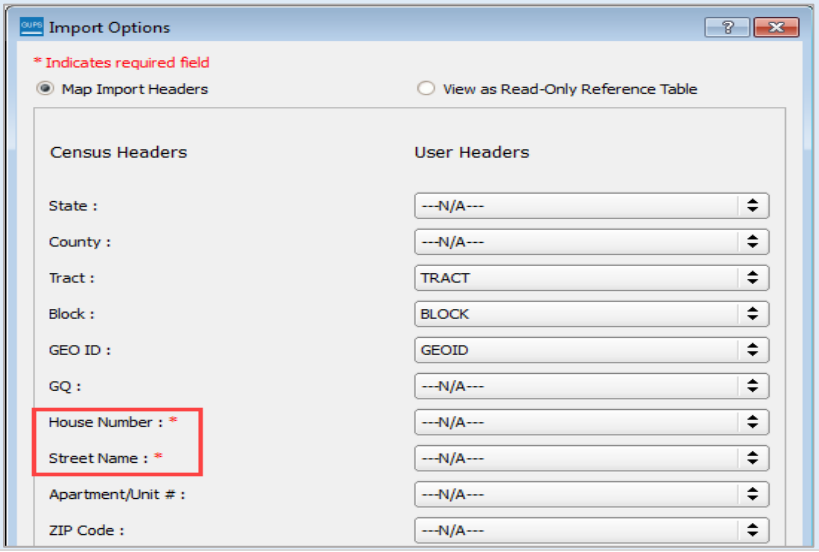
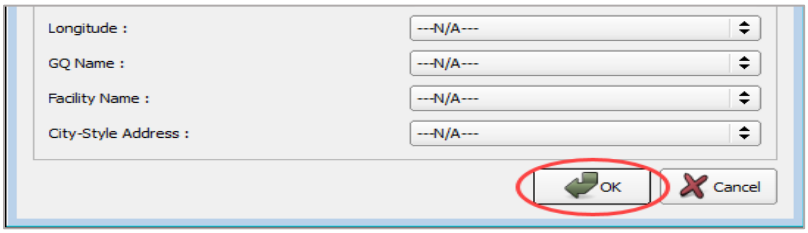
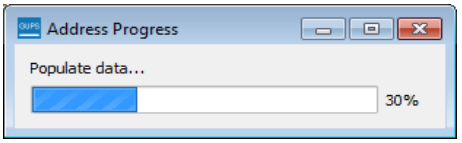
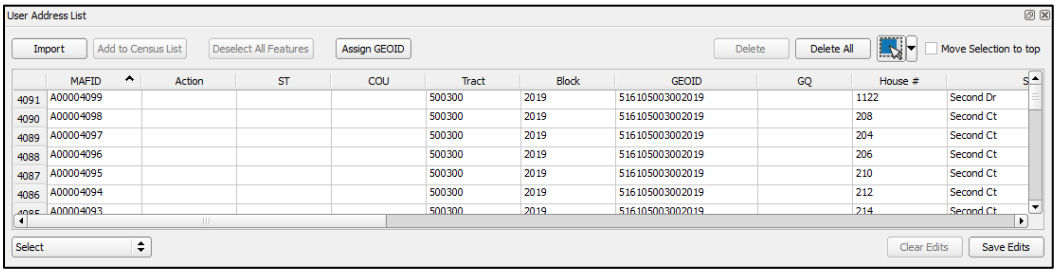
Follow the steps in **Table 17** to import your address list into the User Address List (mapped fields and read-only).

Table 17: Import Data into the User List

Step	Action and *Result*
Step 1	To import data to the User Address List, navigate to the bottom of the screen. Click on the tab labeled "User Address List."  (Training—Fictitious Information)
Step 2	*The user address list opens and docks to the bottom of the Map View.* Select the **Import** button.  (Training—Fictitious Information)
	A pop-up display reminds you to ensure that the file you want to import is in Comma Separated Values or Text File format.  Select the **OK** button to continue.

Step	Action and *Result*
Step 3	Locate the .csv or .txt file on your computer you want to import and then click **"Open."** 
Step 4	After you select your file to import, *the Import Options dialog box opens*. 

Step	Action and *Result*
Step 5	There are two options for viewing your data. Map Import Headers — The first option is Map Import Headers. View as Read-Only Reference Table — The second option is a Read-Only Reference Table. This example shows the **Map Import Headers** radio button selected.
Step 6	On the left, is a list of Census Headers that the Census Bureau uses to collect data for the Census Address List. On the right, is a corresponding list of User Headers. Map each of the headers in your file to the corresponding Census Headers. Notice the first User Header field says N/A. 
Step 7	To map your state header, select **STATEFP** from the drop down menu. 

Step	Action and *Result*
	Note: In the left column, the House Number and Street Name have an asterisk beside them indicating required fields. 
Step 8	When you finish mapping all the headers, select the **OK** button.  A status window will appear showing you the progress of your import.  After completion, the window disappears and the User Address List is populated with your information.  (Training—Fictitious Information)

2.2.6 Address Count List

The Address Count List file contains the counts of all of the residential (city style and non-city style) addresses for your jurisdiction that are currently recorded by the Census Bureau.

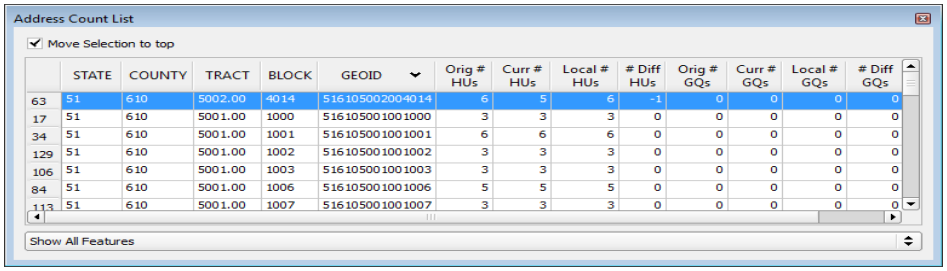


Figure 20. Address Count List (Training—Fictitious Information)

The list contains the number of housing unit and group quarters addresses on the Census Address List for each census block within your jurisdiction. The list is for reference to determine the correct number of residential addresses within each census block.

Each record contains 13 fields of information. The character length of each record may vary. The first row, or header row, displays the field names for each data column in the file.

1) **State**—Two-digit current state FIPS code for your jurisdiction.

2) **County**—Three-digit current county FIPS code for your jurisdiction.

3) **Tract**—Consists of six digits with a decimal between the fourth and fifth digit, consisting of a 4-digit base number, including leading zeroes, plus a 2-digit number suffix, with trailing zeroes. For example, 1234.01 and 0003.00.

4) **Block**—Four-digit 2010 Census Tabulation Block Number. Census blocks are numbered uniquely from 0000 to 9999 within a census tract, which nest within a county and a state. The first digit of the census block number identifies the block group.

5) **GEOID**—15-digit combination of state, county, tract, and block fields. For example 010090046001002.

6) **Orig # HUs—**Total number of addresses in your jurisdiction identified as residential housing units by data in the MAF. This number remains static throughout the editing process.

7) **Curr # HUs**—Current number of housing unit addresses in each block according the Census Address List. This number changes as you add addresses and/or remove addresses from the Census Address List.

8) **Local # HUs**—Once a geocoded local address list is imported into the User Address List, this number automatically populates based on the number of housing units in each block according to the User Address List.

9) **# Diff HUs**—This is the difference between the Curr # HUs (Current Count of Housing Units) and the Local # HUs (Local Count of Housing Units). This number changes as you add addresses and/or remove addresses from the Census Address List.

10) **Orig # GQs—**The number of GQs addresses within each block according to the originally loaded Census Address List. This number remains static throughout the editing process.

11) **Curr # GQs**—Current number of GQs addresses in each block according the Census Address List. This number will change as you add addresses and/or remove addresses from the Census Address List.

12) **Local # GQs—**Once a geocoded local address list is imported into the User Address List, this number automatically populates based on the number of GQs in each block according to the User Address List.

13) **# Diff GQs—**This is the difference between the Curr # GQs (Current Count of GQs) and the Local # GQs (Local Count of GQs). This number changes as you add addresses and/or remove addresses from the Census Address List.

CHAPTER 3: PERFORMING YOUR LUCA REVIEW

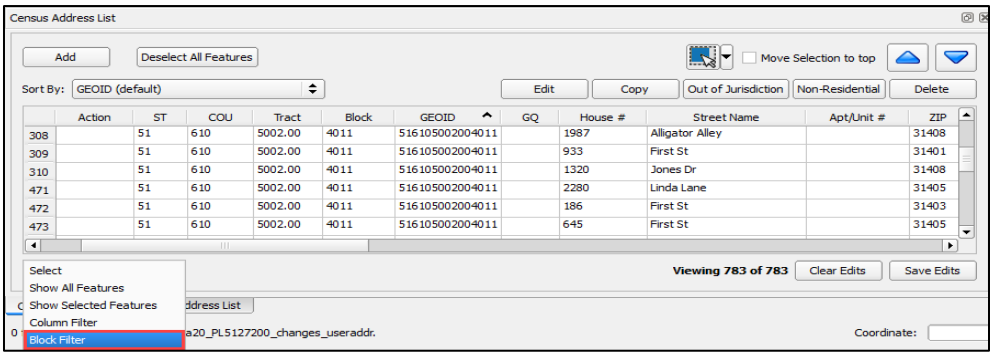
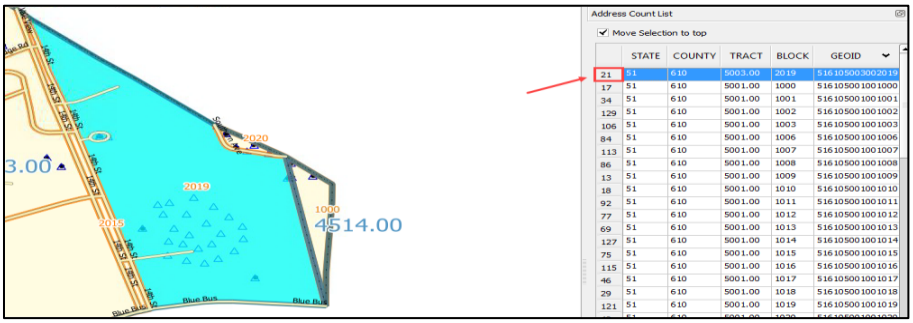
The following section provides instructions on how to perform the actions required for a complete LUCA review.

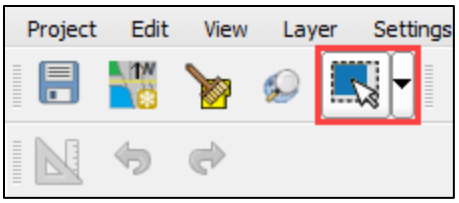
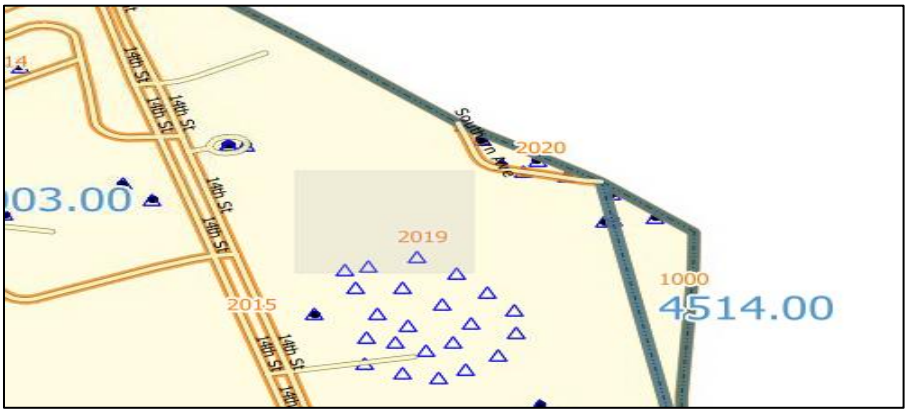
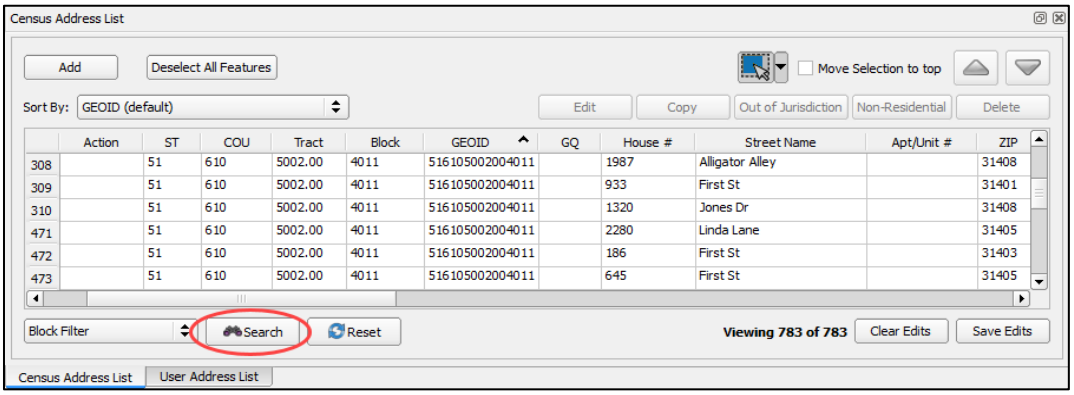
3.1 Address List Filtering

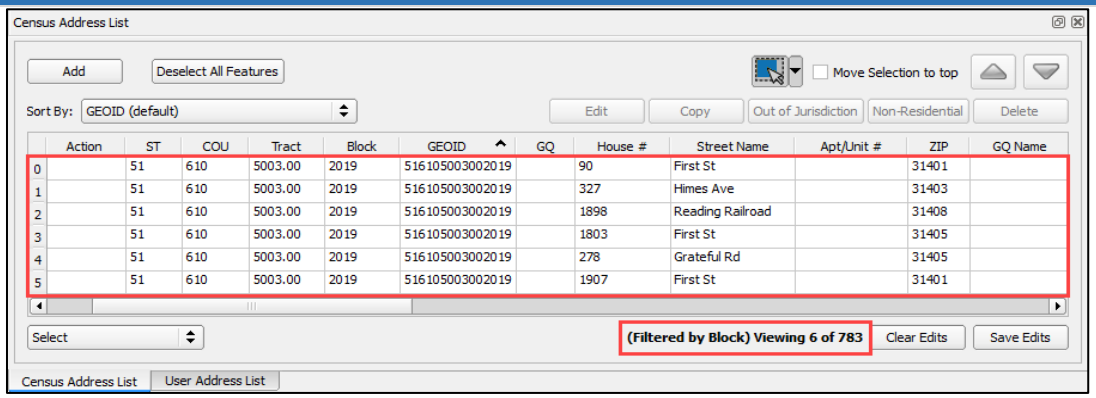
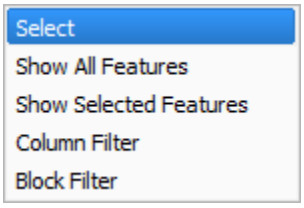
When reviewing an address list with a large number of addresses, it may be easier to review it in portions. Using the filters in the Census Address List allows you to remove extraneous addresses from the address list view, allowing you to review only the specific addresses you require for your review. Additionally, GUPS executes edits faster with fewer addresses in the address list view.

Using the Census Address List Block Filter along with the Address Count List allows you to narrow your review to specific areas, and gives you a starting point. In order to use the block filter, use the steps in **Table 18**.

Table 18: Address List Block Filter

Step	Action and *Result*
Step 1	Select the **Filtering drop-down** in the Census Address List.  (Training—Fictitious Information) Click on **Block Filter**.
Step 2	Select one or more blocks from the Address Count List.  (Training—Fictitious Information)

Step	Action and *Result*
	Alternatively, you can use the **Selection** tool at the top of the screen,  then select one or more blocks from the **Map** view.  (Training—Fictitious Information) The selected block(s) highlight in the **Map view** and **Address Count List**.
Step 3	Select the **Search** button in the **Census Address List** window.  (Training—Fictitious Information) *Only addresses located within the selected block(s) will appear in the Census Address List, simplifying the review process. Additionally, the Census Address List shows how many addresses are in the view at this time.*

Step	Action and *Result*
	 (Training—Fictitious Information)
Step 4	To change the addresses in the view, choose a different filter from the drop-down menu in Step 1. 

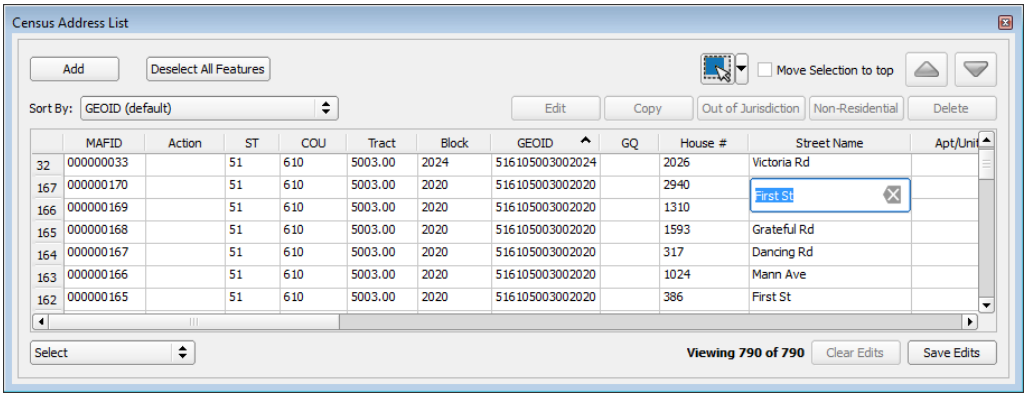
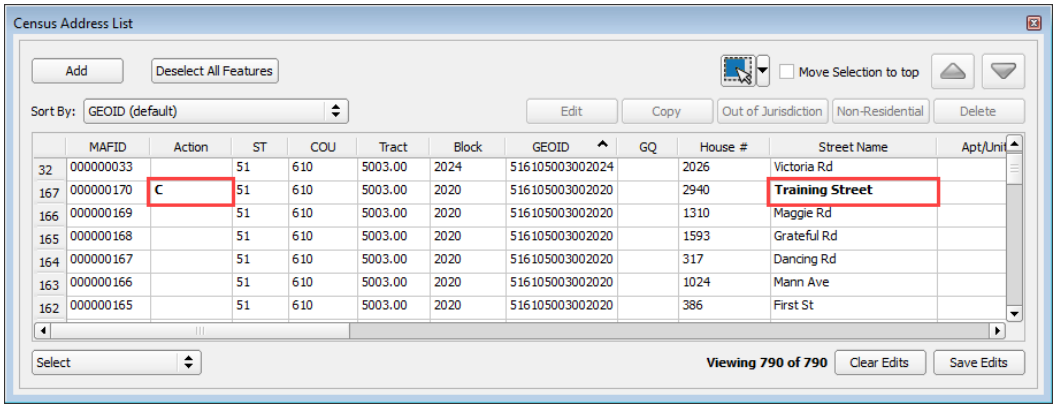
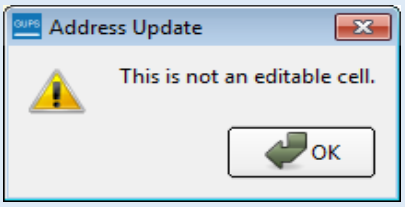
3.2 Editing the Census Address List

Editing addresses is the primary function of LUCA. This section covers different ways to edit the Census Address List including in-line editing, adding addresses, deleting addresses, moving map spots, and copying addresses.

3.2.1 Edit Addresses In-Line

To simplify the editing process, GUPS is designed with in-line editing. In-line editing allows the user to perform edits in a similar way to many spreadsheet programs. Refer to **Table 19** to learn how to perform in-line edits.

Table 19: Making In-Line Edits in the Census Address List

Step	Action and *Result*
Step 1	Double-click the field you wish to edit and enter the correct information. You may move to the next editable field by pressing the Tab key on your keyboard, or by double-clicking in a different field. 
Step 2	*The newly edited data is bolded to show what information you changed.* Additionally, a "**C**" has been placed in the Action column to show the address has been edited.  Selecting the **Save Edits** button saves all edits and removes the bolding.
	If you made incorrect edits, you may choose the **Clear Edits** button, this returns all bolded edits to their previous values. If you attempt to select an un-editable field, you receive the following warning message dialog box: 

3.2.2 Editing Addresses Using the Edit Button

In addition to editing the Census Address List in-line, you can edit an address by selecting it then clicking the **Edit** button.

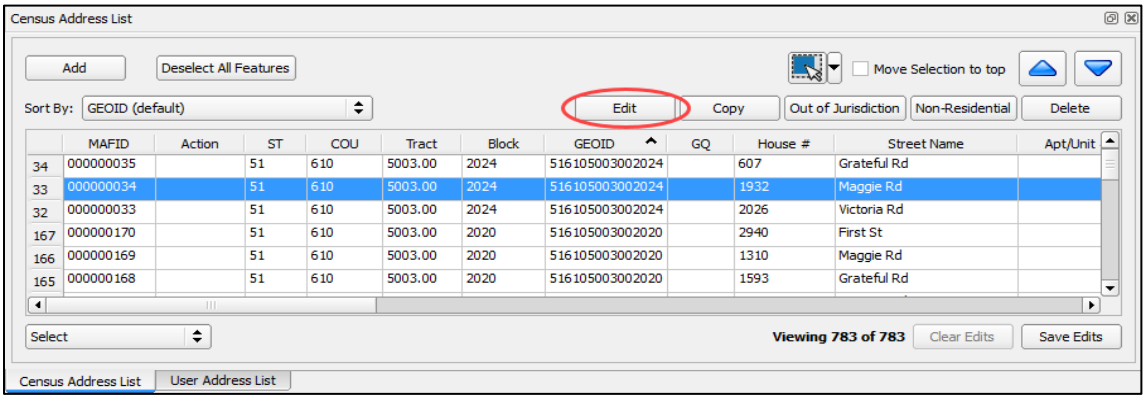
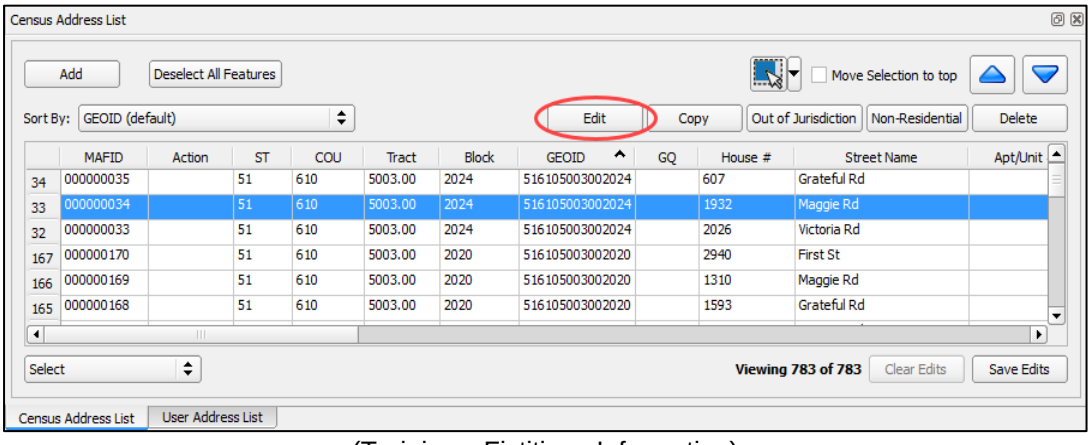


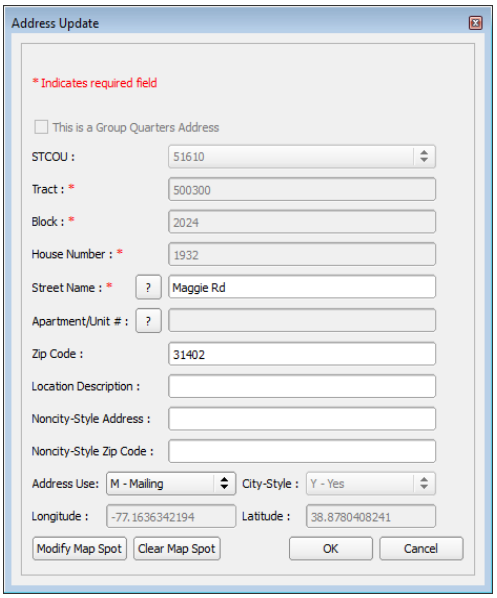
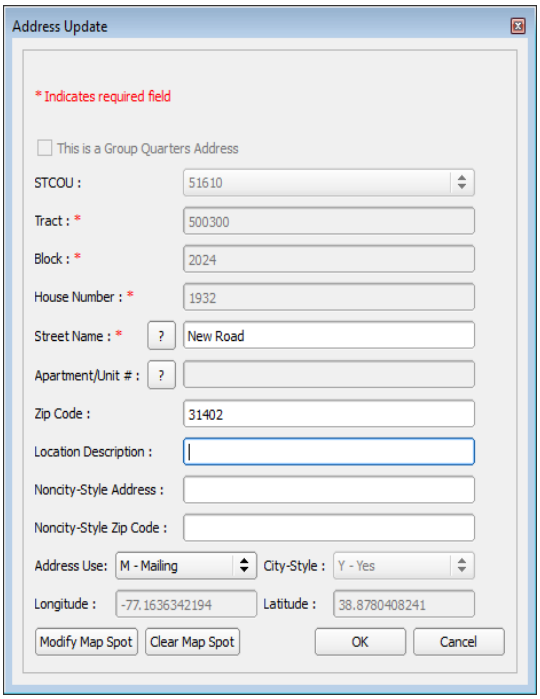
Figure 21. Census Address List Edit Button (Training—Fictitious Information)

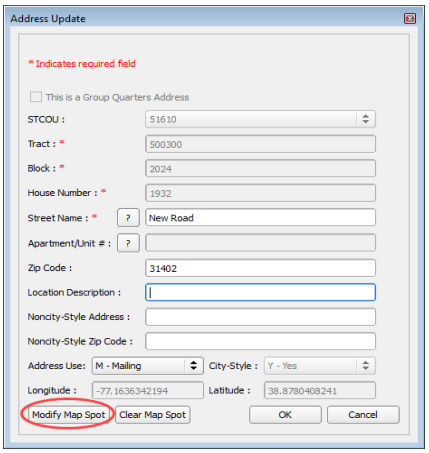
Selecting the Edit button allows you to edit an address in the Address Update Window. The Address Update Window allows you to see all of the editable fields for a single address at one time. It also provides you with the ability to add a map spot to an address, or modify the location of a map spot associated with an address. Additionally, when you select the **OK** button when finished editing, GUPS will validate the address and automatically inform you of corrections that need to be made before proceeding with saving.

Refer to **Table 20** to perform edits using the Edit button and Address Update Window.

Table 20: Editing Using the Address Update Window

Step	Action and *Result*
Step 1	On the Census Address List, select the row(s) to update, then select the **Edit** button.  (Training—Fictitious Information)

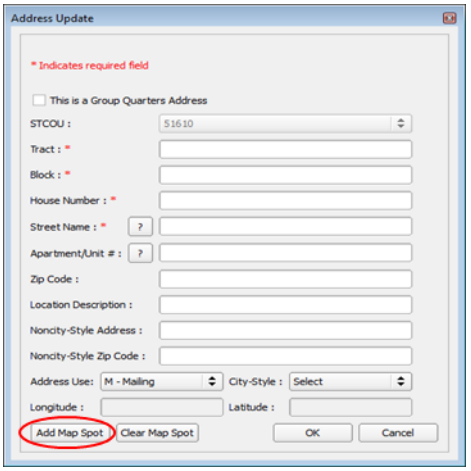
Step	Action and *Result*
Step 2	Complete the **Add Address Update Form**. Required fields have an asterisk.  (Training—Fictitious Information)
Step 3	Next click the **OK** button to save the new address.  (Training—Fictitious Information)

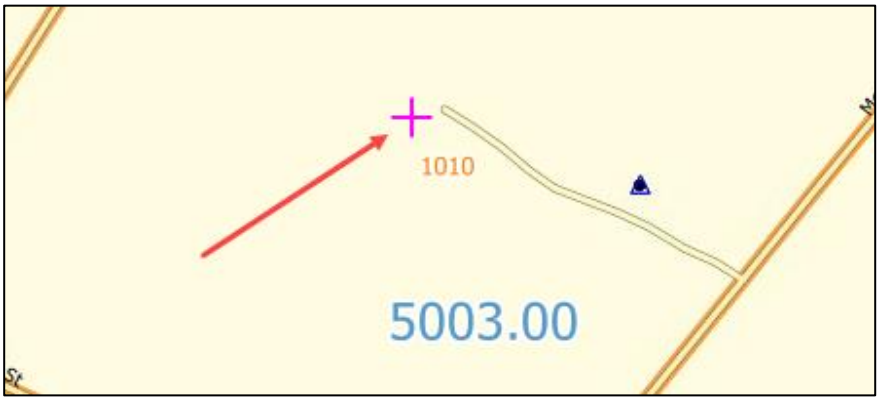
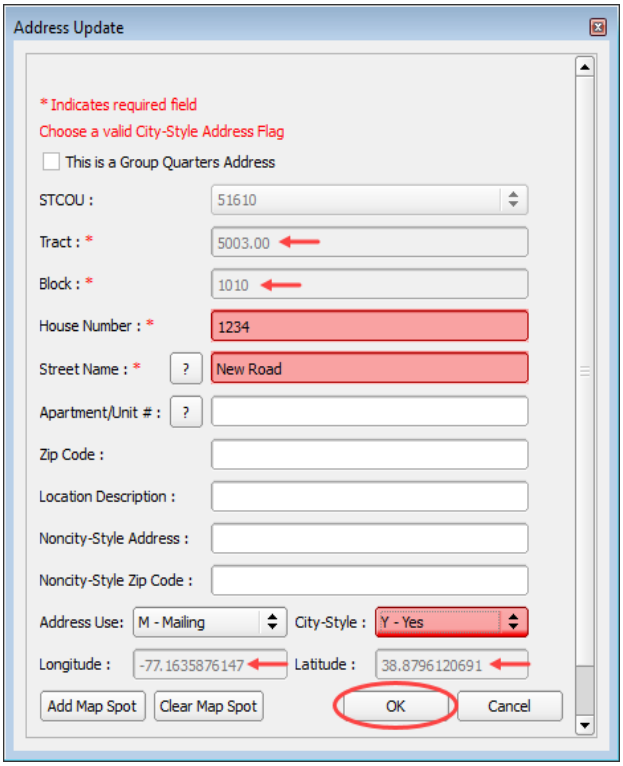
Step	Action and *Result*
Step 4	If you want to modify the map spot, you may do so before or after entering in the address data. Select the **Modify Map Spot** button and follow the steps in **Table 21: Add/Modify Map** SPOTS.  (Training—Fictitious Information)

3.2.3 Adding/Modifying Map Spots

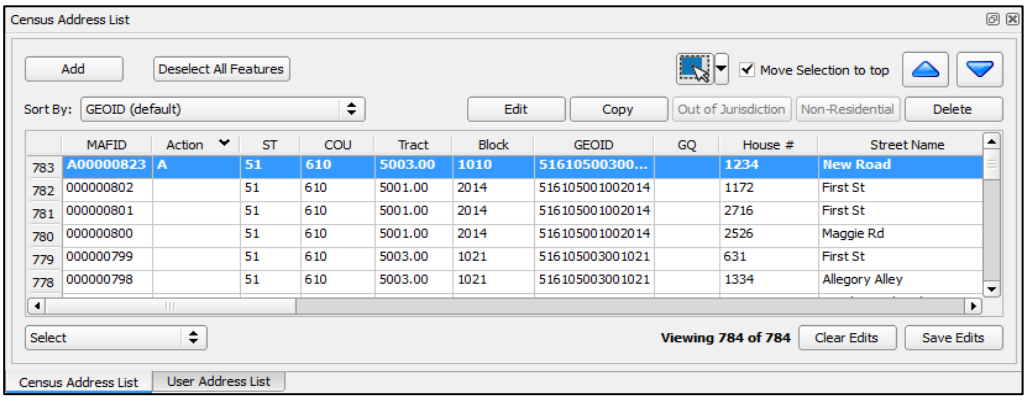
Editing an address using the **Edit** button and **Address Update** Window allows you to add a map spot to an address that does not have one, or modify the location of a map spot for an address that already exists. **Table 21** describes the process for adding or modifying a map spot.

Table 21: Add/Modify Map Spots

Step	Action and Result
Step 1	If you want to add a map spot, you may do so before or after entering in the address data. Select the **Add Map Spot** button. 

Step	Action and Result
Step 2	Choose the appropriate location for the address on the Map View, and left click. A purple cross hair identifies the **Map Spot** location.  (Training—Fictitious Information) The **Longitude** and **Latitude** coordinate fields and the **Tract** and **Block** codes associated with that location on the **Map View**, automatically fill in on the **Address Update** form.  (Training—Fictitious Information) Make sure you fill in all the required fields before selecting the **OK** button.

Step	Action and Result
Step 3	To confirm the added address, view the blue map spot, sort the **Action** column and search for the letter "**A**," which indicates an added Address, or check the **Move Selection to Top** check box.



(Training—Fictitious Information)

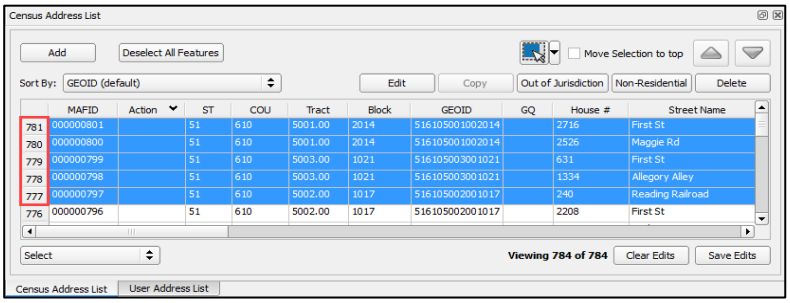
3.2.4 Batch Edits

The Census Address List is capable of batch editing. This functionality allows you to apply the same change to multiple addresses at the same time. To perform batch edits, all addresses must have no action code, or have all the same action code (action codes are further explained in the *Digital Respondent Guide*). Additionally, you cannot add group quarters (GQs) to a group of addresses for batch editing.

Table 22 describes how to perform batch edits in GUPS.

Table 22: Batch Edits

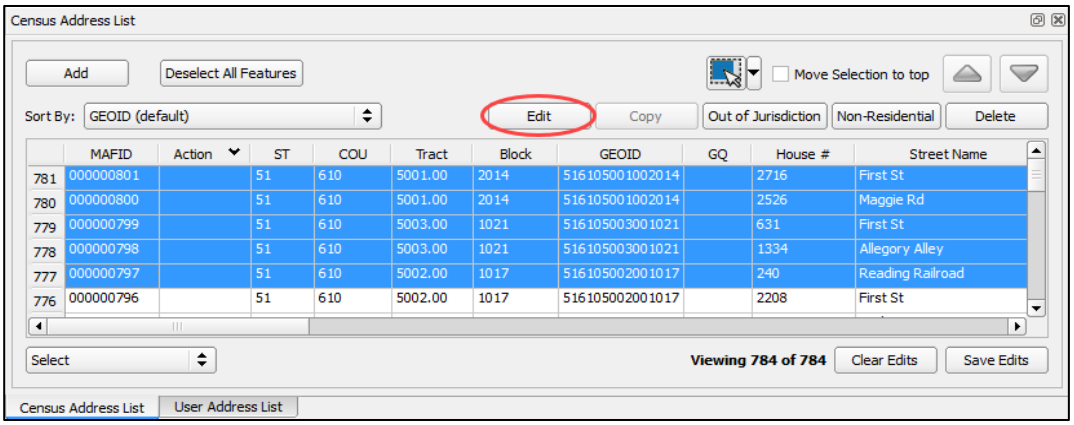
Step	Action and *Result*
Step 1	On the Census Address List, hold the "Control" key and left-click on the rows you want to edit to select them.



(Training—Fictitious Information)

Selected rows highlight in blue. Make sure the action codes are all blank or are all the same. This is required in order to make batch edits. This example selects four addresses.

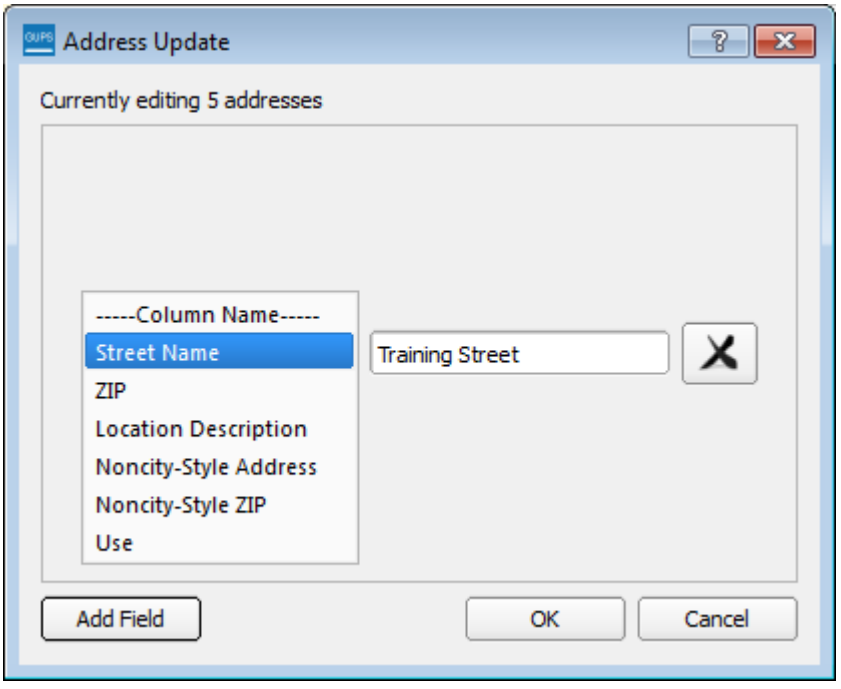
Step	Action and *Result*
Step 2	Select the **Edit** button.



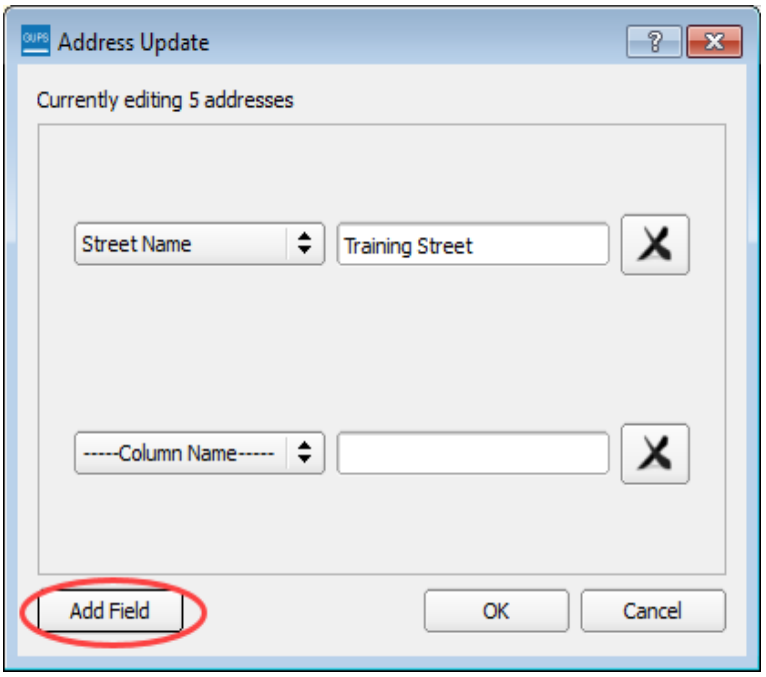
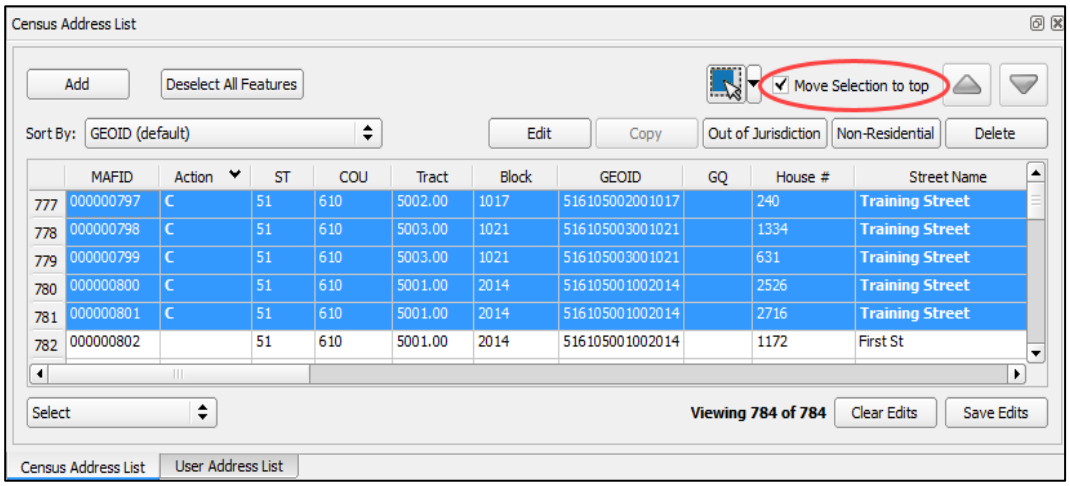
(Training—Fictitious Information)

*The **Address Update** window opens, displaying a dialog box with two sections: the first is Column Name (a drop-down field offering options for you to update) and the second section is a blank field where you give the specific name/text for your update.*

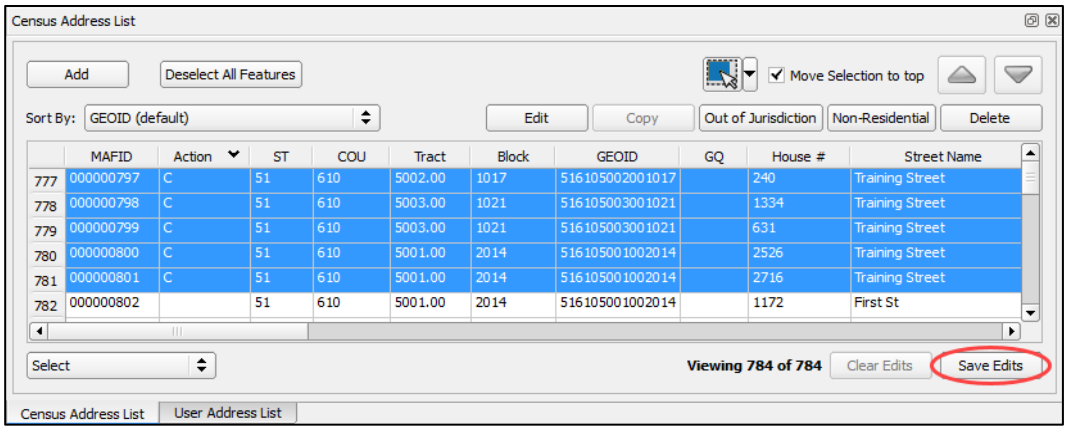
Select the field that needs to be updated then add the text for that field.



In this example, the street name was updated to Training Street. Select the **OK** button to apply the edits.

Step	Action and *Result*
Step 3	If you wish to make an edit for the selected addresses, select the **Add Field** button in the bottom left corner of the **Address Update** window. *An additional drop-down menu and a blank field appears in the window.*  Choose a second address field to update then fill in the text for that field. Select the **OK** button to apply the edits.
Step 4	To see the edits made, check the **Move Selection to Top** check box to move your edits to the top of the Census List.  (Training—Fictitious Information) *The edited fields appear in bold.*

	MAFID	Action	ST	COU	Tract	Block	GEOID	GQ	House #	Street Name
777	000000797	C	51	610	5002.00	1017	516105002001017		240	**Training Street**
778	000000798	C	51	610	5003.00	1021	516105003001021		1334	**Training Street**
779	000000799	C	51	610	5003.00	1021	516105003001021		631	**Training Street**
780	000000800	C	51	610	5001.00	2014	516105001002014		2526	**Training Street**
781	000000801	C	51	610	5001.00	2014	516105001002014		2716	**Training Street**
782	000000802		51	610	5001.00	2014	516105001002014		1172	First St

Step	Action and *Result*
Step 5	If you want to retain your edits, select the **Save Edits** button.  (Training—Fictitious Information) Select the **Save** button.

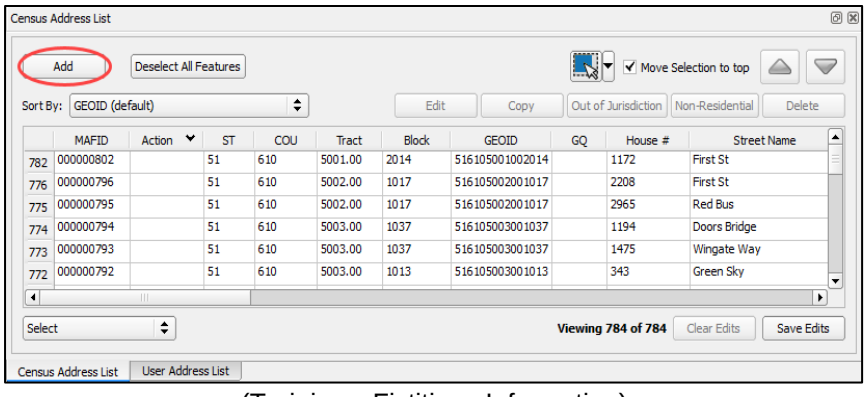
3.2.5 Add Addresses to the Census Address List

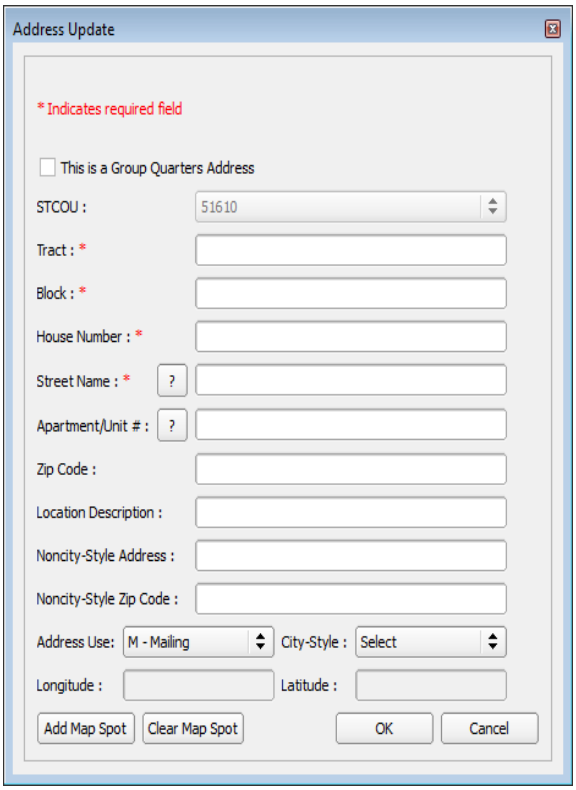
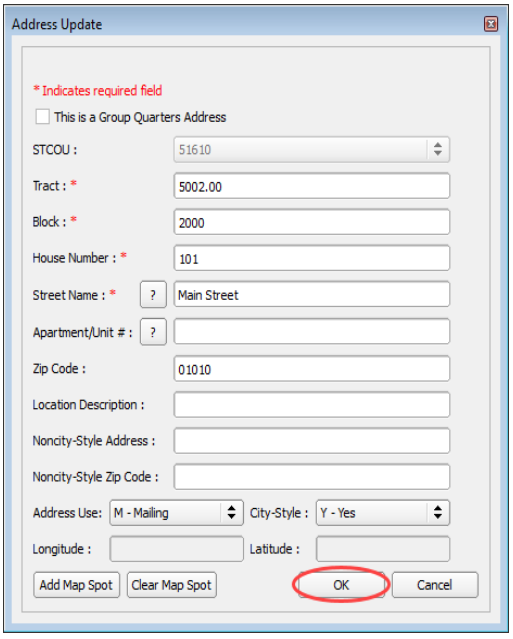
There are two ways to add addresses to the Census Address List. This section outlines both processes

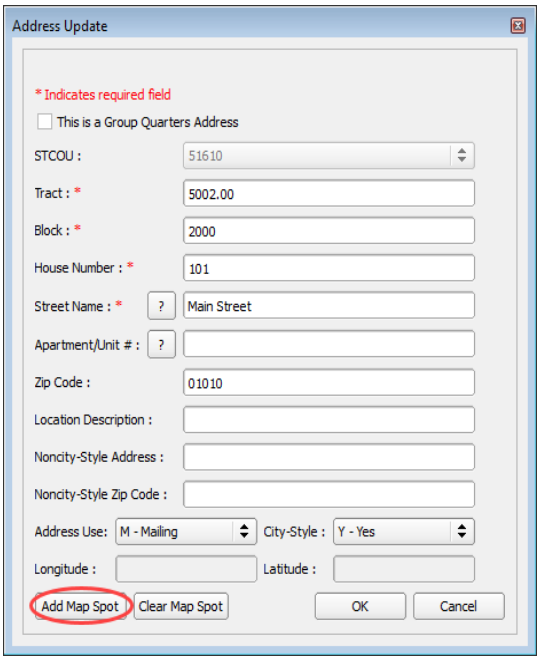
3.2.5.1. Add New Address(es) Manually

To add addresses manually to the Census Address List in GUPS, follow the steps in **Table 23**.

Table 23: Import Data into the User List

Step	Action and *Result*
Step 1	On the Census Address List, select the **Add** button.  (Training—Fictitious Information)

Step	Action and *Result*
Step 2	Complete the **Add Address Update Form**. Fields with an asterisk are required. 
Step 3	Click the **OK** button to save the new address. 

Step	Action and *Result*
Step 4	If you want to add a map spot, you may do so before or after entering in the address data. Select the **Add Map Spot** button and follow the steps in ***Table 21*** *Add/Modify Map Spots.*  (Training—Fictitious Information)

3.2.5.2. Add to the Census List from the User Address List

If the Census Address List is missing addresses that are in your User Address List, it may be easier to add them with the click of a button rather than manually entering all the information into the Census Address List.

Note: The **Add to Census List** functionality is only available to users who used the field-mapping option during import.

By default, all user imported addresses imported using the field-mapping option with a Latitude and Longitude coordinate, display on the map with an open blue triangle.

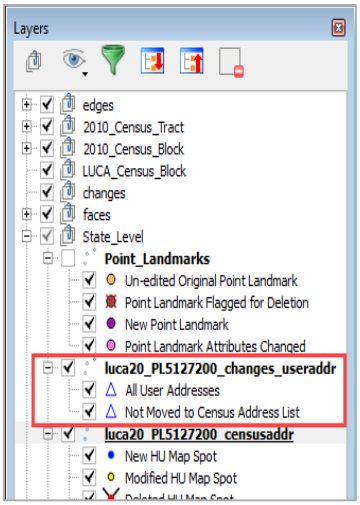


Figure 22. Layers Showing Latitude and Longitude Coordinates with Blue Triangle

If you want to display only the addresses on the User Address List not moved to the Census Address List, change the selection in the **Table of Contents** by clicking in the box next to the option you would like to view.

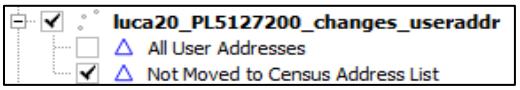
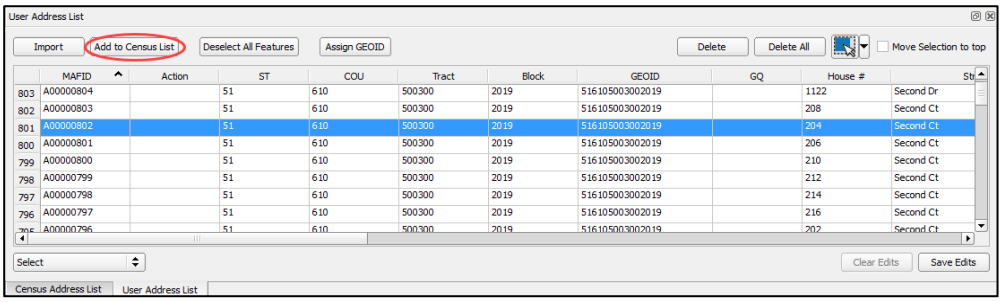
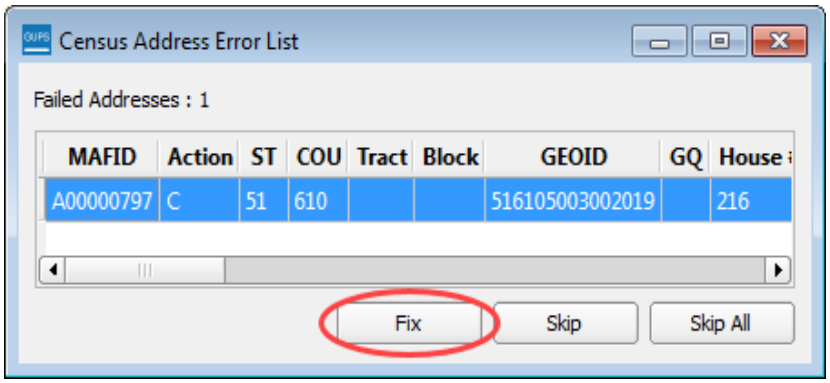
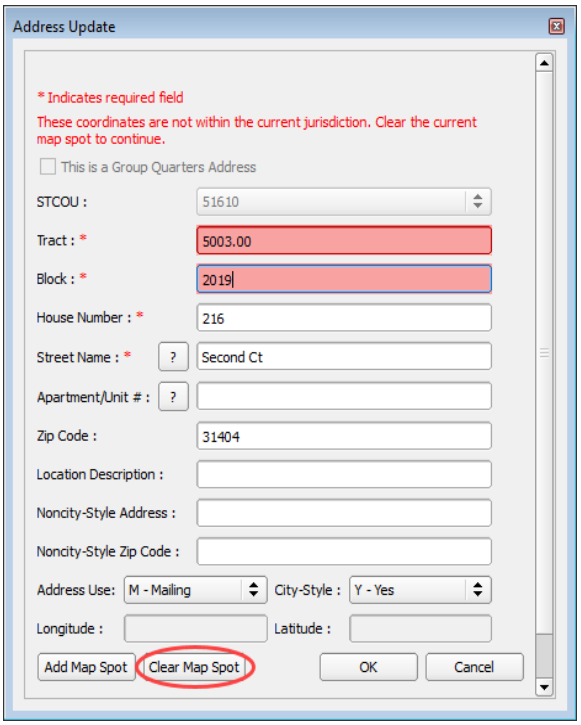


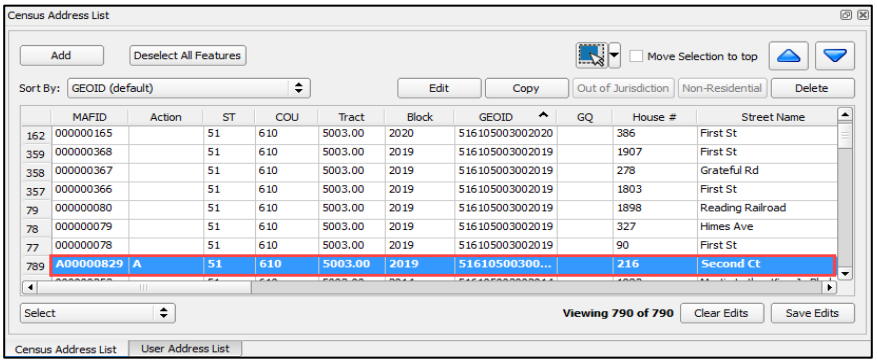
Figure 23. Selecting Option Level on Table of Contents

Refer to **Table 24** for instructions on how to move an address from the User Address List to the Census Address List.

Table 24: How to Move an Address from the User List

Step	Action and *Result*
	You can move an address from your User Address List to the Census Address List in GUPS. You can move records with all Action Codes, except records with an "**M**" Action Code. Records with an "**M**" Action Code have already been moved to the Census Address List.
Step 1	Click on the first column or row number of the record you want to move then select the **Add to Census List** button.  (Training—Fictitious Information)

Step	Action and *Result*
Step 2	If there is an error with the record you selected, the Census Address Error List opens. Select the address by left clicking on the row. It highlights in blue.  (Training—Fictitious Information) Then select the **Fix** button. In this example, the coordinates associated with the address are not in the user's jurisdiction. You must either modify the location of the map spot or clear the map spot coordinates in order to add the address to the Census Address List. This example clears the map spot. After clearing the map spot, you also may need to input data into required fields.
Step 3	This example inputs the correct Tract Number and Block Number. Select the **OK** button to continue.  (Training—Fictitious Information)

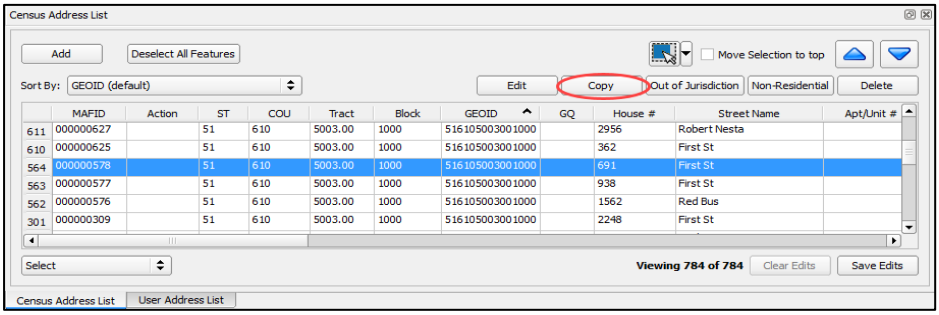
Step	Action and *Result*
Step 4	The updated record appears in bold on the Census Address List. It now has a letter "**A**" action code, showing it has been added to the Census Address List.  (Training—Fictitious Information)
	You can view the updated Census Address List. Check the **Move Selection to Top** check box. The newly added record displays at the top of the screen with an "**A**" action code for an added address.

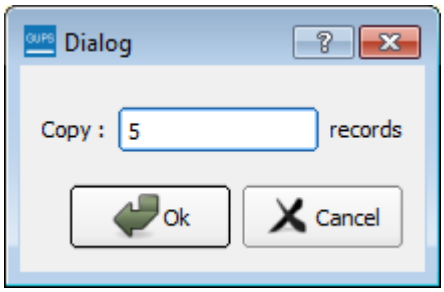
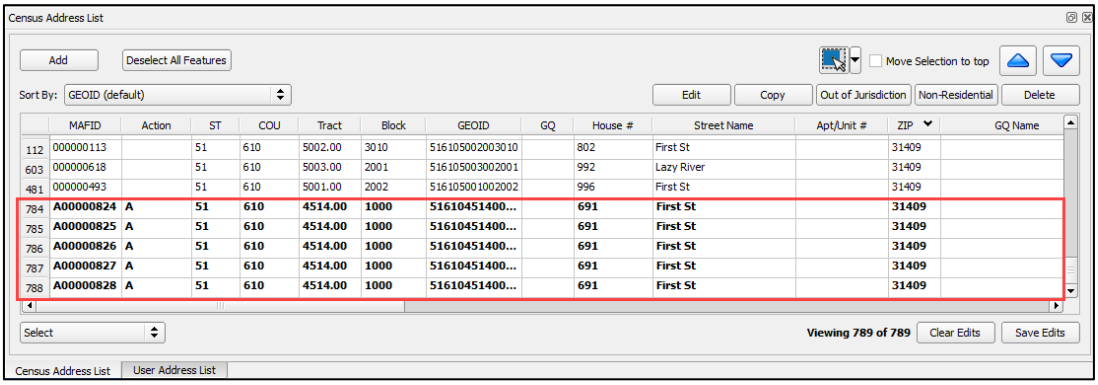
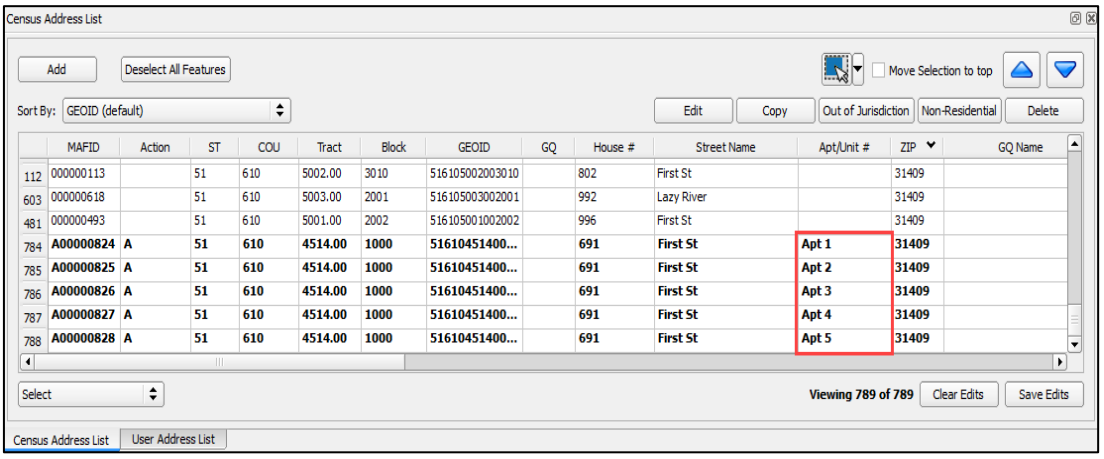
3.2.6 Copy an Address

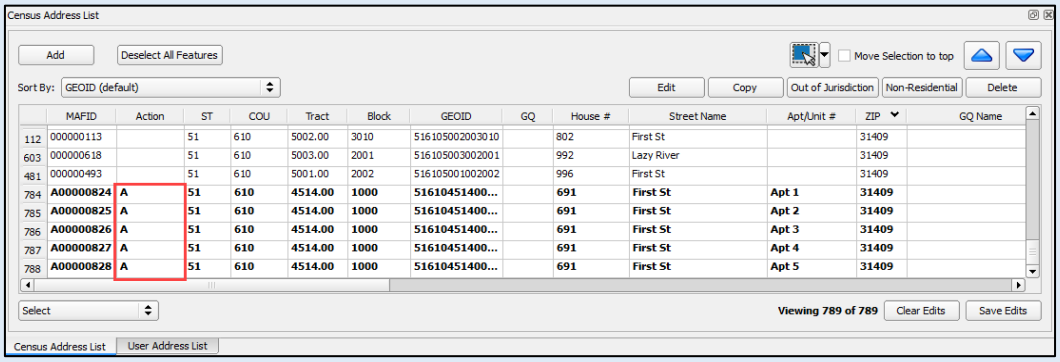
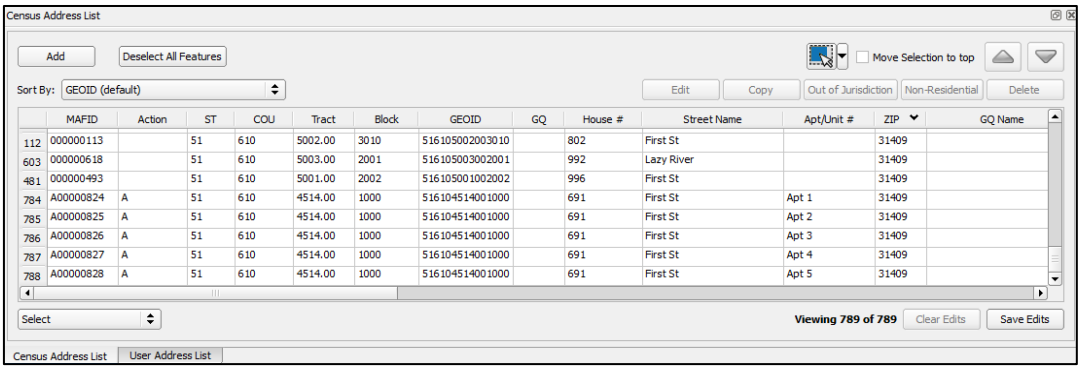
The GUPS provides a way for you to copy an existing address that has only minor changes. You can copy a selected address up to 99 times in one action. The process for copying an address one or 99 times is the same. If you need to copy an address more than 99 times, repeat the process until you reach the number of copies needed.

Table 25 is an example of how to utilize the Copy Address Functionality in GUPS.

Table 25: Utilize the Copy Address Function

Step	Action and *Result*
Step 1	Highlight a record from the Census Address List to copy.  (Training—Fictitious Information) Select the **Copy** button to copy an address. This example shows how to copy an address that has multiple housing units.

Step	Action and *Result*
Step 2	After selecting the **Copy** button, a Dialog screen opens asking how many records (copies) to make. Enter the number in the box, and select the **OK** button.  *The address copies are appended to the Census Address List as New Adds (Action Code = A).*  (Training—Fictitious Information)
Step 3	At this point, you must edit each address to make it an individual address and avoid supplying duplicate addresses. If these addresses were all in one apartment building, then adding an apartment number to each address would duplicate the addresses.  (Training—Fictitious Information)

Step	Action and *Result*
	You can confirm it has been added by looking at the Action column. The letter **"A"** means the address has been added.  (Training—Fictitious Information)
Step 4	After confirming the updated information is correct, select the **Save Edits** button to save the updates to the Census Address List. (Bolding removed)  (Training—Fictitious Information)

3.3 GUPS Special Address Scenarios

There are two special address situations that must be described in a bit more detail than a standard address. These include transitory locations and ungeocoded addresses. The following subsections discuss the specific actions for updating these two types of addresses.

3.3.1 Transitory Location Addresses

Transitory Locations (TLs) are sites that contain movable or mobile housing, or portable housing units, including boats, motorized recreational vehicles (RVs), tents, trailers that are pulled by cars or trucks, or any other type of portable housing used as a living quarters.

The Enumeration of Transitory Locations (ETL) is a census operation designed to provide coverage for enumeration for locations where people live in non-traditional housing that is transient or movable in nature. The types of TLs that are included in the ETL include:

- RV parks.
- Marinas.
- Campgrounds.

Although you may find TLs that are not named on your address list, a few examples of named TL addresses include:

- Mermaid's Marina, 23 South Main Street, 99997.
- The Royal Winter Campground, 76 Alexander Blvd, 99997.

Individual addresses at TLs are identified as Transitory Unit (TU) addresses. The MAF may include TU addresses as housing units (HUs). TU addresses identified as HUs pass the address filter as residential housing units and therefore may be included on your Census Address List. Individual TU addresses include:

- Pads.
- Sites.
- Slips.
- Units.
- Rooms.

Examples of TU addresses include:

- Mermaid's Marina, Slip 63, 23 South Main Street, 99997.
- The Royal Winter Campground, Site 234, 76 Alexander Blvd, 99997.

The Census Bureau will not accept individual TU addresses for pads, sites, slips, units, or rooms for the LUCA operation. TU addresses are identified and documented during the ETL.

You may delete an existing TU address if you are certain that the address is a TU or does not exist. Do not make corrections to any other fields on the Census Address List for a deleted address.

- Enter a "**D**" in the **Action** field for the address(es) that need deletion.

No other action is required.

Updating Transitory Location Addresses

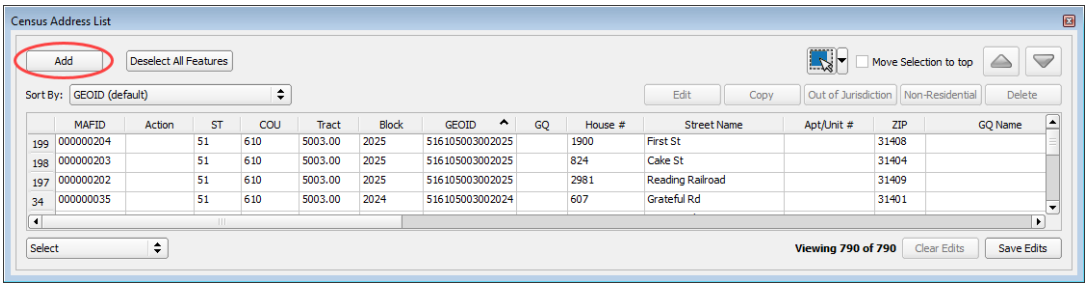
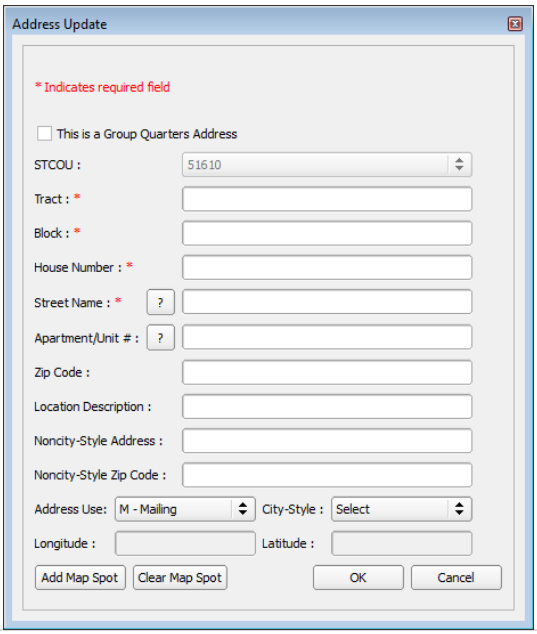
There are several updates you may make to TL addresses including:

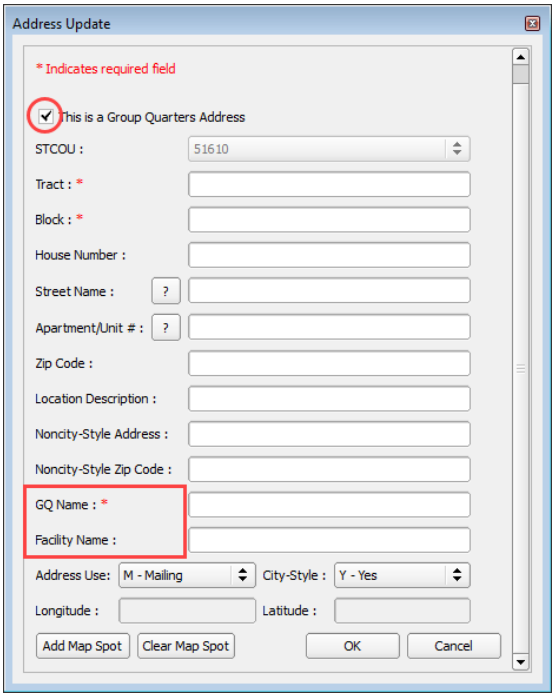
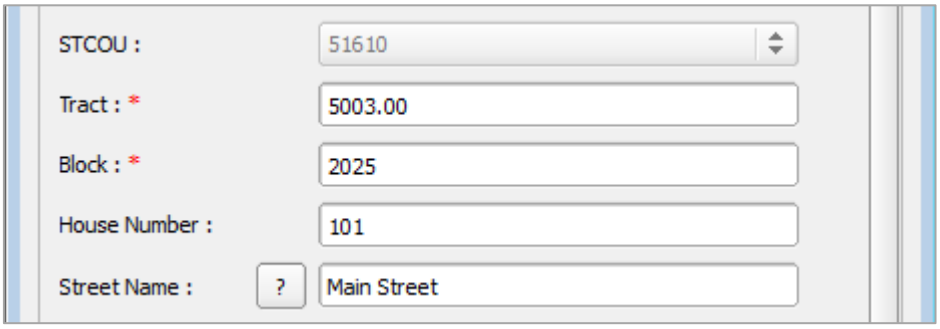
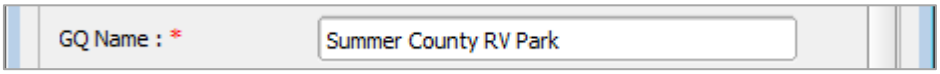
- Adding missing TL addresses. These include main office addresses only, located at the TL.
- Updating incorrect TL addresses by deleting and adding the correct TL address.
- Deleting TL addresses that no longer exist or are uninhabitable.

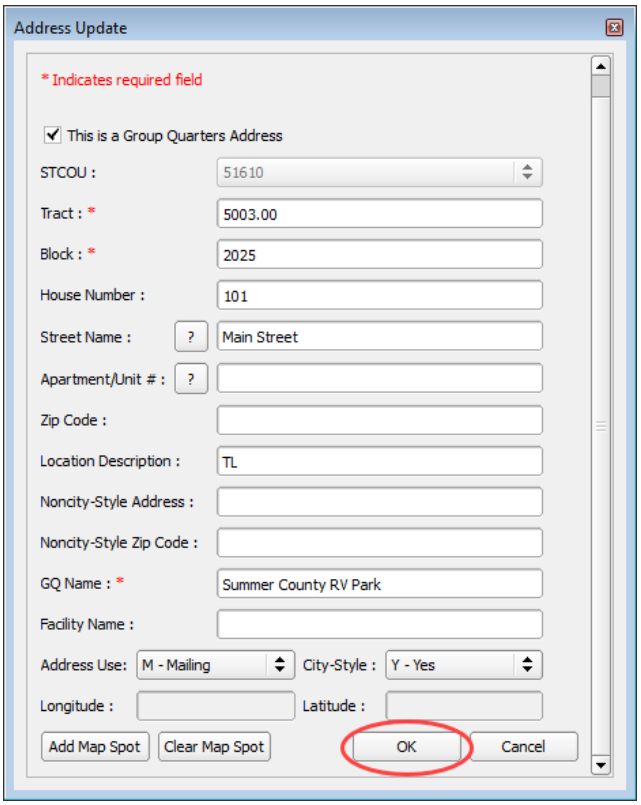
3.3.1.1 Adding a Transitory Location Address

Adding a transitory location address is similar to adding a standard Group Quarters address with a few exceptions. Follow the steps in **Table 26** to add a transitory location.

Table 26: Add a New Transitory Location

Step	Action and *Result*
Step 1	Select the **ADD** address button in the **Census Address List**.  *The Address Update Window opens.* 

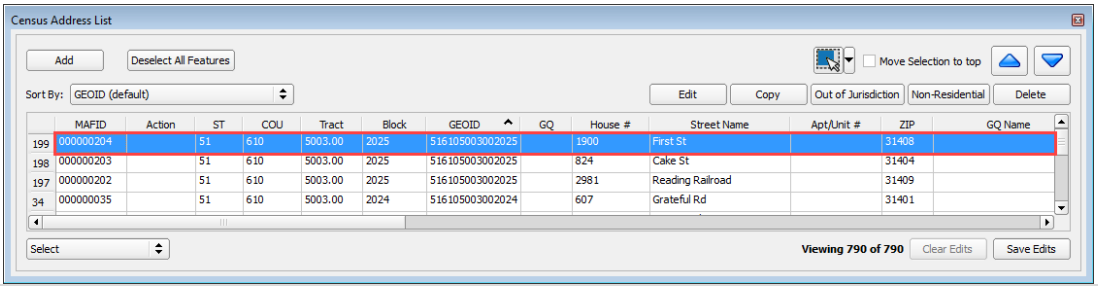
Step	Action and *Result*
Step 2	Select the checkbox for **This is a Group Quarters Address**. The fields “GQ Name” and “Facility Name” appear. 
Step 3	Enter a House Number, Street Name, and Geocode information (State, County, Tract and Block). You may use the Add Map Spot button to add a map spot. 
Step 4	In the Location Description field, type **“TL”.**
Step 5	In the GQ Name field, enter the name of the transitory location. 

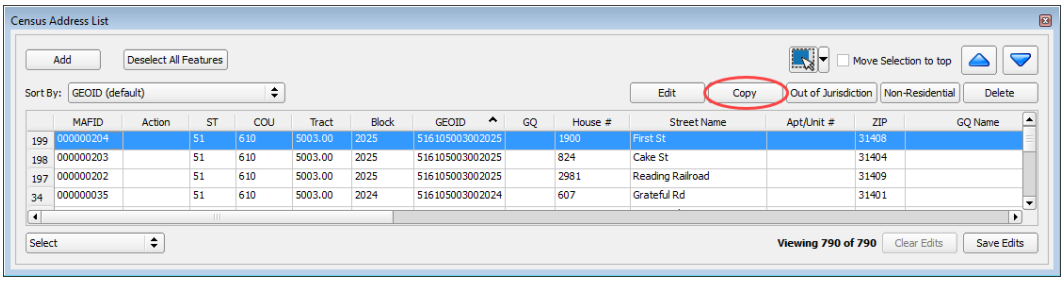
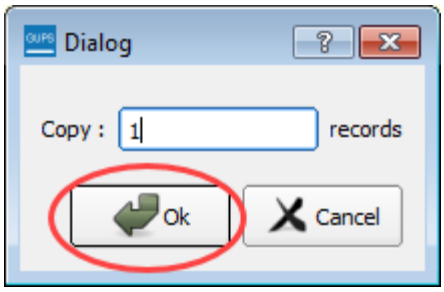
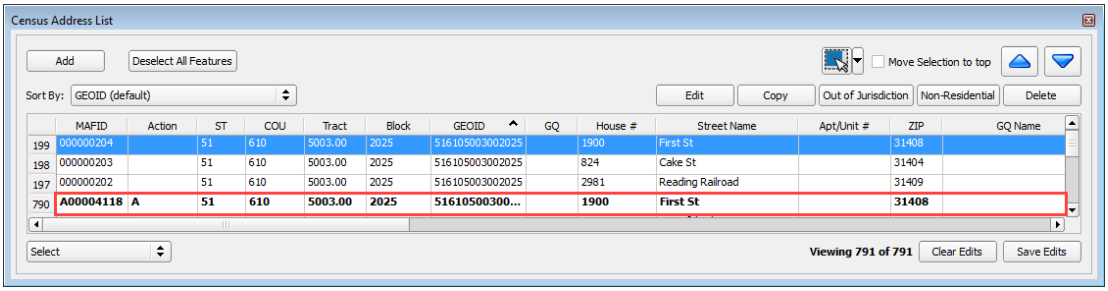
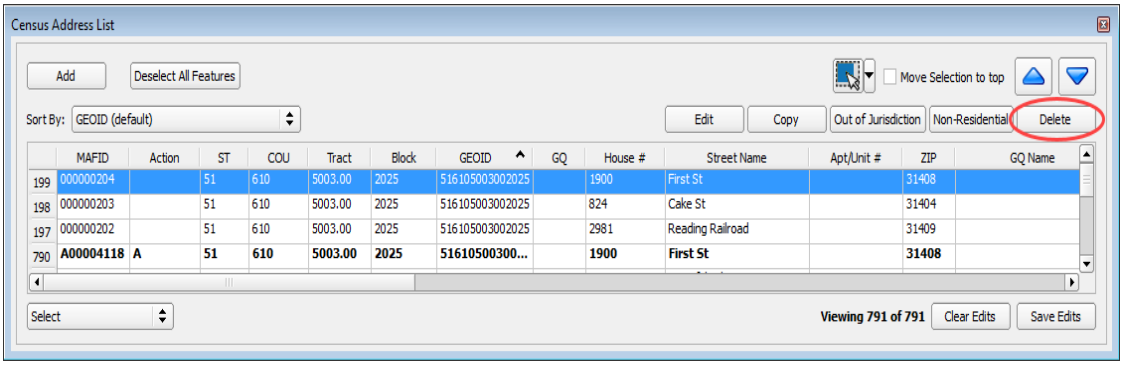
Step	Action and *Result*
Step 6	After completing the fields, select the **OK** button to add the address. 

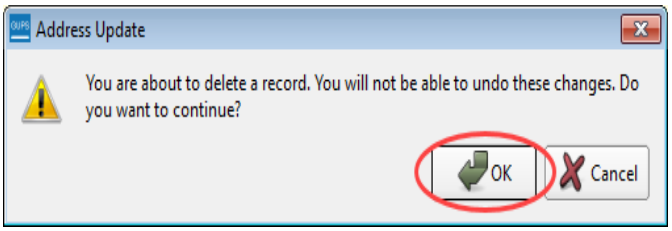
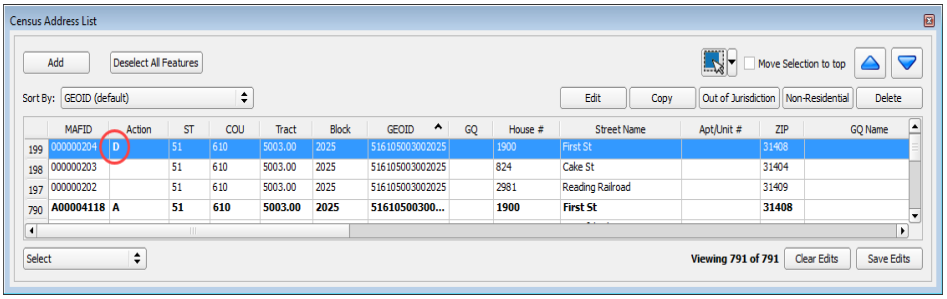
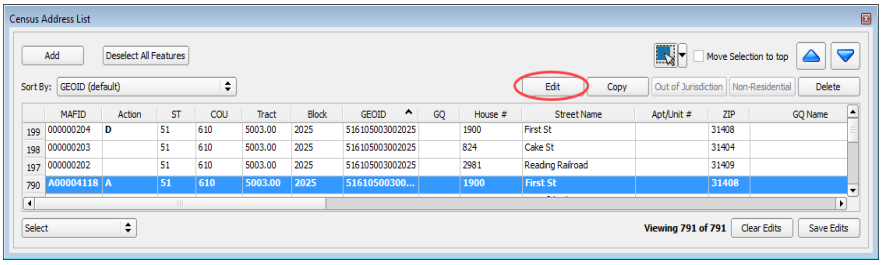
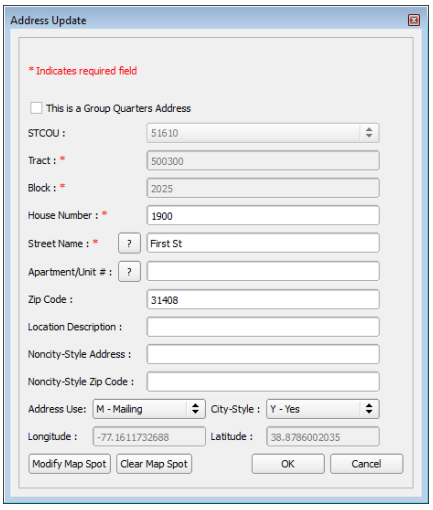
3.3.1.2 Correcting a Transitory Location Address

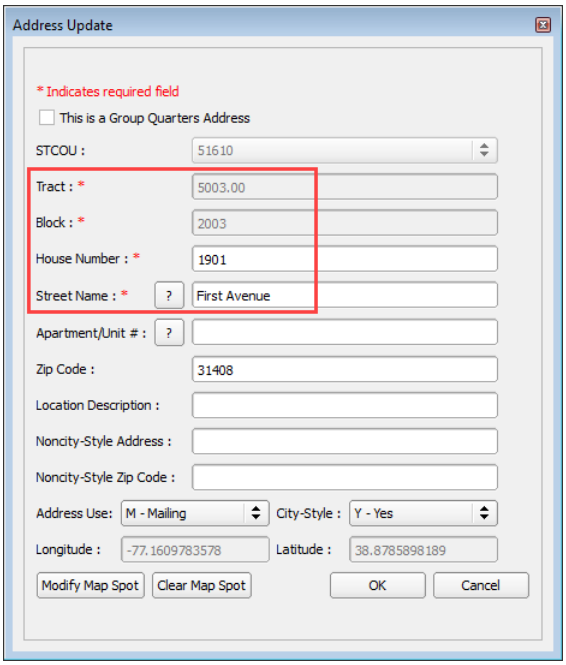
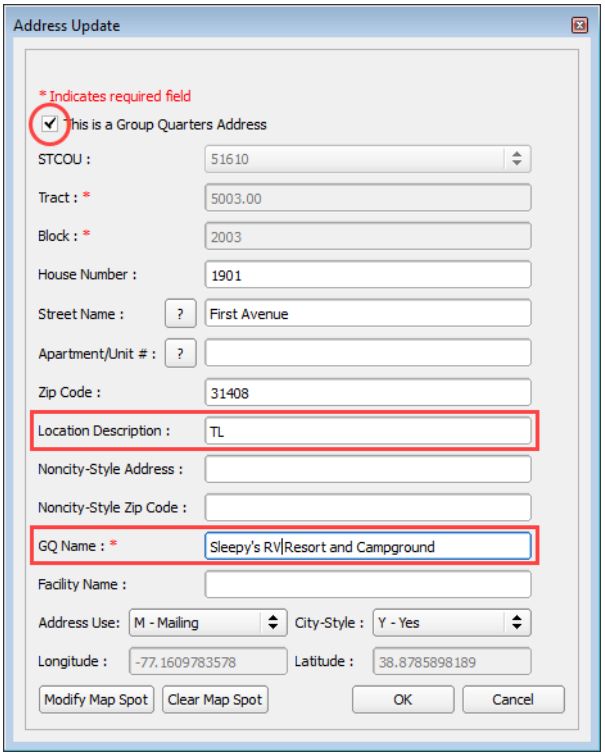
You may not edit an existing transitory location address. In order to make a correction to a transitory location address, you must first delete the incorrect address using the "**D**" action code, then add the entire corrected address using the "**A**" action code.

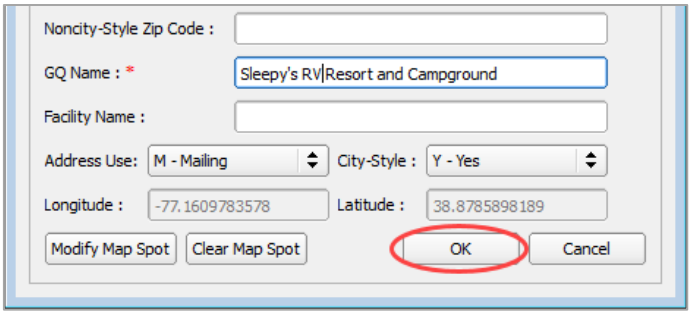
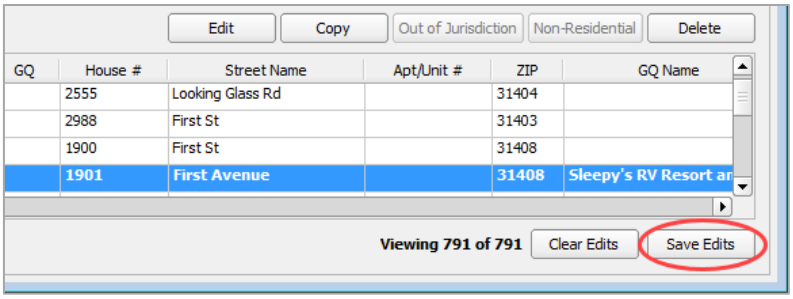
Table 27: Correcting a Transitory Location Address

Step	Action and *Result*
Step 1	Select the address in the Census Address List that needs to be corrected. 

Step	Action and *Result*
Step 2	Select the **COPY** button. 
Step 3	Make 1 copy. (This will create an exact replica of the current address, which you can then edit.) 
Step 4	The copy will appear in **BOLD** in the Census Address List. 
Step 5	With the original address still selected, click the **DELETE** button. 

Step	Action and *Result*
	Select **OK** in the pop-up message window.  The original address will be marked with a '**D**' Action for deletion. 
Step 6	Select the newly created copy, and click the **EDIT** button. 
Step 7	The **Address Update** window opens with the address information prepopulated. 

Step	Action and *Result*
Step 8	Make edits where needed, including moving the map spot if it needs to be moved. 
Step 9	Select the checkbox for **This is a Group Quarters Address**. Fill in "**TL**" in the **Location Description** field, and the name of the transitory location in the **GQ Name** field. 

Step	Action and *Result*
Step 10	Select the **OK** button to apply the changes to the Census Address List 
Step 11	Select the **SAVE** button in the Census Address List to save your edits. 

3.3.1.3 Deleting a Transitory Location Address

The main office and the campground located at 101 Pampas Place no longer exists.

- Select the address(es) that need deletion, and click the **"Delete"** button.

No other action is required.

3.3.2 Ungeocoded Addresses

The Census Address List for state and county participants may contain ungeocoded addresses that are missing census tract and census block codes. Ungeocoded addresses are located at the end of the address list file. You may use the "**C**," "**D**," "**N**," and "**J**" action codes to include geocodes (census tract and census block) for addresses (C), delete (D) addresses, identify nonresidential (N) addresses, and to identify addresses not in your jurisdiction (J). When entering the "**D**," "**N**," and "**J**" action codes make no other entries. Refer to *Chapter 4, Reviewing and Updating the Address List and Paper Maps* in the *Digital Respondent Guide* for further details on using the actions codes to make updates to the Census Address List.

3.3.3 Including Geocodes for Ungeocoded Addresses on the Census Address List

To geocode ungeocoded addresses, select the address record and provide the geocode information for the census tract and census block. Alternatively, you may add a map spot the address by selecting the "**Edit**" button, and then the "**Add Map Spot**" button in the Address Update window. Please refer to **Section 3.2.3** for directions on adding a map spot.

3.4 Update Linear Features

When reviewing linear features (**Edges** layer) on the Census Bureau shapefiles, first determine whether any features are missing or need to be deleted. It is important that Census Bureau data reflect the most recent linear features to ensure the identification and location of new or previously missed housing units along these features. Pay particular attention to areas that have experienced recent population growth or construction activities, as these are the most likely to possess new or altered linear features (e.g., new subdivisions, traffic circles converted to straight ways, or privately maintained roads that serve as public streets, excluding private driveways).

You may also add attribute updates (e.g., name, class code, and address ranges) for selected features.

To aid in the review of linear features, GUPS allows you to import local street centerline files, hydrography layers, imagery, and other user-provided geospatial data for reference and comparison against the Census Bureau data. In your review, please note:

1. **S1100, S1200 and S1400** – If you add road features with a MAF/TIGER Feature Class Code (MTFCC) of S1100 (Primary Road), S1200 (Secondary Road), or S1400 (Local Neighborhood Road/Rural Road/City Street), you must supply a feature name. The feature name should be a proper name or route number.
2. **Spatial Inaccuracies** – The Census Bureau **will not process** the extensive spatial realignment of features to enhance spatial accuracy. If a feature is in the incorrect location, delete the feature and add it in the correct location.

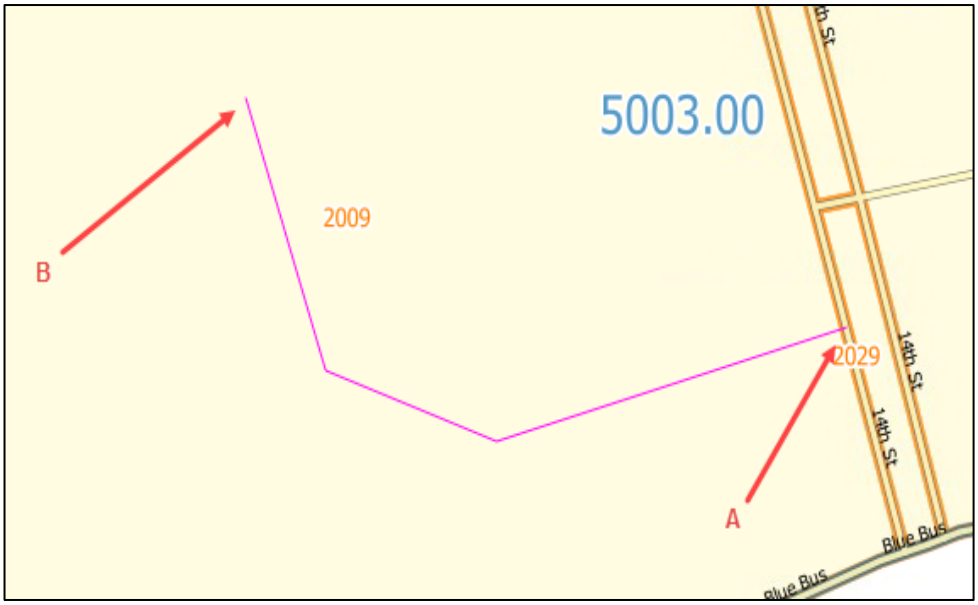
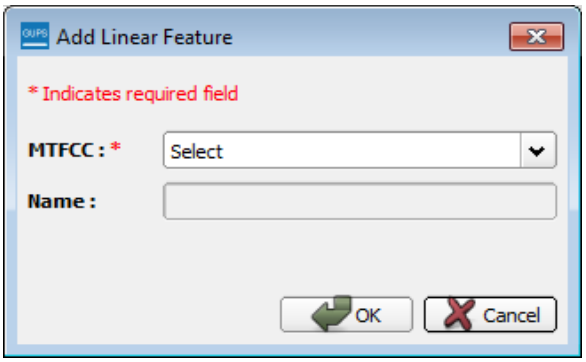
Note: It is very important that participants do **NOT** realign features to enhance spatial accuracy. Correct the location only if the feature is **EXTREMELY** spatially inaccurate and/or the current location affects tabulation of housing units to the correct geography.

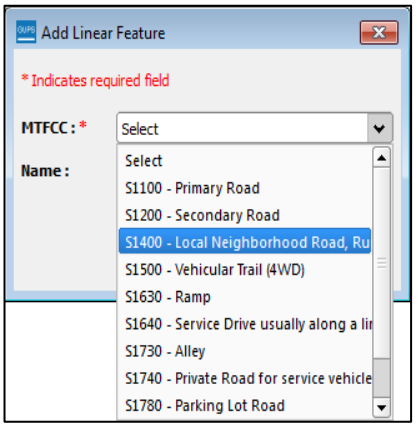
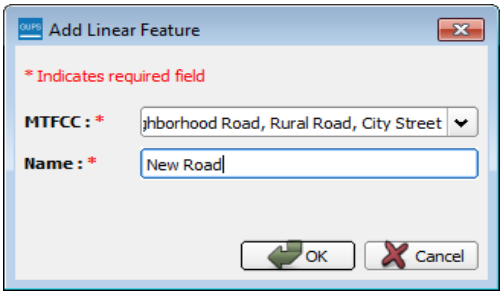
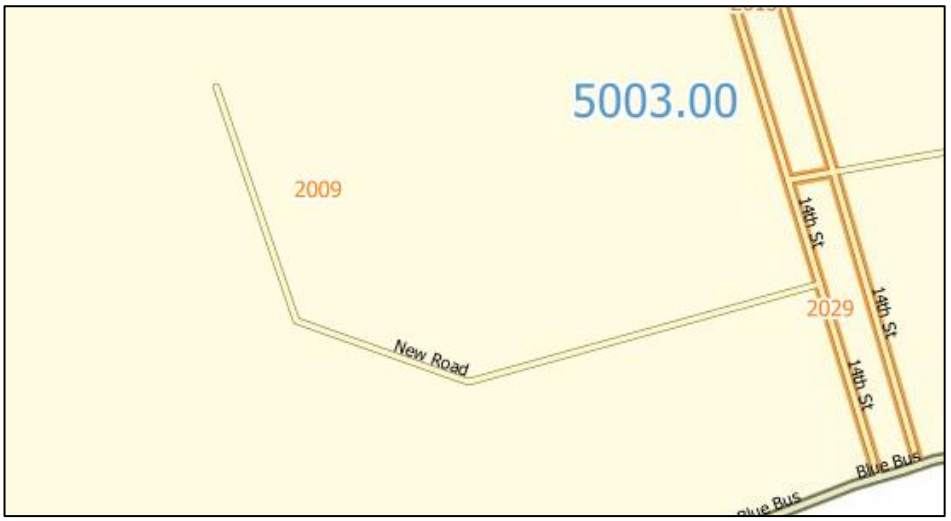
3. **Address Range Changes** – The Census Bureau accepts address range data as part of the **Linear Feature Update** layer. As with other linear feature updates, you must supply the required attributes and corresponding change type for the update.

3.4.1 Add a Linear Feature

Follow the steps in **Table 28** to add a linear feature.

Table 28: Add a Linear Feature

Step	Action and *Result*
Step 1	Select the **Add Linear Feature** button from the LUCA Toolbar.
Step 3	Zoom into the map where a new road must be added. Left-click the mouse at the starting point of the line (A) and continue to left-click the mouse at each vertex (shape) point of the line. When you complete the new line, right-click the mouse (B). The right-click tells GUPS you are finished drawing.  (Training—Fictitious Information) *The **Add Linear Feature** dialog box opens.* 

Step	Action and *Result*
Step 4	In the **MTFCC** field drop-down menu, choose the appropriate code for the feature. 
Step 5	Type the name of the new linear feature in the **Name** field if you know the feature name. Otherwise, leave blank. (MTFCC S1100, S1200, and S1400 require a street name.) Be sure when entering the feature name to include the feature type (e.g., street, road, avenue). 
Step 6	Click the **OK** button at the bottom of the **Add Linear Feature** dialog box. *The added linear feature and the name you assigned appear on the map*.  (Training—Fictitious Information)

Step	Action and *Result*
	Adding a linear feature coincident with a boundary – GUPS will not allow one linear feature to be placed over another. For example, if you attempt to add a road overlaying a legal boundary line, a pop-up box warns you ***Added Line Overlays an Existing line***. If you are adding a linear feature coincident with a boundary, follow the instructions for updating linear feature attributes instead (**Table 32**). Once you select the boundary edge that you want to add a street on top of, update the MTFCC in the **Update Attributes** pop-up to one of the "**S**" class feature codes (e.g., S1400) and add a name in the **FULLNAME** field.

3.4.2 Splitting a Linear Feature

If only a portion of a road segment needs to be edited, you can use the Split Linear Feature tool to break the segment into two parts allowing you to edit only the part that requires editing. Follow the steps in **Table 29** to learn how to split a linear feature.

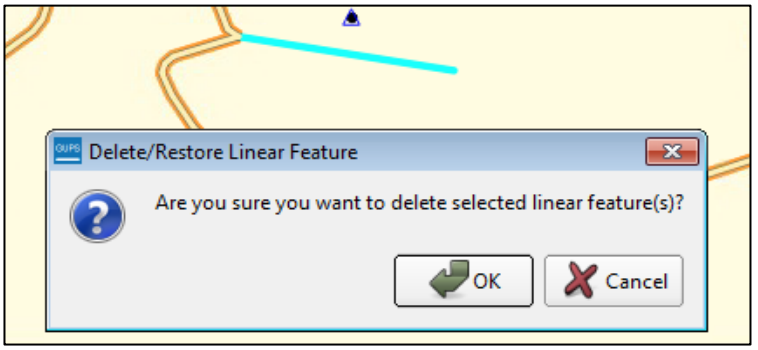
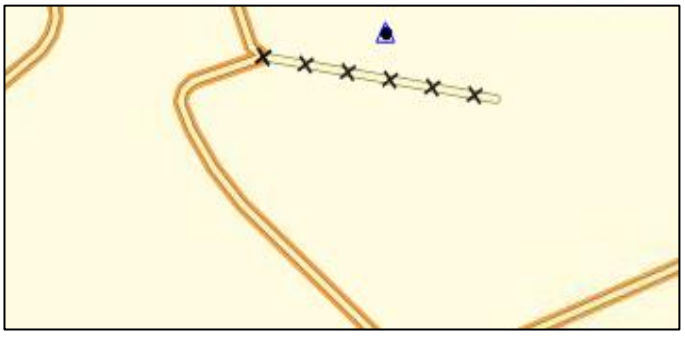
Table 29: Change the Attributes of a Linear Feature

Step	Action and *Result*
Step 1	Select the **Split Linear Feature** button from **LUCA Toolbar.**
Step 2	Then click on the point on the linear feature where you would like to split it. *One side of the segment will turn blue, signifying the segment has been split at that point.* (Training—Fictitious Information) When you split a road, attributes from the original feature will be applied to both segments of the split feature. This includes name(s), MTFCC, and address range(s).

3.4.3 Delete a Linear Feature

To delete a linear feature, follow the steps in **Table 30**.

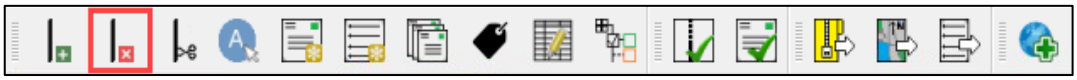
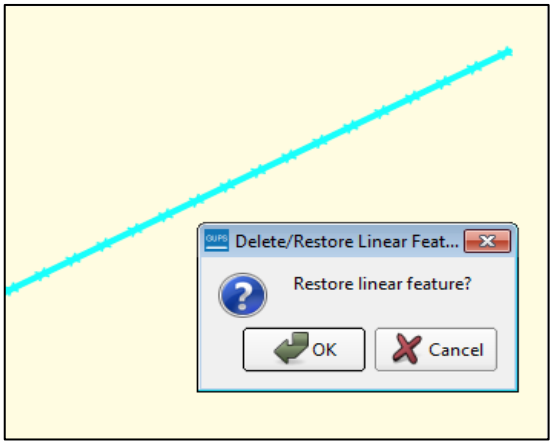
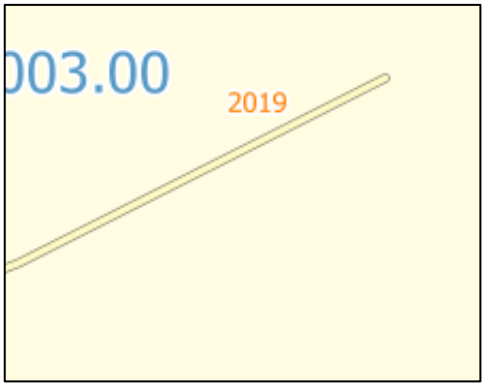
Table 30: Delete a Linear Feature

Step	Action and *Result*
Step 1	Select the **Delete/Restore Linear Feature** button on the **LUCA toolbar**.
Step 3	Left-click the linear feature that you want to delete. The example below shows unnamed road to delete. *The clicked linear feature turns blue and the **Delete Linear Feature** pop-up box opens, asking are sure you want to delete selected linear feature(s)?* 
Step 4	Click the **OK** button. *The line is marked for deletion in the attribute table, the blue color disappears, and the line now has black crosses signifying it has been "deleted."* 
	A deleted linear feature remains in the Census shapefile. GUPS assigns a Delete Line flag to the feature in the attribute table. The Census Bureau deletes the line during processing. **Note:** If you have multiple linear features to delete, you may click the **Delete Linear Feature** button on the toolbar once, then press **CTRL** and click each of the features you want to delete. GUPS will delete all of the linear features selected. You may also drag your cursor over multiple linear features to select them.

3.4.4 Restore a Deleted Linear Feature

To restore a deleted linear feature, follow the steps in **Table 31**.

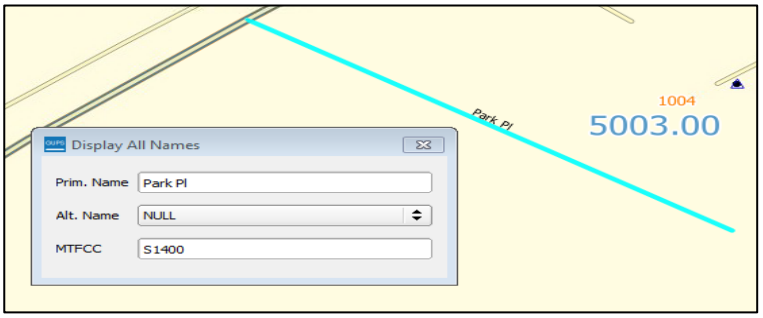
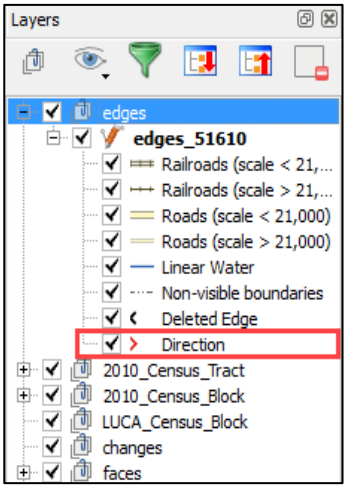
Table 31: Restore a Deleted Linear Feature

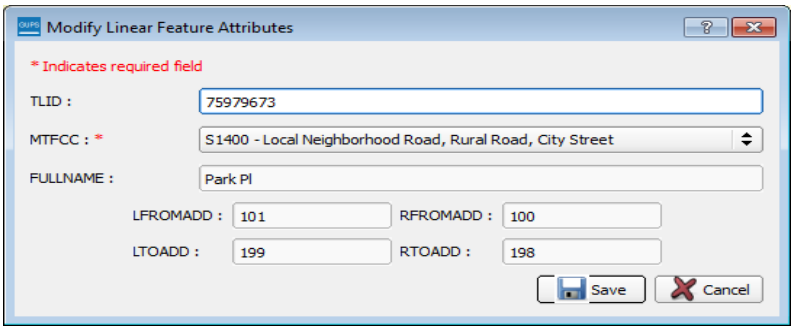
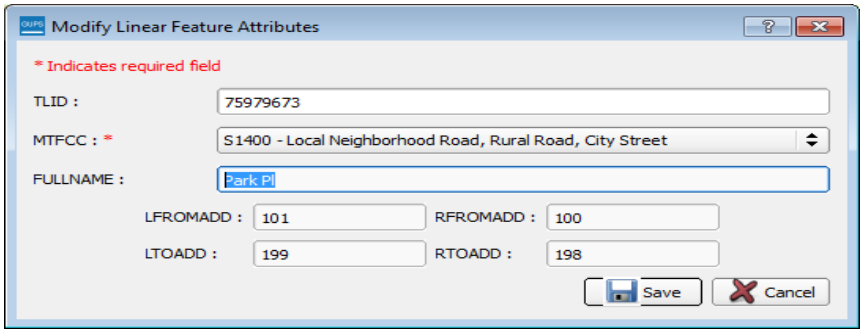
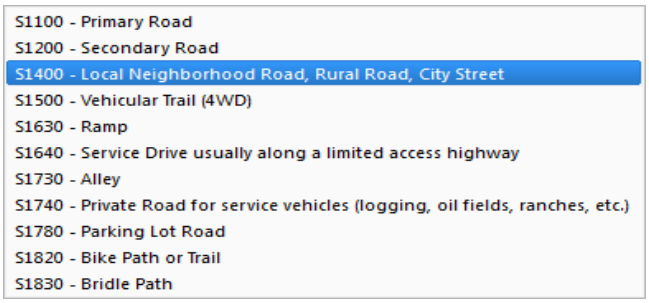
Step	Action and *Result*
Step 1	Select the **Delete/Restore Linear Feature** button in the **LUCA Toolbar**. 
Step 2	Left-click on the deleted feature. *The deleted feature turns blue and the **Delete/Restore Linear Feature** dialog box opens. The box asks you to confirm that you want to restore the line*. 
Step 3	To restore the linear feature, click the **OK** button.  *GUPS removes the **Delete Line** flag from the attribute table and restores the line.*

3.4.5 Change the Attributes of a Linear Feature

Follow the steps in **Table 32** to change the attributes (e.g., the name, MTFCC, or address range) of a linear feature.

Table 32: Change the Attributes of a Linear Feature

Step	Action and *Result*
Step 1	If you plan to change the name of a linear feature, check to see if it has an alternate name. To do this, click the **Display All Names** button on the **LUCA** toolbar. Then click on the linear feature on the map. *The selected feature turns blue and the **Display All Names** dialog box opens, showing the primary name in the **Prim. Name** field and the alternate name, if one is present, in the **Alt. Name** field.*  (Training—Fictitious Information) To see any additional alternate names, click the drop-down arrow to the right of the **Alt. Name** field. If no alternate name exists, **NULL** appears in the **Alt. Name** field.
Step 2	If you plan to provide an address range for a linear feature, check the checkbox next to **> Direction** in the **Edges** layer in the **Table of Contents**. *This activates the arrows that indicate the direction of road segments*. 

Step	Action and *Result*
Step 3	Click on the **Modify Linear Feature Attributes** button on the **LUCA** toolbar.
Step 4	Click the linear feature on the map whose attributes you want to edit. *The **Modify Linear Feature Attributes** dialog box opens with the TIGER Line Feature ID (TLID) of the feature selected. The **FULLNAME** field populates if the feature has a name. If the feature is unnamed, the field is blank. The **MTFCC**, **LTOADD**, **RTOADD**, **LFROMADD**, and **RFROMADD** fields show the assigned values for each.* 
Step 5	Update the **FULLNAME** field. If the field is blank, type in the new name. If the field is already populated, highlight the existing name and hit the **Delete** key on your keyboard. You may also backspace over the name to clear the field. Then type in the new name. 
Step 6	If you need to correct the **MTFCC** code, click on the down arrow to the right of the field to open the drop-down menu and select the correct MTFCC from the menu. 

Step	Action and *Result*
Step 7	Change the address range for the linear feature, if necessary. Type in potential address ranges in the **LTOADD** (left to address); **RTOADD** (right to address); **LFROMADD** (left from address); **RFROMADD** (right from address) fields based on the directional arrows. The directional arrows show the origin node (FROM) and the end node (TO).
Step 8	Click the **Save** button at the bottom of the **Modify Linear Feature Attributes** dialog box.
	The address ranges for all features are blank in the geographic partnership shapefiles because the ranges are stored in tables separate from the shapefiles. You can provide address ranges in these fields, but be aware that the Census Bureau may already have the address ranges. It is important to note which node is the **FROM** node and which is the **TO** node (Based on the red directional arrows) so that the address ranges are associated with the correct side of the street and the correct census block. **Note:** Provide potential address ranges for block sides, such as 0-98, 100-198, etc. for even parity, and 1-99, 101-199, etc. for odd parity address ranges. Do not provide actual address ranges.

3.5 How to Import User-Provided Data into GUPS

GUPS is a full GIS software. It provides all of the standard GIS software capabilities including importing your own data. The sections below the different types of data you can import into GUPS and how to do it.

3.5.1 The Add Layer Drop-down Menu

To import your own image, geodatabase, web-mapping service, or other data layers into GUPS, use the **Add Data Layer** drop-down menu.

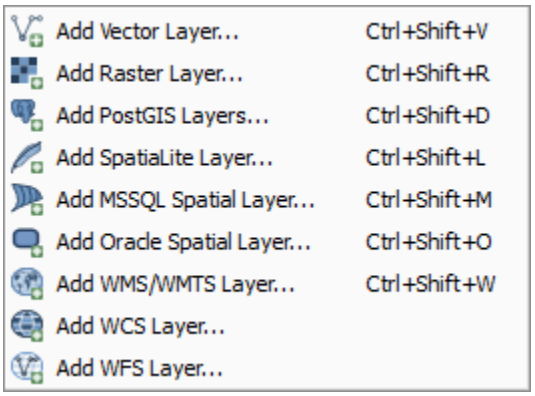


Figure 24. Add Data Layer Drop-down Menu

The **Add Data** toolbar appears under the Layer tab on the main menu toolbar. **Table 33** describes each function.

Table 33: Add Data Toolbar Buttons

Button	Name	Function / Description
	Add Vector Layer	Allows you to add shapefile and geodatabase files to your GUPS project.
	Add Raster Layer	Allows you to add raster datasets such as imagery.
	Add PostGIS Layer	Add PostGIS layer.
	Add SpatiaLite Layer	Add data from a SpatiaLite database.
	Add MS SQL Layer	Add Microsoft (MS) Structured Query Language (SQL) 2008 Spatial data.
	Add Oracle Spatial Layer	Add a spatial layer from an Oracle database.
	Add WMS/WMTS Layer	Add Web Mapping Services (WMS) and Web Mapping Tile Services (WMTS). GUPS supports publicly accessible and secured WMS services.
	Add WCS Layer	Add Web Coverage Services, which provide access to raster data useful for client-side map rendering.
	Add WFS Layer	Add Web Feature Services.

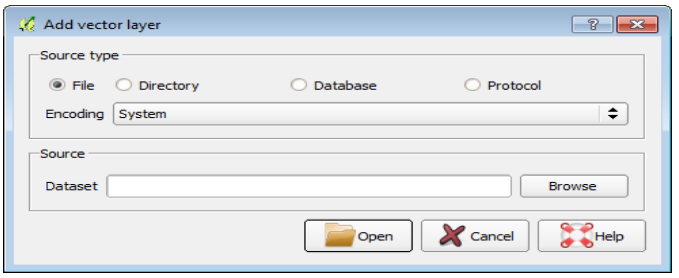
3.5.2 How to Import User-Provided Data Layers

GUPS supports vector data in a number of formats, including those supported by the OGR library data provider plugin, such as ESRI shapefiles, MapInfo MIF (interchange format), and MapInfo TAB (native format). It also supports PostGIS layers in a PostgreSQL database and SpatiaLite layers. Additional data provider plugins provide support for additional data types (e.g., delimited text).

Note: You May Only Upload One User-Provided Data Layer at a Time. If you have multiple data layers that you wish to upload, note that GUPS will only allow you to upload one layer at a time.

Below are the steps to import the most commonly used data formats. To upload shapefile or geodatabase data layers, follow the steps in **Table 34**.

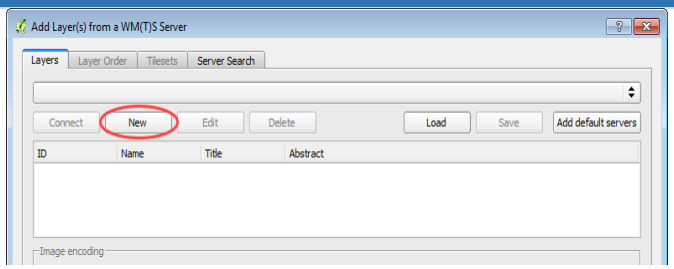
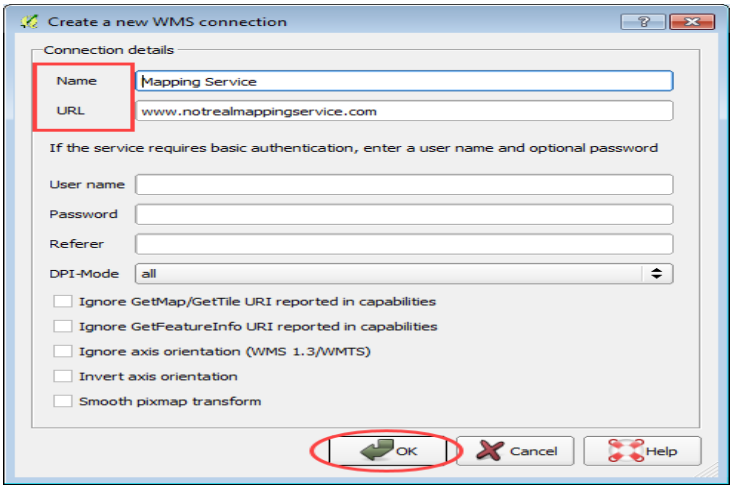
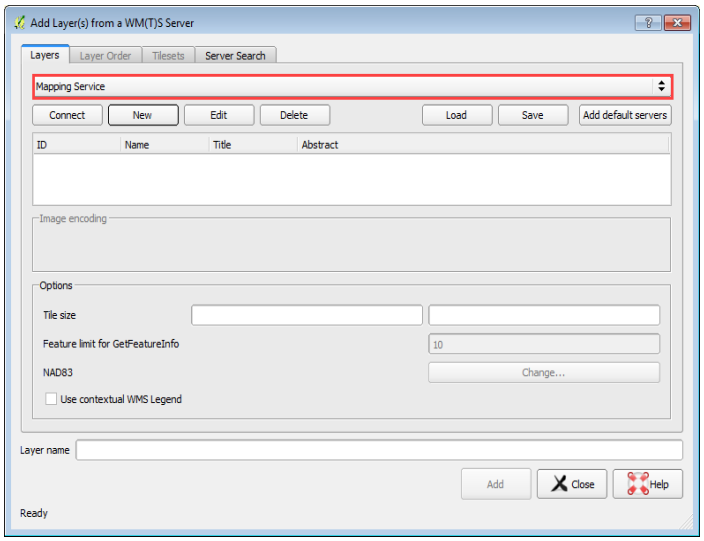
Table 34: Load Shapefiles/Geodatabase Layers

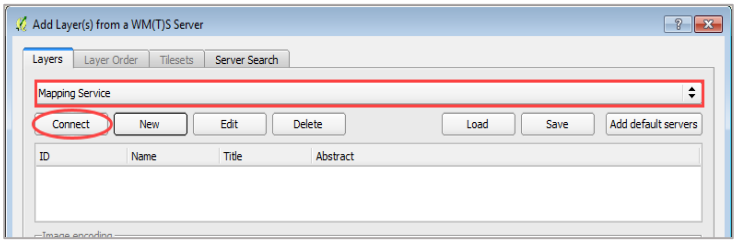
Step	Action and *Result*
Step 1	Begin the upload. Click the **Add Vector Layer** button on the **Add Data** toolbar. *The **Add Vector Layer** dialog box opens.* 
Step 2	In the **Encoding** drop-down menu, the default value is **System**. If you receive an error message when opening your file, use the drop-down to select UTF-8. *UTF-8 populates the **Encoding** field*.
Step 3	Click the **Browse** button and navigate to the folder containing the shapefile or geodatabase on your computer.
Step 4	Left-click the file you want to upload then click the **Open** button. *The **Table of Contents** and the **Map View** window adds the shapefile/geodatabase.*

To load data from a web mapping service, follow the steps in **Table 35**.

Table 35: Load Data from a WMS/WMTS

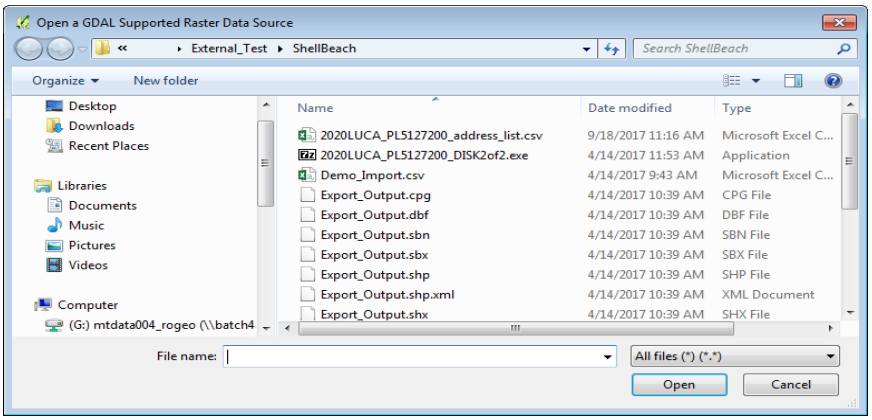
Step	Action and *Result*
Step 1	To begin the upload, click the **Add WMS/WMTS Layer** button on the **Add Layer** toolbar. *The **Add Layers from a WM(T)S Server** dialog box opens*.
Step 2	Select the web mapping service. Click the **Layers** menu then click the **New** button under the tab. *The **Create a new WMS Connection** dialog box opens*.

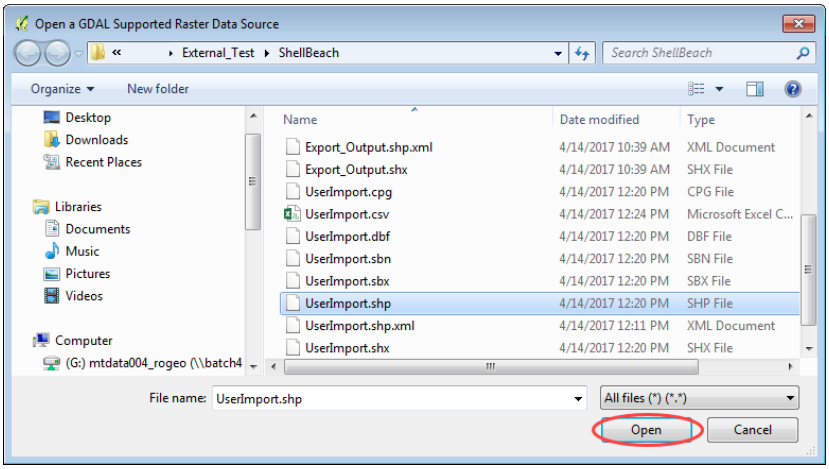
Step	Action and *Result*
	
Step 3	In the **Name** field, type a name for the web mapping imagery service. In the **URL** field, type the URL for the service. If the service requires a user name and password, type them in the fields provided. Click the **OK** button.  *The drop-down menu that appears just below the **Labels** tab, adds the service for web mapping services*.  **Note:** If you are working inside a firewall, a prompt may ask you to enter a user name and password to obtain resources from outside the firewall.

Step	Action and *Result*
Step 4	Select the imagery service you added in the drop-down menu. *The available layers appear in the **ID/Name/Title/Abstract** box*. 
Step 5	Click on the layer you want to display then click the **Add** button. *The **Map View** and the **Table of Contents** adds the WMS.*
	When added, the WMS displays over the top of all other active layers in the Map View. To display it below these layers, click on the WMS layer and, while holding down the mouse button, drag it to the bottom of the **Table of Contents**.

If you do not have access to a web mapping service, have a poor Internet connection, or work under a restrictive firewall, you can still add other types of imagery files to GUPS (e.g., a county or state imagery dataset). See county imagery from the U.S. Geological Survey at: <https://www.usgs.gov/science-explorer-results?es=web+map+services>. To add imagery files, follow the steps in **Table 36**.

Table 36: Add Imagery Files

Step	Action and *Result*
Step 1	Click the **Add Raster Layer** button on the **Add Layer** toolbar. *The **Open a GDAL Supported Raster Data Source** dialog box opens.* 
Step 2	Navigate to the folder on your computer where the imagery file is stored.

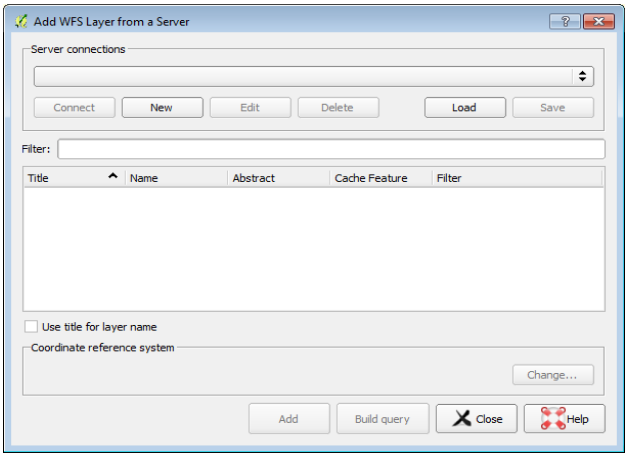
Step	Action and *Result*
Step 3	Select the file then click the **Open** button. *The file loads into GUPS*. 

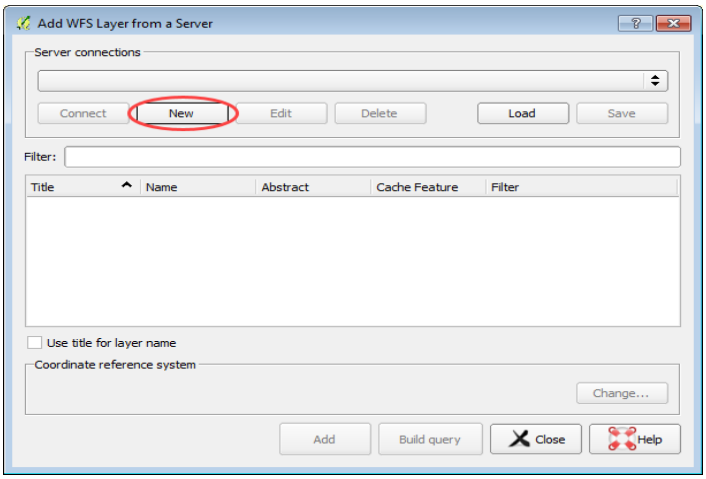
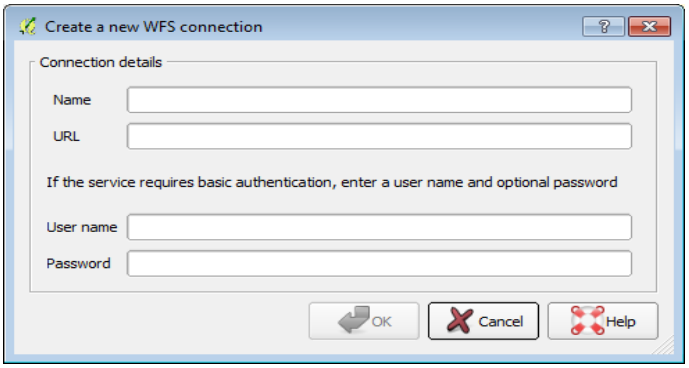
3.5.3 Add a Web Feature Services Layer

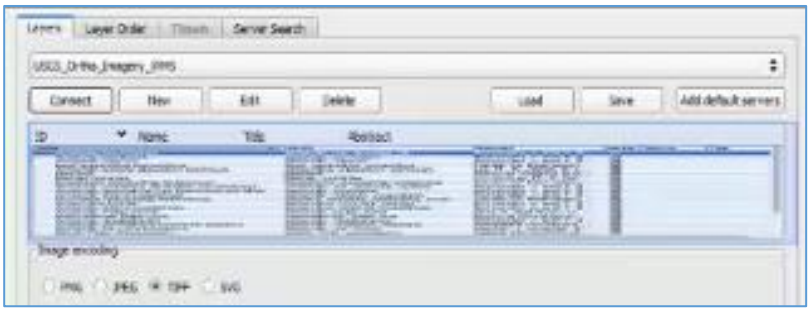
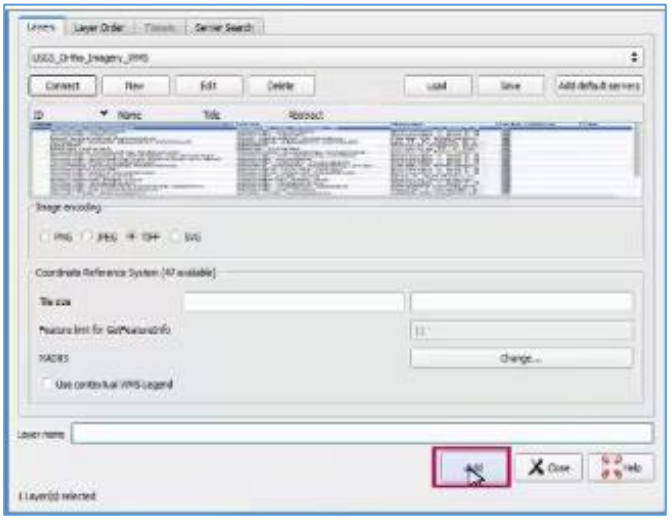
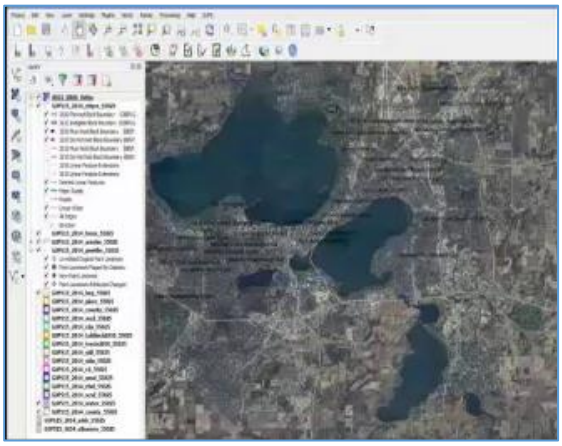
A Web Feature Service (WFS) provides you with GIS data in formats that can be loaded directly in GUPS. The **Add WFS Layer** allows you to add a WFS.

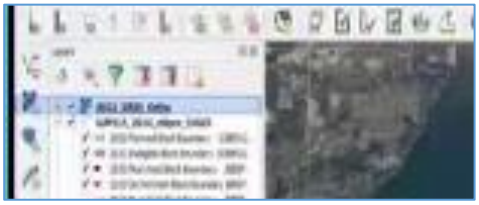
Unlike a WMS, which provides only a map that you cannot edit, a WFS gives you access to the features themselves. See **Table 37** to add a WFS Layer.

Table 37: Adding a WFS Layer

Step	Action and *Result*
Step 1	To begin the upload, click the **Add WFS Layer** button on the **Add Layer** toolbar. *The **Add Layers from a WFS Server** dialog box opens.* 

Step	Action and *Result*
Step 2	Select the **New** button on the **Layers** tab.  *The **Create a new WFS connection** window opens.* 
Step 3	Type in a name for the imagery service in the **Name** field, type in the URL of the imagery service in the **URL** field, and type in a User name and Password if required. To create a new WFS Connection, click the **OK** button.
	If your working environment is inside a firewall, a prompt may ask for your Username and Password to obtain resources from outside the firewall.

Step	Action and *Result*
Step 4	Your WFS Layer now appears in the drop down menu. 
Step 5	Select the WFS Layer you just added from this menu. Click on the **Add** button. 
Step 6	It may take several minutes to add the WFS Layer to the map. 

Step	Action and *Result*
Step 7	The WFS Layer appears at the top of the **Table of Contents**, which means it displays over the top of the other layers.  You may move this layer in the **Table of Contents**.

3.6 How to Use GUPS Review and Validation Tools

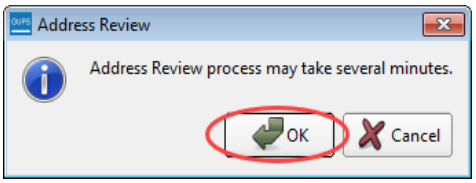
Before submitting files to the Census Bureau, addresses need to be validated. GUPS provides two tools to help you review and validate the updates you made in the system.

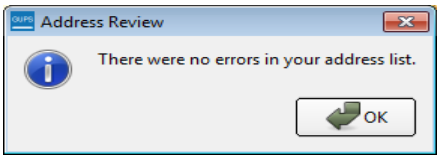
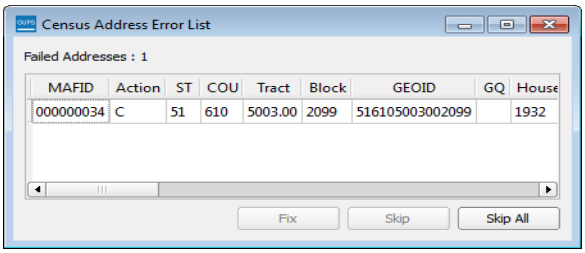
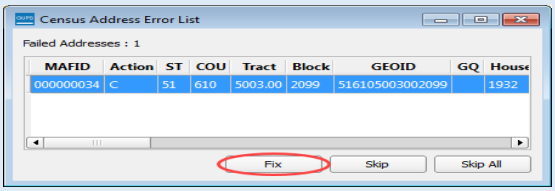
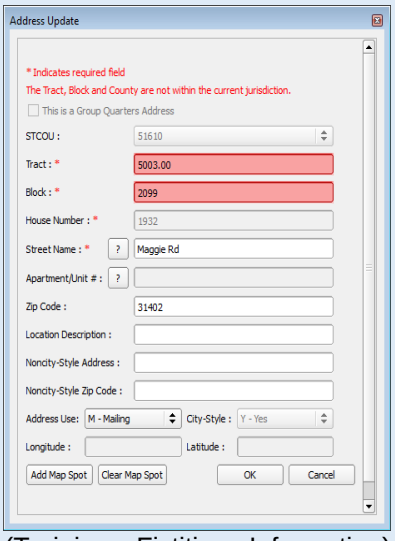
1. The **Address Review** tool.
2. The **Geography Review** tool.

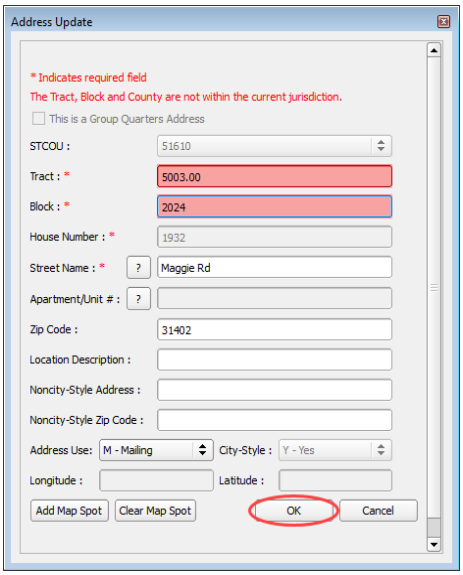
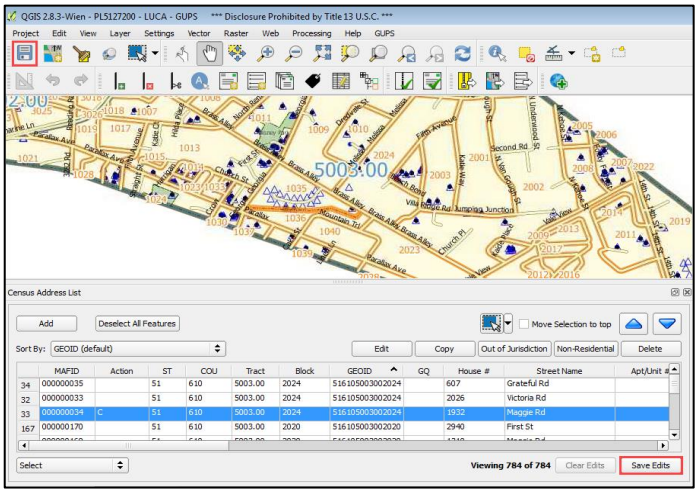
3.6.1 Address Review Tool

One of greatest advantages to using the GUPS is its ability to validate your addresses before they are submitted. The Address Review tool makes sure that all addresses submitted to the Census Bureau can be reviewed and processed in a timely manner for optimal feedback. **Table 38** reviews how to use the Address Review tool in GUPS.

Table 38: Using the Address Review Tool

Step	Action and *Result*
Step 1	Select the **Address Review tool** to validate addresses.
Step 2	After you select the **Address Review** button, the **Address Review** dialog box opens informing you the process may take several minutes. Select the **OK** button to continue. 

Step	Action and *Result*
Step 3	The **Address Review** tool provides quality control checks looking for duplicate, added, or changed addresses. If you have no errors, select the **OK** button to proceed.   (Training—Fictitious Information) If you do have errors, the **Census Address Error List** displays the failed addresses.
	Note: If this list opens during your address review, GUPS grays out many functions making them inaccessible. To restore these functions, select the **Fix** button and correct the address(es) as instructed below then close the window. Select a row and click **Fix**.  (Training—Fictitious Information) The **Address Update Window** opens and displays the specific address errors in red.  (Training—Fictitious Information)

Step	Action and *Result*
Step 4	In this example, the Tract, Block, and County are not within the jurisdiction and need edited to pass quality control.  (Training—Fictitious Information) Select the **OK** button to remove the address from the Census Address Error List. If there are additional addresses to fix, the Census Address Error List window reopens. The Address Update window closes after fixing all of the addresses on the list, restoring the inaccessible functions.
Step 5	Always save your project after making updates.  (Training—Fictitious Information)
	Note: The Address Review process runs in the background whenever you select this option to check for unacceptable addresses.

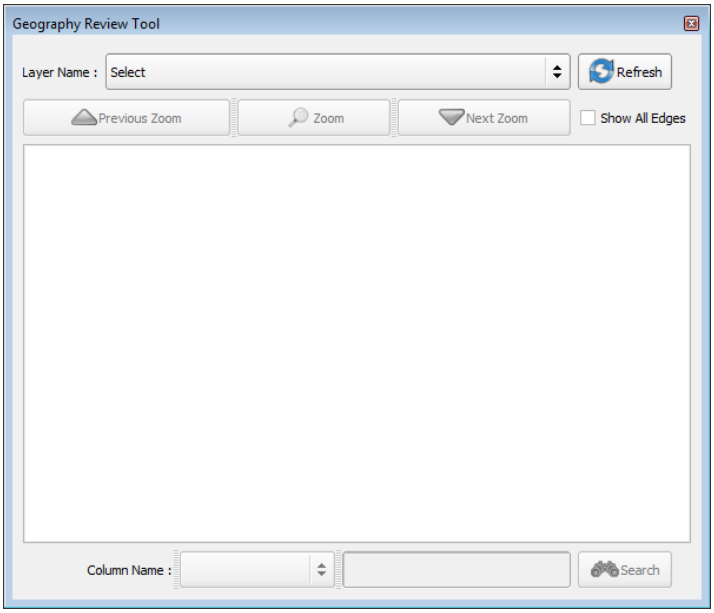
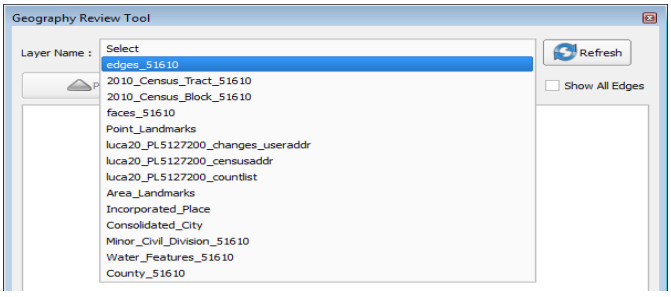
3.6.2 Geography Review Tool

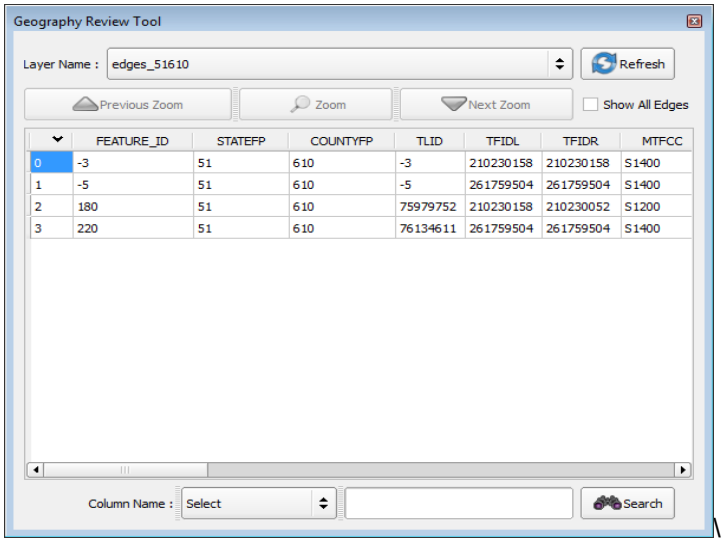
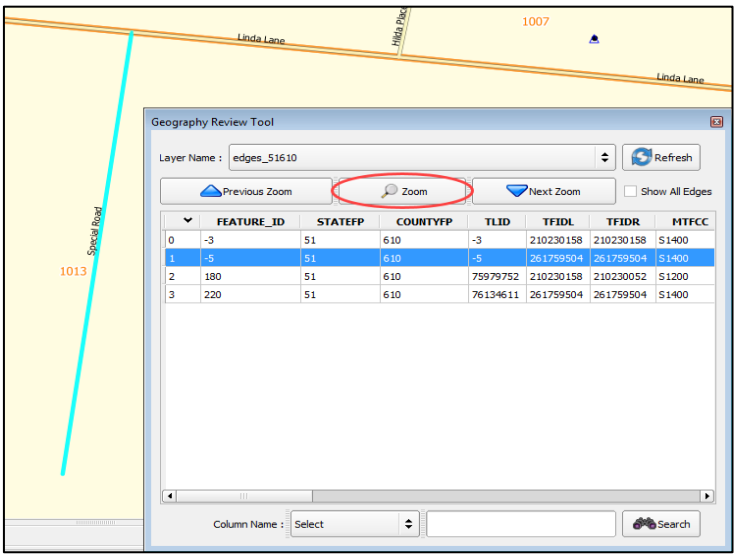
The **Geography Review** tool filters the map layers based on various fields in the attribute table. You can use this tool to check the changes you made to linear features.

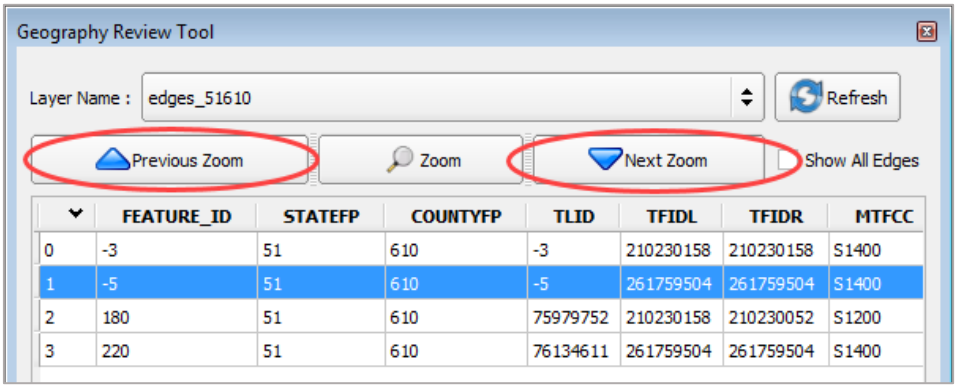
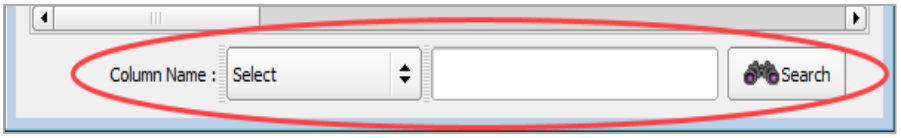
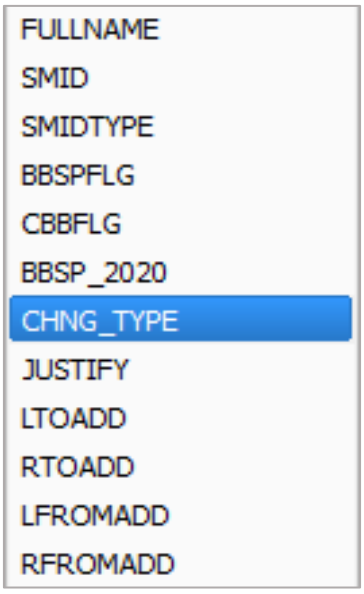
Note: Although this tool allows you to review your changes, you cannot use it to edit them.

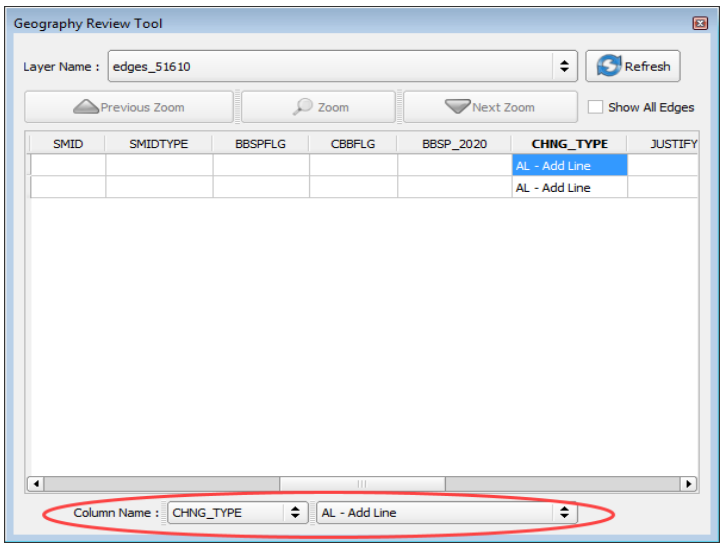
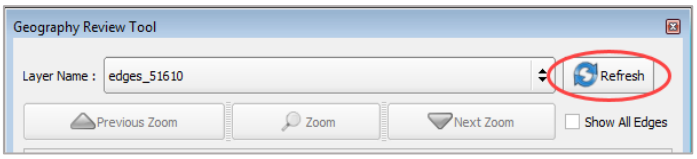
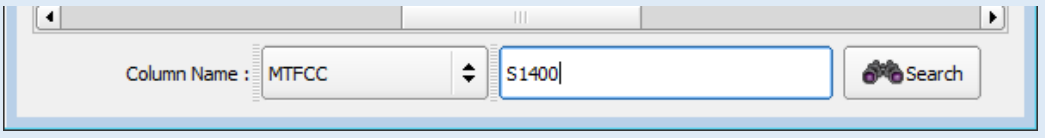
Instructions for how to use the **Geography Review** tool appear in **Table 39** below.

Table 39: Using the Geography Review Tool

Step	Action and *Result*
Step 1	Click on the **Geography Review** button on the **LUCA** toolbar. *The **Geography Review Tool** dialog box opens.* 
Step 2	In the **Layer Name** field drop-down menu, select the data layer you want to view.  This example selects the file **edges_51610**.

Step	Action and *Result*
Step 3	*Once you make your selection, the attribute table for the layer opens, with the attributes for each edge you changed displays in a separate row.*  (Training—Fictitious Information)
	If you cannot see all the columns in the attribute data table, drag the edge of the dialog box outward to widen the view. You may also move the dialog box to another location by clicking inside the box and dragging it.
Step 4	To see an edge on the map, click its row in the attribute table, then click the **Zoom** button. You may also zoom by double-clicking the selected row. (*The row remains highlighted and the map automatically zooms to the selected edge. The map shows the selected edge highlighted in cyan blue – colors may vary*).  (Training—Fictitious Information)

Step	Action and *Result*
Step 5	To view other edges listed in the table rows, use the **Previous Zoom** and **Next Zoom** buttons. *The previous or next row highlights and the system zooms to the map for that row.*  (Training—Fictitious Information)
Step 6	You may use the **Search** feature at the bottom of the dialog box to filter the table layers by specific attributes (e.g., full name, MTFCC, change type, etc.). 
Step 7	In the **Column Name** drop-down menu, select the attribute you want to filter.  This example selects change type (**CHNG_TYPE**).

Step	Action and *Result*
Step 8	Next, enter the attribute value by which you want to filter then click the **Search** button. This example searches by **"AL"**.  *After you click the **Search** button, the attribute table filters to show the rows for all edge corrections made in the county subdivision layer.*
Step 9	To view a different "AL" edge, click on its row and click the **Zoom** button.
Step 10	To return to the attribute table to see the full (***unfiltered***) edges layer, click the **Refresh** button in the upper right-hand corner of the dialog box. 
	Note that when filtering the table by some attributes (e.g., state and county FIPS code or MTFCC); no drop-down list appears from which to make a selection. This is because some attribute codes are too numerous to make scrolling through a list practical. Instead you receive a blank box in which you may type the search value. For example, if you are filtering the edges layer by MTFCC and want to see local roads in the layer, type in the MTFCC for local roads (S1400), as shown below, then click the **Search** button. 

3.7 How to Export Zip Files for Submission

After you select the **Export for Submission** button, GUPS performs the QC/Validation check before creating the export zip files. If everything passes the check, the LUCA Contact Information window opens. If it does not pass the QC/Validation, a window opens informing you to run the **Address Review** tool.

When you create an export file for submission, GUPS creates two zip files. One zip encrypted file with the changes made to the address list and one zip file with feature changes. GUPS automatically names the output zip files for you. In addition, GUPS packages all the files required by the Census Bureau (including any documentation you uploaded) into the zip file and saves it in a preset location created on your computer during the installation process.

3.7.1 Quality Control, File Submission, and Validating Changes

GUPS contains a validation tool to ensure LUCA updates meet the established criteria for Census Bureau processing requirements. Utilize the QC/Validation check often at the beginning of your LUCA address review to identify errors and to avoid potentially extensive re-work later.

Once you have completed your LUCA updates, review your address list to ensure that:

1. All addresses contain valid information.
2. There are no duplicates in the address list.

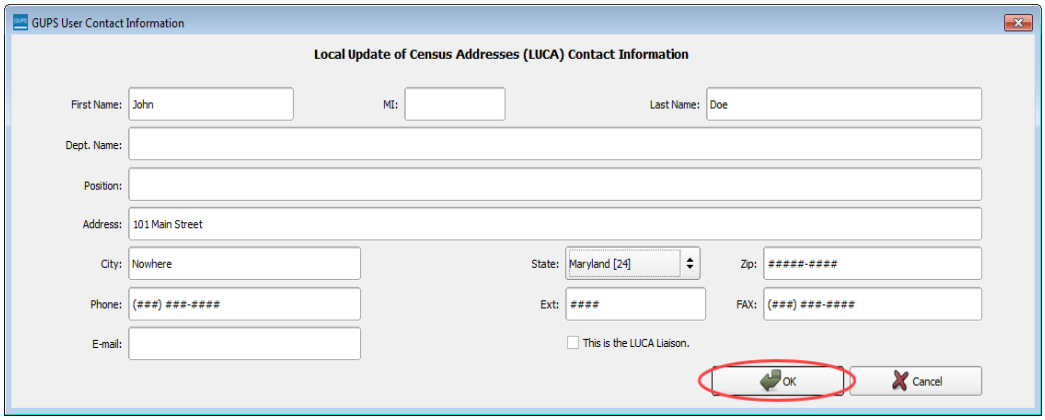
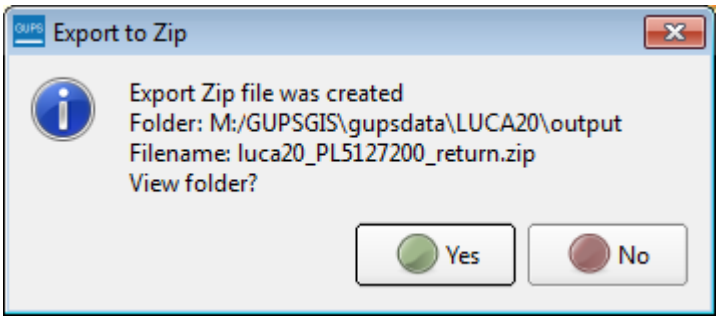
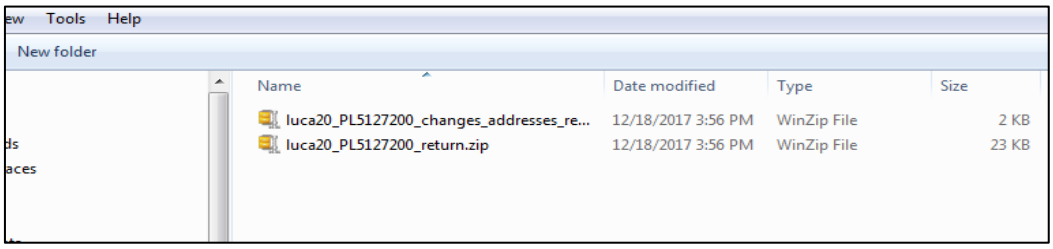
Note: Validate Often — You can access the validation tools in GUPS at any time while you are working in the application. Utilize these tools as you work to identify errors early and avoid extensive re-work later. **Section 3.6.1 Address Review Tool** provides steps for using the **Address Review** tool.

3.7.2 Export a File to Submit to the Census Bureau

To export a file to submit to the Census Bureau, follow the steps in **Table 40**.

Table 40: Export Files for Submission to the Census Bureau

Step	Action and *Result*
Step 1	Click on the **Export to ZIP** button on the **LUCA** toolbar.

Step	Action and *Result*
Step 2	The **GUPS User Contact Information** dialog box opens. Complete the form if any of your contact information has changed then click the **OK** button. 
	If you receive an error message, refer to the **Address Review** tool in **Section 3.6.1 Address Review Tool** for further details.
Step 3	*The **Zip File Output** dialog box opens. It informs you that GUPS created the zip file and asks if you want to view the folder.*  Click the **Yes** button to view the folder or click the **No** button if you choose not to view the folder. 
Step 4	Zip files have been created and are ready to be selected for your chosen submission method.

3.7.3 Submission

After completing your review and creating your submission files, you need to submit them to the Census Bureau.

There are two methods for submitting your updated files:

1. Secure Web Incoming Module (SWIM)—the official web portal for uploading partnership materials to the Census Bureau (preferred method). For step-by-step instructions to submit files through SWIM follow the procedures outlined in *Chapter 7, Submitting Your Updated Materials, Section 7.6 LUCA Secure Web Incoming Module (SWIM) Submission* in the *Digital Respondent Guide*.
2. Shipping—to ensure the protection of Title 13 materials follow the procedures outlined in *Chapter 7, Submitting Your Updated Materials, Section 7.5 Shipping Your Title 13 LUCA Materials* in the *Digital Respondent Guide*.

If any issues arise with your LUCA submission, user support is available via telephone (1-844-344-0169) and email (geo.2020.luca@census.gov).

Once your LUCA submission is complete, please refer to *Chapter 8, Next Steps* in the *Digital Respondent Guide* for information on the LUCA feedback phase.

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APPENDICES

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APPENDIX A CONFIDENTIALITY AND SECURITY GUIDELINES

A1 Introduction

Federal law, under Title 13 of the United States Code (U.S.C.), requires the U.S. Census Bureau to maintain the confidentiality of the information it collects. The Census Bureau takes this responsibility very seriously. Respondents place their trust in the Census Bureau each time they complete a survey or an interview. This trust in confidentiality is critical to the success of the Census Bureau's mission to collect and report the most accurate data possible. To uphold the law, the Census Bureau requires that any individuals with access to Title 13 materials adhere to the prescribed confidentiality and security guidelines.

A2 Title 13, U.S. Code

Chapter 1, Section 9 of Title 13, U.S. Code states: "Neither the Secretary, nor any other officer or employee of the Department of Commerce or bureau or agency thereof, or local government census liaison, may, except as provided in section 8 or 16 or chapter 10 of this title….

1) Use the information furnished under the provisions of this title for any purpose other than the statistical purposes for which it is supplied; or
2) Make any publication whereby the data furnished by any particular establishment or individual under this title can be identified; or
3) Permit anyone other than the sworn officers and employees of the Department or bureau or agency thereof to examine the individual reports."

In 1994, under Public Law 103-430, the U.S. Congress amended Chapter 1 of Title 13 to allow the local government census liaison to review and update the Census Bureau's address information for their jurisdiction. Although the amendment allows official local government access, the amendment reaffirmed the confidential nature of the Census Bureau's address information. Census information protected under Title 13 includes:

- Everything on a completed or partially completed questionnaire or any information obtained in a personal or telephone interview.
- Individual addresses maintained by the Census Bureau, including those shared with governments through the 2020 Census Local Update of Census Addresses Operation (LUCA).
- Digital or paper maps with latitude/longitude coordinate data that identify the location of living quarters (structure points).
- The penalty for the wrongful disclosure or release of information protected by Title 13 is a fine of not more than $250,000 or imprisonment for not more than 5 years, or both, as set by Section 214 of the Code and the Uniform Sentencing Act of 1984.

Title 13 U.S.C. does not apply to generalized address information, such as address range data available in the Census Bureau's digital products or address counts by census block.

A3 The Confidentiality Agreement

To participate in LUCA, a government must designate a LUCA liaison. The LUCA liaison, LUCA reviewers, and *anyone* with access to Title 13 materials must sign the *Confidentiality Agreement*. The Census Bureau will not deliver LUCA materials to a participant until we have received the completed and signed *Confidentiality Agreement* and the *Confidentiality and Security Checklist*.

The Census Bureau's Title 13 data, including addresses and latitude/longitude coordinate data (structure points), cannot be used to create, update, nor modify a tribal, state, or local jurisdiction's address list or database.

A signature on the *Confidentiality Agreement* constitutes a legal agreement by each individual to keep confidential Census Bureau Title 13 data and abide by the security guidelines outlined below. While access to Title 13 materials is temporary, the commitment to keep the information confidential is effective for a lifetime.

A4 Security Guidelines

The LUCA liaison accepts the responsibility for protecting and safeguarding the LUCA materials. The liaison must restrict access to the Census Bureau's information covered under Title 13 to those individuals who have signed the *Confidentiality Agreement*.

To assist you with maintaining proper security, GUPS is equipped with auto-save and close functionality. If you leave your computer unattended for 15 minutes, GUPS will automatically save your edits, and close. After 10 minutes of inactivity, GUPS provides a 5-minute countdown pop-up to alert you.

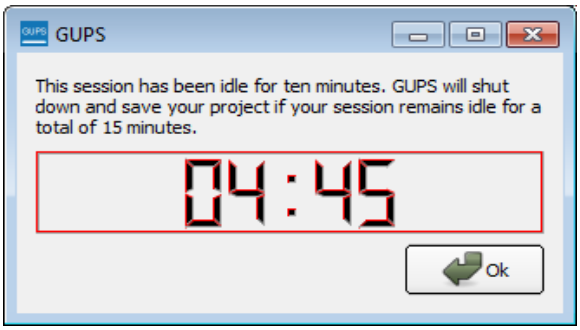


Figure 25. GUPS 5 Minute Countdown Alert

A4.1 Protecting Digital Title 13 Materials

Operating systems, programs, applications, and data are collectively referred to as Information Technology (IT) systems in this document. Any IT systems used for LUCA participation must be accessible only to those who have signed the *Confidentiality Agreement*. Your IT systems should restrict the read, write, and delete functions to all Title 13 materials.

Digital Guidelines

- Construct electronic security profiles to allow only the LUCA liaison and the LUCA reviewers to access Title 13 materials. Test your security to ensure that access is restricted.
- Use file encryption and passwords to protect all digital Title 13 materials at all times. Encrypt files using the ***Advanced Encryption Standard*** (AES) with key length of 256 bits.
- Do not leave computers with Title 13 materials unattended. Log-off computers, lock terminals, and lock the room when not in use.
- Label all digital media and **every** printed page of any paper materials produced from Title 13 digital media with the following:

  "This document contains information, the release of which is prohibited by Title 13, U.S.C., and is for U.S. Census Bureau official use only. Wrongful disclosure or release of information can be punished by fine or imprisonment (Public Law 99-474)."

- Do not send backup digital media off-site. Store in a secured area. **Do not mix, store, or back-up LUCA data with other data.**
- Clear dedicated digital media containing Title 13 materials before reuse. Overwrite Title 13 digital data a minimum of three times using a commercial disk utility program.
- Do not disclose precise or even anecdotal information about Census Bureau addresses or locations to anyone who has not signed the *Confidentiality Agreement*.

Password Guidelines

The IT systems must use logon routines that require a user-ID and password that conform to the following guidelines:

- Unique user-ID and password required for the LUCA liaison, the LUCA reviewers, and anyone who has signed the *Confidentiality Agreement*.
- Must consist of at least twelve, nonblank characters consisting of at least one alphabet letter and either one number or one special character (for example: $,*, or &).
- Reject passwords that are the same as the user-ID or that have been used within the last six months.
- Disable passwords after three failed attempts.
- Mask passwords.
- Require password changes every 90 days or immediately, if compromised.
- Require user to change an assigned password to a unique password the first time the user accesses a new account.

A4.2 Protecting Paper Title 13 Materials

- Do not leave Title 13 materials unattended. Secure all Title 13 materials in a locked room. If possible, store Title 13 materials in locked desks or cabinets.
- Copy only the Title 13 materials necessary to complete the LUCA review. Do not leave the copy machine unattended while making copies. All copied materials containing Title 13 information must bear the statement:

"This document contains information, the release of which is prohibited by Title 13, U.S.C., and is for U.S. Census Bureau official use only. Wrongful disclosure or release of information can be punished by fine or imprisonment (Public Law 99-474)."

- Do not disclose precise or even anecdotal information about Census Bureau addresses or locations to anyone who has not signed the *Confidentiality Agreement*.

A4.3 Reporting an Incident

If you discover that any Title 13 materials have been viewed by unauthorized persons or are missing from your inventory, you must:

- Contact the Census Bureau through the Census Incident Response Team (CIRT) at (301) 763-3333 **within 24 hours**. You must provide the following information:
- Jurisdiction Name.
- Date and time of the incident.
- Name of the contact person.
- Phone number of contact person.
- Site address of incident.
- Immediately secure all remaining materials. Prohibit any further access, by anyone, including the LUCA liaison and anyone who signed the *Confidentiality Agreement*. Census Bureau staff will contact your office within 48 hours with information on how to proceed.

A4.4 On-site Visits

The Census Bureau may make an on-site visit to review a participant's security procedures. The Census Bureau will strive not to disrupt office operations. A visit may include a review of:

- Storage and handling of Title 13 materials.
- Employee access to Title 13 materials.
- Physical safeguard of stored Title 13 materials.
- IT Systems, including use of passwords.
- Employee awareness of their responsibilities to Title 13 materials.

A4.5 Destruction of Census Bureau Confidential Materials

After the entire LUCA operation has concluded, all Title 13 materials must be destroyed (preferred method) or returned according to the Census Bureau's specific guidelines. The LUCA liaison is required to verify the destruction or return of any Title 13 materials, both paper and digital, including all paper copies, backup files, etc., by signing and returning the *Destruction or Return of Title 13, U.S.C. Materials form*. In addition, anyone who signed the *Confidentiality Agreement* is required to sign this form once their participation in LUCA has ended. Should any liaison, reviewer, or anyone who signed the *Confidentiality Agreement* leave before the completion of LUCA, they must sign and date this form. If any liaison, reviewer, or anyone who signed the *Confidentiality Agreement* is unable to sign and date the form, the current liaison must sign and date

on their behalf. Only individuals who signed the Confidentiality Agreement are permitted to destroy Title 13 materials:

- Never deposit Title 13 materials in a trash or recycle container, or dispose of information in a landfill before destruction procedures are completed.
- Destruction must prevent recognition or reconstruction of paper or digital Title 13 materials. Use one of the following methods:
  - Shredding or pulping.
  - Chemical decomposition.
  - Pulverizing (such as, hammer mills, choppers, etc.).
  - Burning (facility approved by the Environmental Protection Agency).
  - Clear dedicated digital media containing Title 13 materials before reuse. Overwrite Title 13 digital data a minimum of three times using a commercial disk utility program.
  - Clearing or sanitizing all print servers and multi-function printing or scanning devices with stored images or print files containing Title 13 data.
  - Destroying CDs and DVDs using a shredder or other method suitable for rendering them un-usable.

Note: Hand tearing is an **unacceptable** method of Title 13 material disposal before destruction.

See the National Institute of Standards and Technology, Special Publication 800-88, Revision 1, *Guidelines for Media Sanitization* for further information on acceptable methods for digital media and office equipment sanitization. <http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-88r1.pdf>

A4.6 Returning Census Bureau Title 13 Materials

After the entire LUCA operation has concluded, **all** Title 13 materials must be **destroyed** (preferred method) or **returned** according to the Census Bureau's specific guidelines. If you decide to return the Title 13 materials rather than destroying them, follow these guidelines:

- Ship the Title 13 materials, double-wrapping them by using an inner and an outer envelope (or container), one within the other. These should be durable enough to prevent someone from viewing or tampering with the enclosed material.
- Label both sides of the inner envelope (or container) with the notice:

  "DISCLOSURE PROHIBITED BY Title 13, U.S.C."

- Place the inner envelope (or container) into the outer envelope.
- **Use the mailing label that was included in the initial mail-out of materials**. If you have misplaced the mailing label, please contact the Census Bureau to have a replacement label sent to you.
- Include with the returned materials, a signed D-2012, *Destruction or Return of Title 13, U.S.C. Materials Form*. Ensure that all reviewers and anyone with access to the Title 13 LUCA materials signs this form.

- If you do not use the mailing label, ship using a service that provides tracking information, such as U.S. Postal Service trackable delivery, FedEx, United Parcel Service (UPS), or similar service.

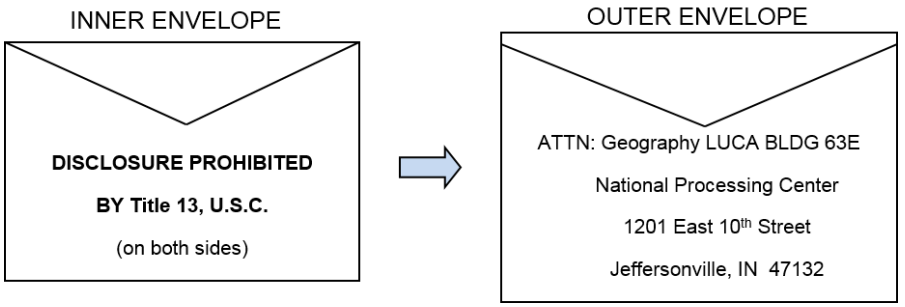


Figure 26. Mailing Envelopes

APPENDIX B LUCA CONTACT INFORMATION AND RESOURCES

Action/Question	Resource	Contact
Request shapefiles on DVD	Geography Division	Call: 1-844-344-0169 Email: geo.2020.luca@census.gov
LUCA materials questions	Geography Division	Call: 1-844-344-0169 Email: geo.2020.luca@census.gov
GUPS technical support	Geography Division	Call: 1-844-344-0169 Email: geo.2020.luca@census.gov Be sure to have the number for the version of GUPS you are running ready. To find this number, go to the **Help** tab on the main **Menu** in GUPS and click **About GUPS** in the drop-down menu. A pop-up box will provide you the number.
SWIM token questions	Geography Division	Call: 1-844-344-0169 Email: geo.2020.luca@census.gov
SWIM technical support	Geography Division	Email: geo.swim@census.gov
Submit output files on DVD (if you do not have Internet access)	National Processing Center	Send to: ATTN: Geography LUCA BLDG 63E National Processing Center 1201 East 10th Street Jeffersonville, IN 47132

APPENDIX C ADDITIONAL GUPS/QGIS FUNCTIONALITY

C1 Changing Working Directory and GUPS Data Settings

If during the course of your updates you find that you need to start over with a new project or change the working directory for GUPS, the GUPS Data Settings Tool will help you do both.

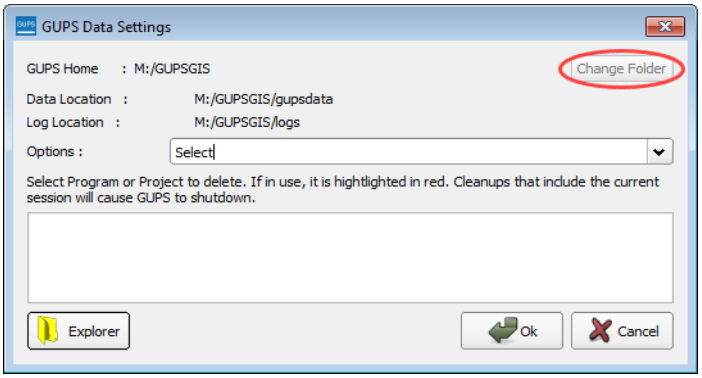
Note: If you are using this tool to start over on an existing project, be aware that this tool **permanently deletes all files in the GUPSGIS data folder**. Once deleted, you cannot recover these files.

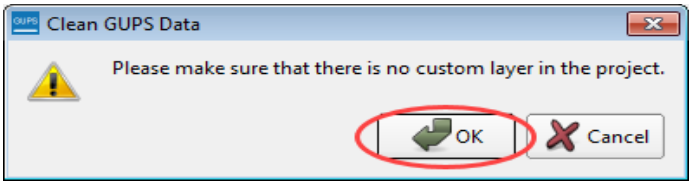
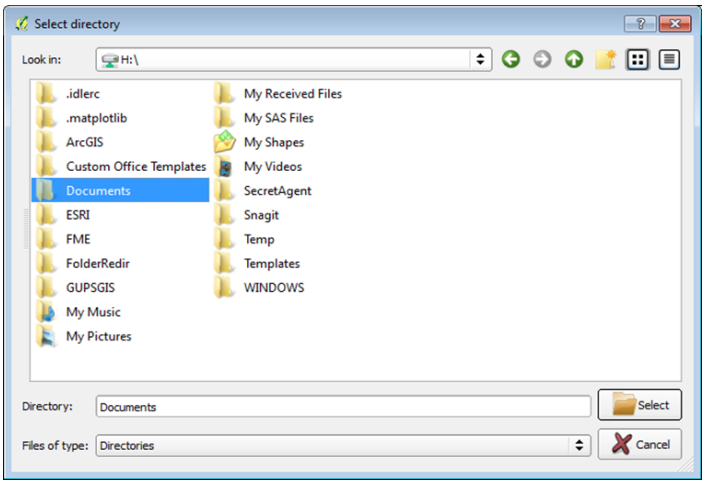
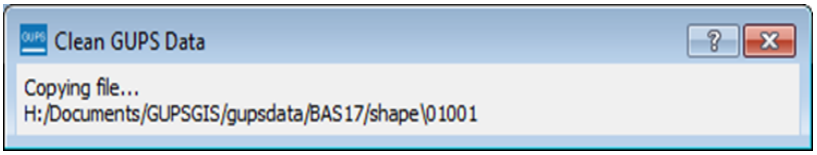
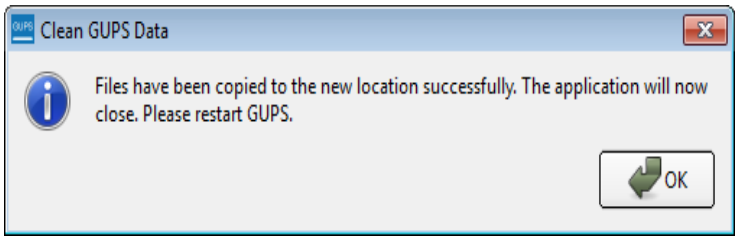
C1.1 Changing the Working Directory

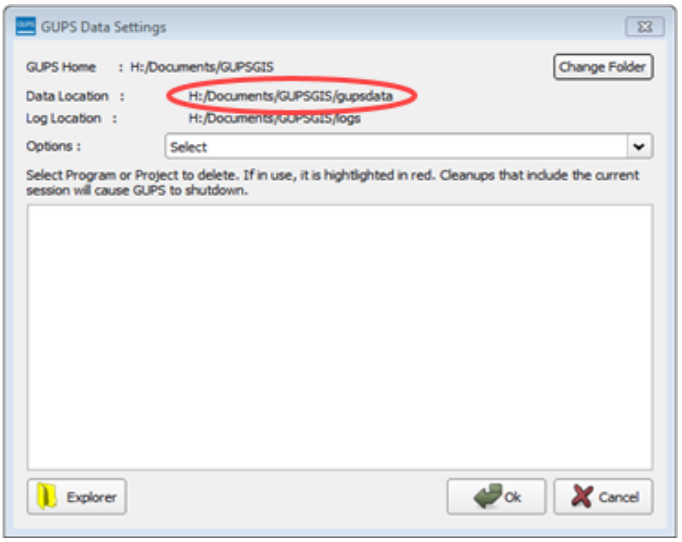
When you first install GUPS, the installer will generally default to the home directory of your computer (typically this is the **My Documents** folder). During the installation, you have the option of changing this working directory to a different location. However, if you need to change the working directory of your project to a different location, the **Change Folder** button in the **GUPS Data Settings** tool (**Table 41**) allows you to change where the main GUPSGIS data folder is stored.

Note: You cannot have an existing project open. If you have a project open in GUPS, the **Change Folder** button will not be active. You must close all projects first in order to change the working directory.

Table 41: Change Working Directory

Step	Action and *Result*
Step 1	Select the **GUPS Data Settings** button from the Standard Toolbar.
Step 2	Click the **Change Folder** button in the GUPS Data Settings Tool. 

Step	Action and *Result*
	A notification dialog box opens to remind you of any custom layers that you may have in your project. Custom layers are any data that is stored in another folder that is not the GUPSGIS data folder. For example, if you have reference shapefile layers in another folder location, these files will not copy through this action. Click **Ok**. 
Step 3	*The Select Directory dialog box opens.* From this screen, you will choose the location for your new working directory. In this example, the **Documents** folder is chosen as the new location for the GUPSGIS data folder. Click the **Select** button. 
Step 4	*GUPS displays a progress bar to indicate that it is moving the folders and contents of those folders to the new directory*.  Once all files have been copied, GUPS then displays a final notification informing you that the move was successful and that you need to restart GUPS. 

Step	Action and *Result*
Step 5	To confirm that the working directory changed, open the GUPS **Data Settings** tool and check the folder location for GUPS Home, Data Location and Log Location. 

C1.2 Deleting GUPS Data

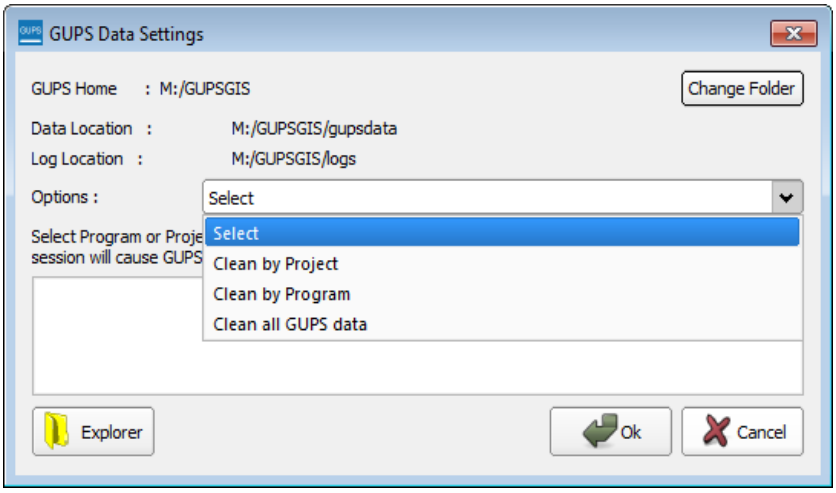


Figure 27. GUPS Data Settings Window

The GUPS Data Settings tool (**Figure 27**) offers three options for removing unwanted GUPS data from your computer: Clean by Project, Clean by Program, and Clean All GUPS Data.

C1.2.1 Cleaning by Project

If you created multiple projects, **Clean by Project** (**Figure 28)** allows you to delete data/files per project. This can be useful if you have a single project that you may no longer need or, for other reasons, to start with the original Census Bureau data without any of the edits that you made for that project. The red dotted highlight indicates a

project that is currently in use in GUPS. To delete a project, select the checkbox next to the project then select **Ok.** Restart QGIS/GUPS by closing the program and reopening it again to ensure that this action deleted all data and files.

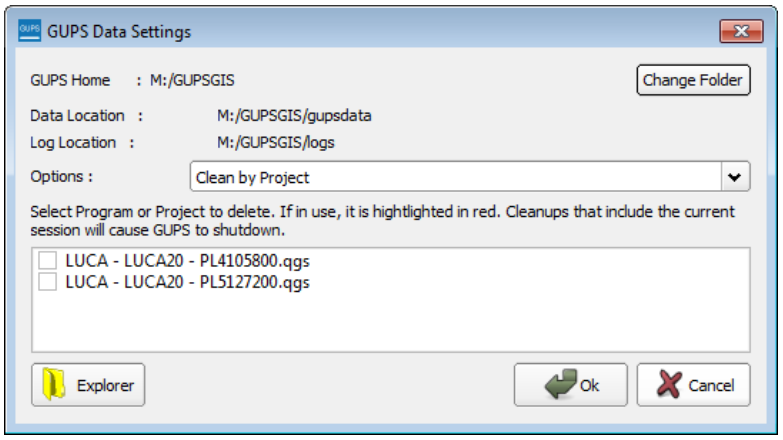


Figure 28. Clean by Project Window

C1.2.2 Cleaning by Program

If you would rather delete all projects associated with a certain program, you can choose to **Clean by Program** (**Figure 29**). This deletes all projects associated with a single program. Restart QGIS/GUPS by closing the program and reopening it again to ensure that this action deleted all data and files.

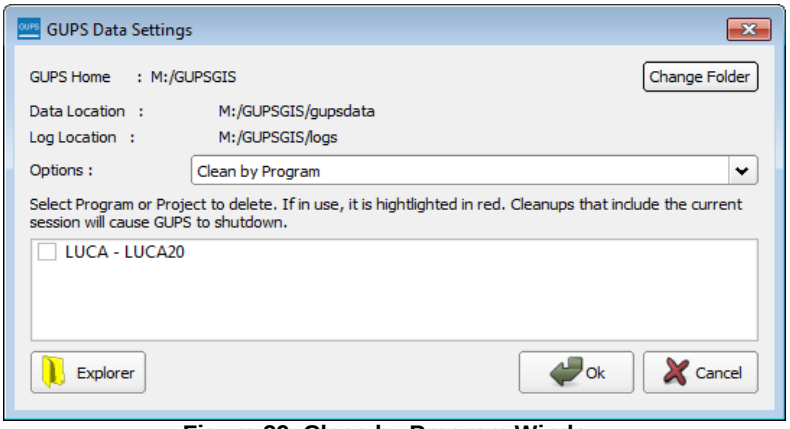


Figure 29. Clean by Program Window

C1.2.3 Cleaning All GUPS Data

The final option is to **Clean All GUPS Data** (**Figure 30**). As the name implies, this deletes all GUPS data that is located in the GUPGIS data folder in your home directory. This permanently deletes all files and folders. Once the tool has finished, files and folders cannot be recovered. If you choose to clean all GUPS data, select **Ok** and GUPS should automatically restart. In the event that GUPS does not automatically restart, manually restart QGIS/GUPS to ensure that this action deleted all of the data.

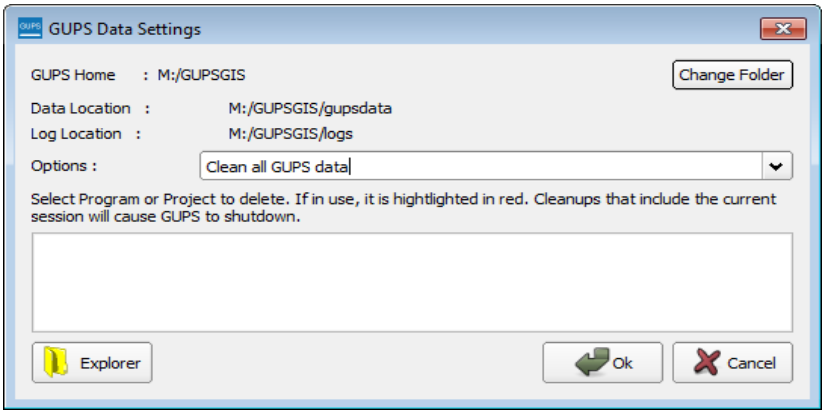
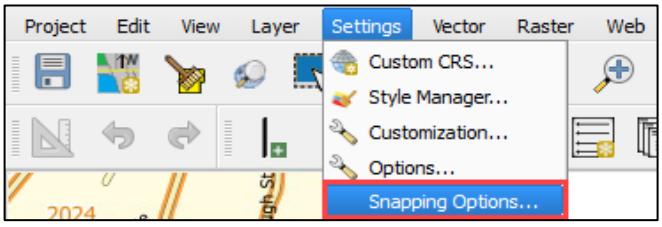
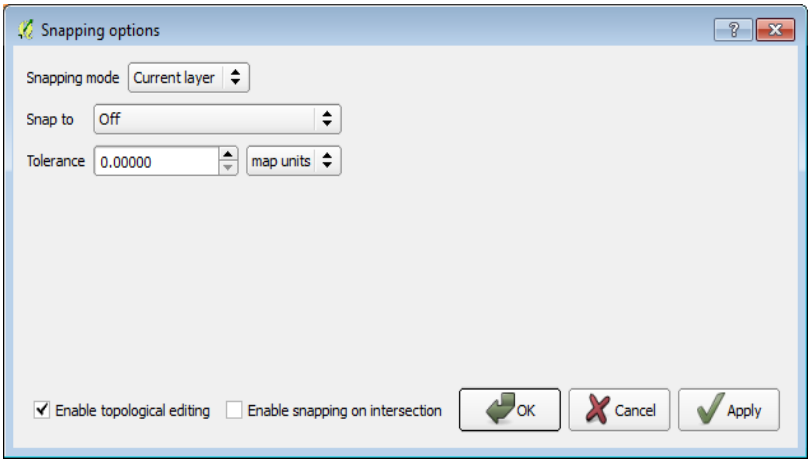


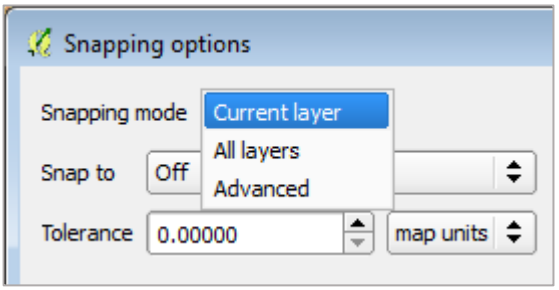
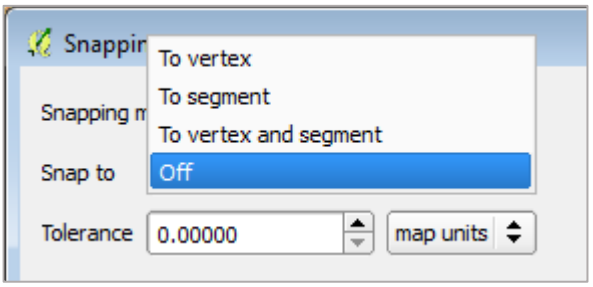
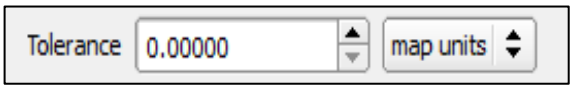
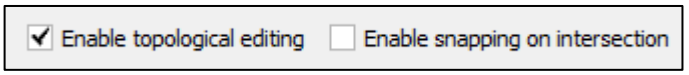
Figure 30. Clean All GUPS Data Window

C2 Adjusting Snapping Tolerances

GUPS loads with a predetermined default snapping tolerance. You may adjust the snapping tolerance by following the steps in the following table.

Table 42: Snapping Tolerances

Step	Action and *Result*
Step 1	In the **Settings tab** drop-down menu, click on **Snapping options**.  *The Snapping options dialog box opens*. 

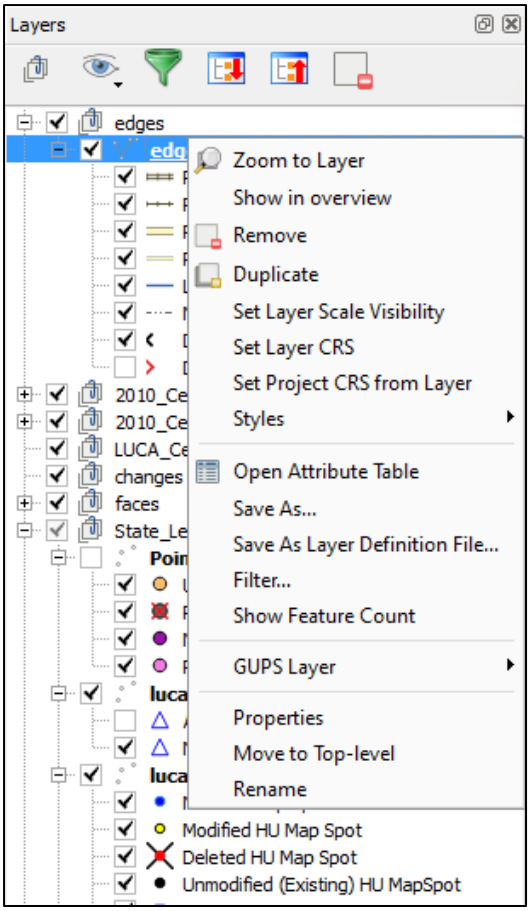
Step	Action and *Result*
Step 2	From the **Snapping mode** drop-down menu, select whether you want the tolerance adjustment to apply only to the current layer or to all layers. 
Step 3	From the **Snap to** drop-down menu, choose the snapping method. 
Step 4	From the **Tolerance** drop-down menu, use the up and down arrows to select the value you want and then select your units (map units or pixels) in the drop-down to the right. 
Step 5	If you want to enable topological editing and/or snapping on an intersection, use the checkboxes next to each. 
Step 6	Click **OK**. *The new snapping tolerances are set.*

C3 Resetting Layer Symbology

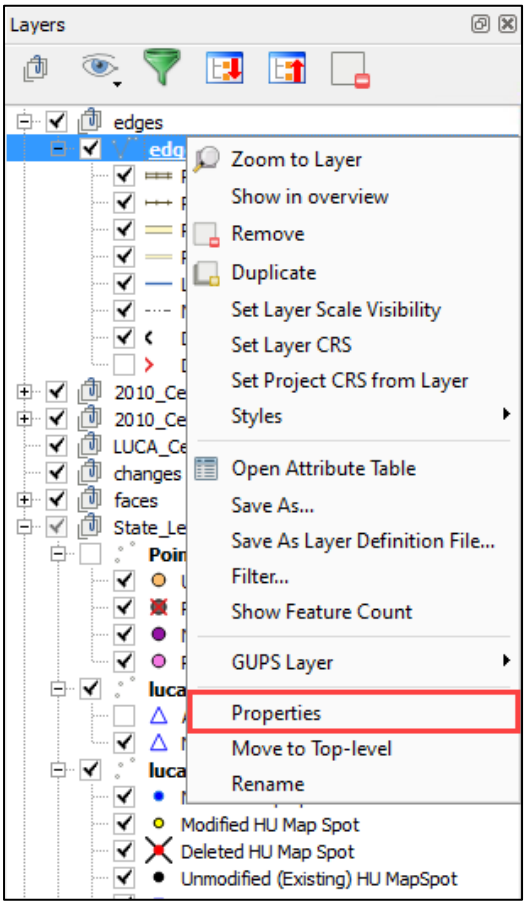
Although pre-loaded with default symbology specific to LUCA, all layer symbology can be edited to assist you in reviewing your materials.

Note: If you adjust the symbology of the luca20_<EntityID>_censusaddr layer, and then select the “Labels” button in the toolbar, the layer’s symbology will automatically revert to its default settings.

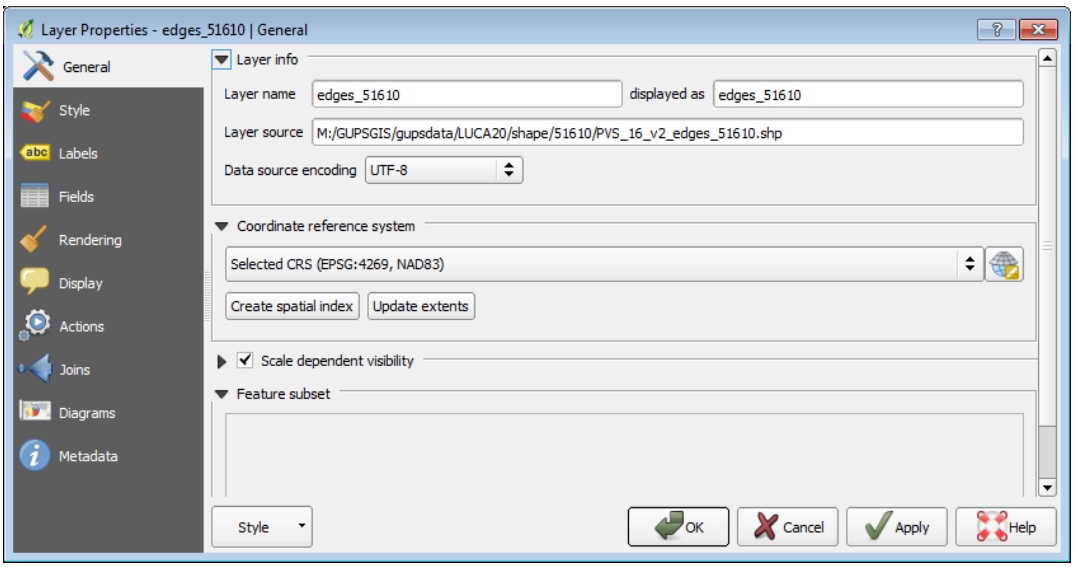
Table 43: Reset Layer Symbology

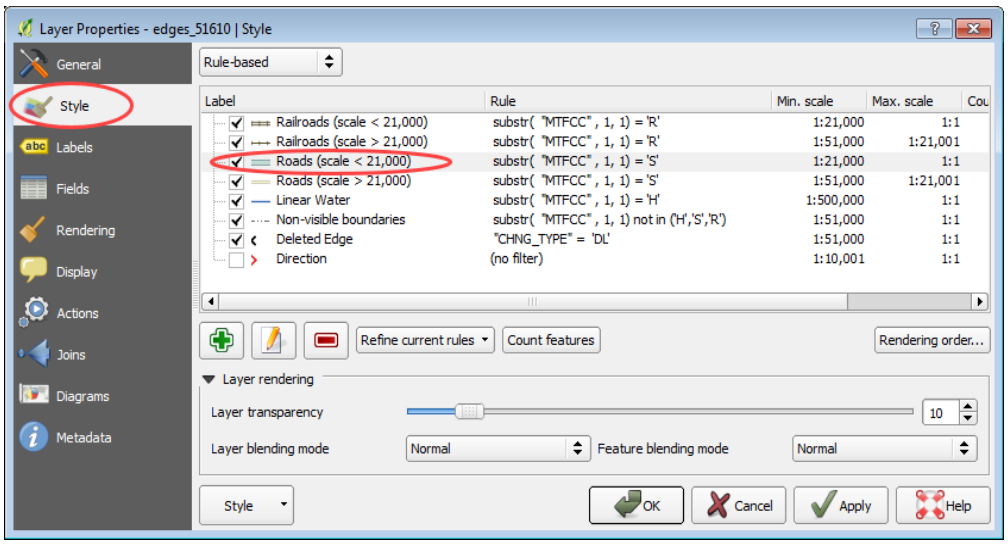
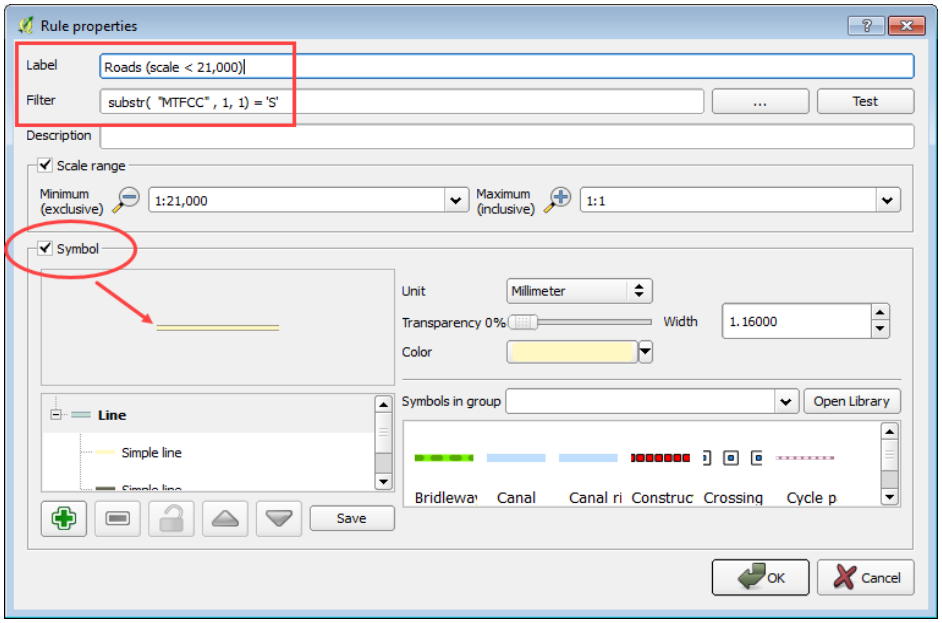
Step	Action and *Result*
Step 1	Right-click on the layer in the **Table of Contents** (this example selects the Edges layer). *The **Layers** drop-down menu opens*. 

Step	Action and *Result*
Step 2	In the drop-down menu, choose **Properties**.



*The **Layer Properties** screen opens.*

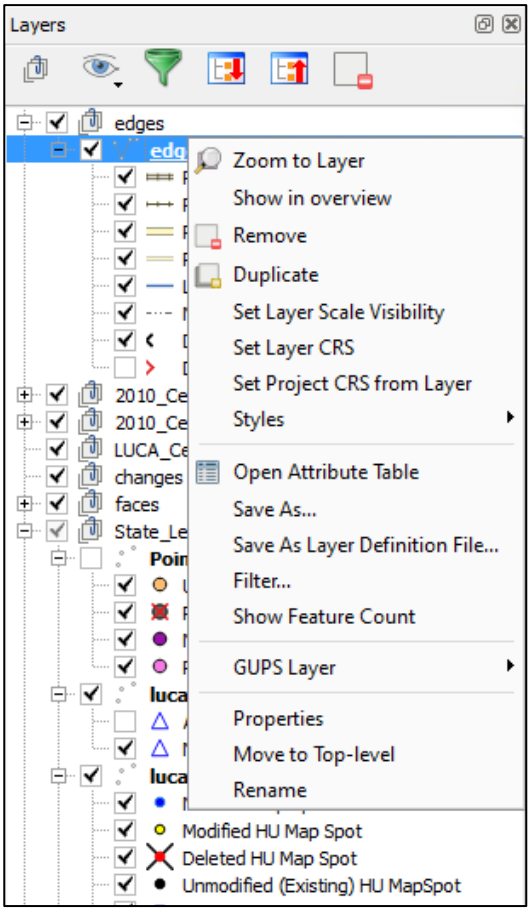


Step	Action and *Result*
Step 3	In the left pane, click on **Style** then double-click the symbol you want to edit in the layers list. This example selects **Roads, substr ("MTFCC, 1,1) = S1100**. Double click to select it.  *The **Rule Properties** dialog box opens and the **Label** and **Filter** fields display the item chosen. The **Symbol** pane shows the current symbology (yellow line).* 
Step 4	Choose a new color from the **Color** drop-down menu, or select a different symbol for the layer altogether by double-clicking any symbol in the **Symbols in Group** field. Click the **OK** button. *The new symbology displays in the **Table of Contents** and in the **Map View**.*

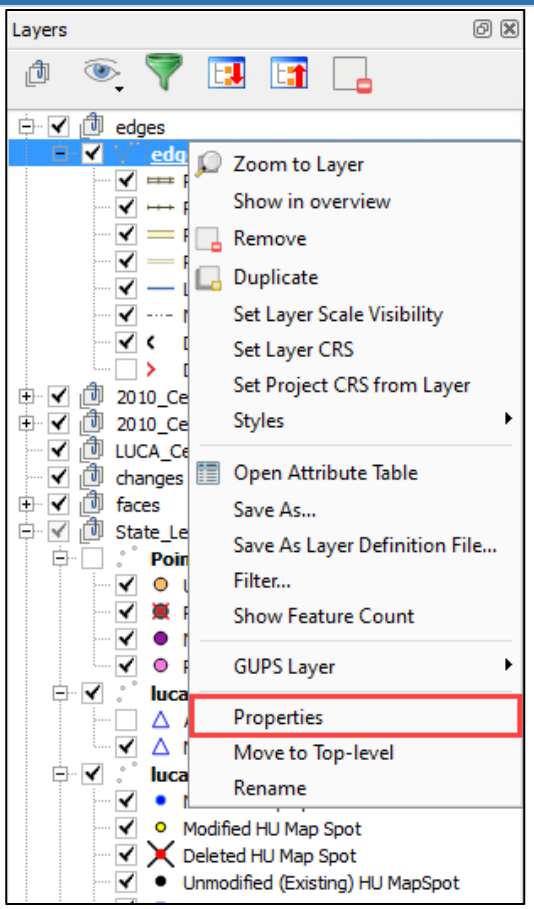
C4 Change Default Labeling

You can change the default GUPS labeling display and restore it to the original setting. To change the default labeling for a layer, follow the steps below. To restore labelling to the default, see **Table 45**.

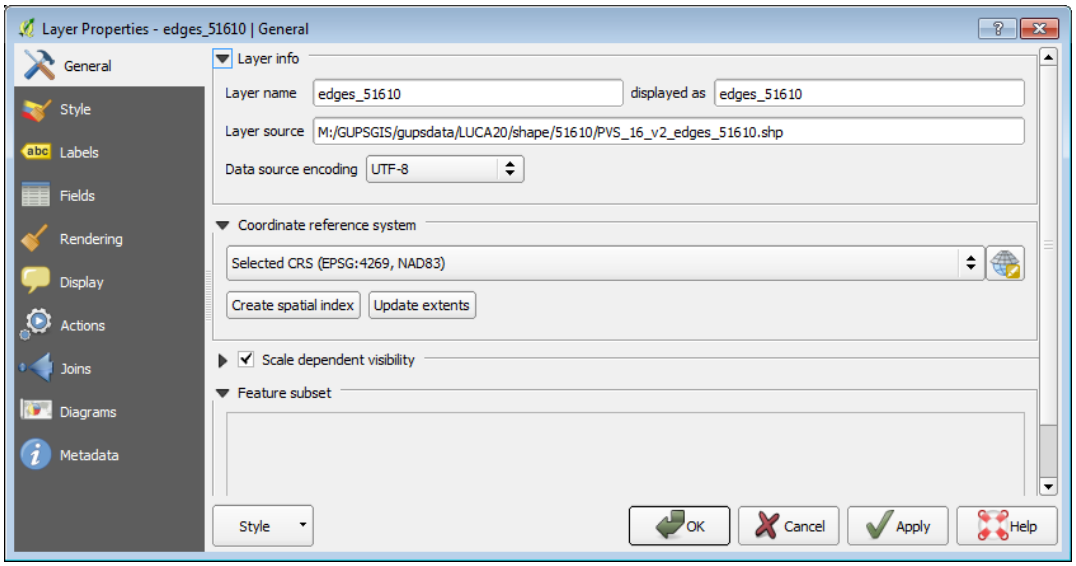
Table 44: Change Default Labeling

Step	Action and *Result*
Step 1	Right-click on the layer (In this example, the **Edges** layer) in the **Table of Contents**. *The **Layers** drop-down menu opens*. 
Step 2	In the drop-down menu, choose **Properties**.

Step	Action and *Result*



*The **Layer Properties** dialog box opens.*



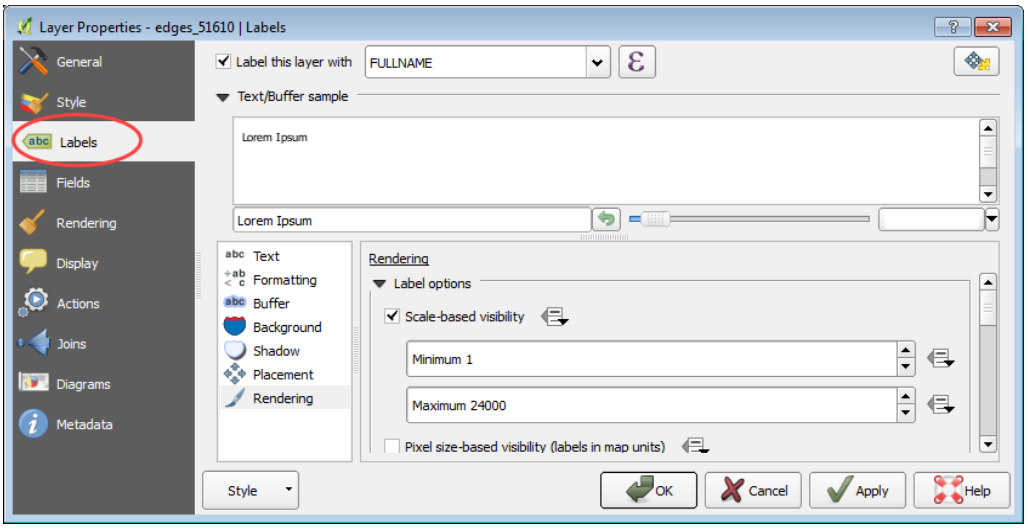
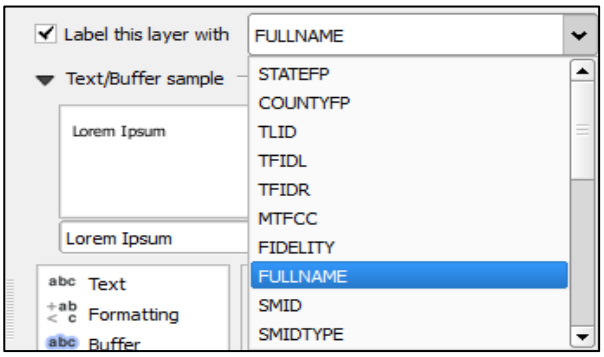
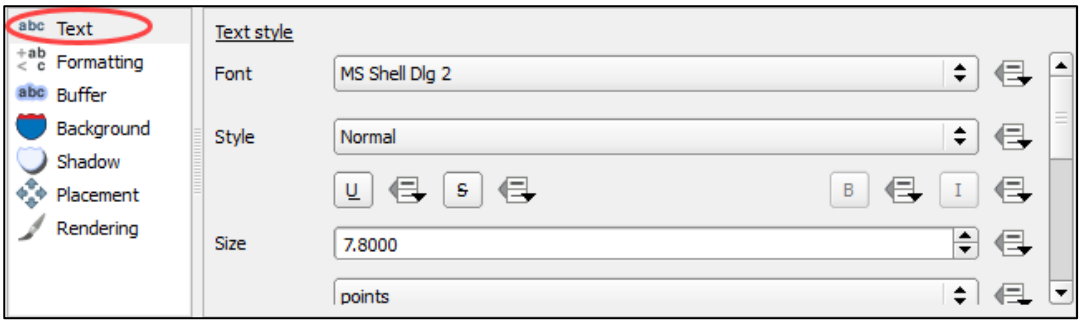
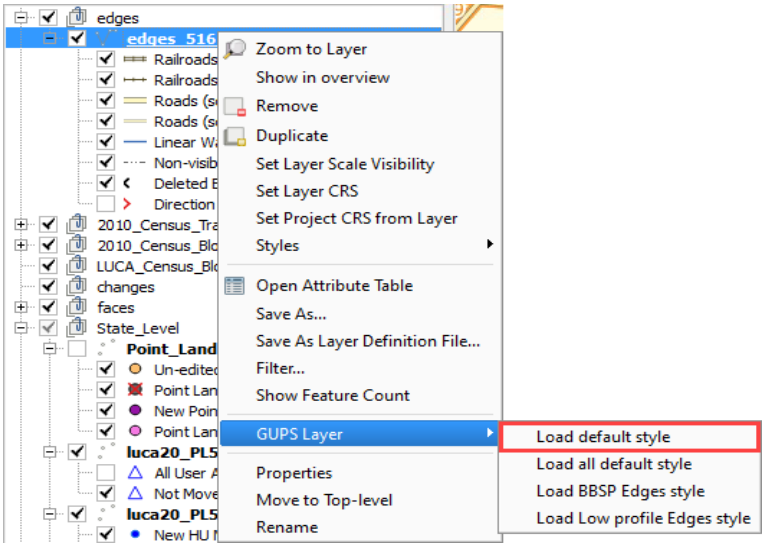
Step	Action and *Result*
Step 3	In the left pane, click **Labels**. *The options to change the label display properties open in the main window*. 
Step 4	To change the attribute field, click on the drop-down menu for **Label this layer with** at the top of the screen, and select the desired option.  **Text style** options allow you to change the font, style, size, color, transparency, type case, and spacing of layer labels. Shown below are the drop-down options for style. 

Table 45: Restore Default Labeling for a Layer

Step	Action and *Result*
Step 1	Right-click on the layer you changed in the **Table of Contents**. *The layer's drop-down menu opens*.
Step 2	In this example, we have selected the Edges layer. In the drop-down menu, click on the arrow to the right of **GUPS Layer**. Four options appear: **Load default style**, **Load all default style**, **Load BBSP Edges style**, and **Load Low profile Edges style**. 
Step 3	Select **Load default style** to restore the selected layer's original properties OR select **Load all default style** to reset *ALL* the layers to their original settings.

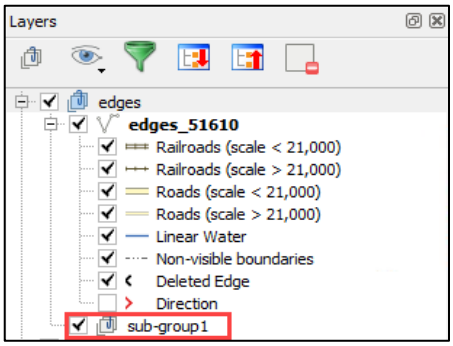
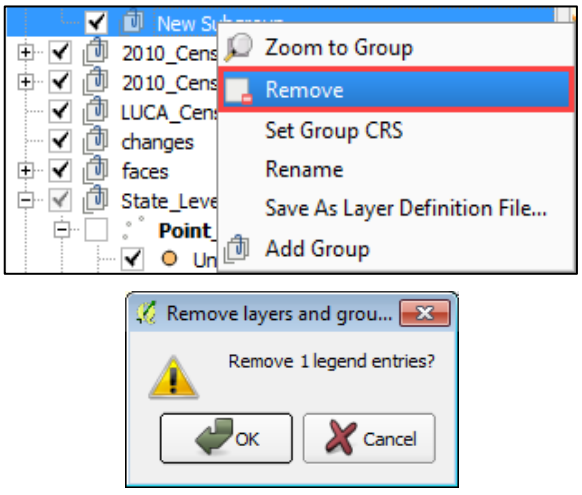
C5 Table of Contents Toolbar

C5.1 Add Group

To organize layers (Add, Create, and Manage Groups) in the **Table of Contents** into groups and manage the group contents, follow the steps in **Table 46**.

Table 46: Organize Layers in the Table of Contents

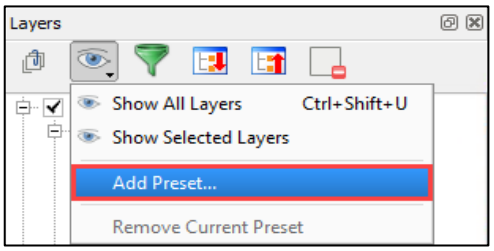
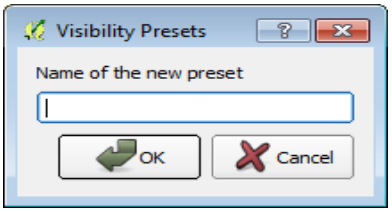
Step	Action and *Result*
Step 1	Click on the **Add Group** button on the **Table of Contents** toolbar.

Step	Action and *Result*
	A new group appears automatically in the ***Table of Contents***. 
Step 2	Type in a name for the group and press the **Enter** key. Then click on an existing layer and drag it into the group just created. (Alternatively, select one or more layers in the **Table of Contents**, right-click in the **Table of Contents** window, and choose ***Add Group***. *GUPS automatically places the selected layers in a new group*. **Name the group**.)
	You may **show or hide all the layers in the group** with a single click on the plus or minus sign next to the group's checkbox.
Step 3	**To remove a layer** from a group, click on the layer and drag it out of the group. Or you can right-click on the layer and choose *Move to Top Level* then drag the layer where you want it in the **Table of Contents** list.
Step 4	**To select more than one layer or group at the same time**, hold down the **CTRL** key while selecting the layers with the left mouse button.
Step 5	**To delete a group**, right-click on the group and select **Remove** in the drop-down menu. Then click the **OK** button when prompted. 

C5.2 Manage Layer Visibility

You can add preset views in the **Table of Contents** by clicking on the Manage Layer Visibility button on the **Table of Contents** toolbar. You can choose to display a layer with specific categorization and add this view to the Presets list.

Table 47: Add a Preset View

Step	Action and *Result*
Step 1	Click on the **Manage Layer Visibility** button and choose **Add Preset**… from the drop-down menu. 
Step 2	When the Visibility Presets pop-up appears, enter the name of the new preset and click the **OK** button. 
	By clicking on the Manage Layer Visibility button, you can view the list of all preset views that you have established and from which you can choose.

C5.3 Remove Layer/Group

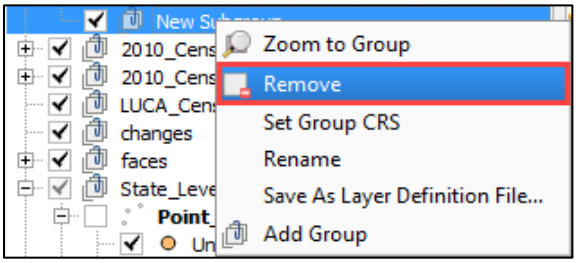
To remove a layer or group in the **Table of Contents**:

- Left-click on the layer/group you want to remove, and click the **Remove a Layer or Group** button.

This action removes the layer/group.

OR

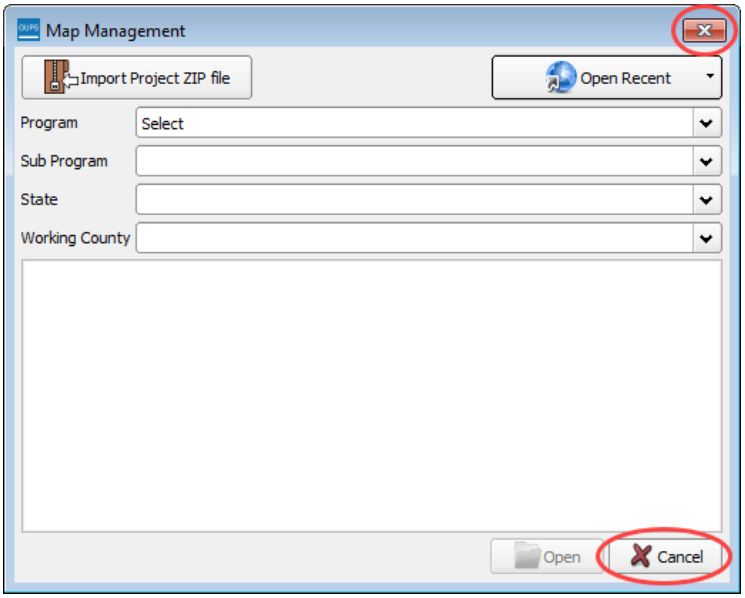
- Right-click on the layer name and select **Remove** in the drop-down menu.

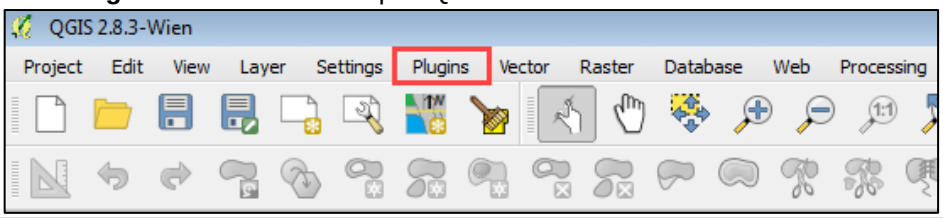
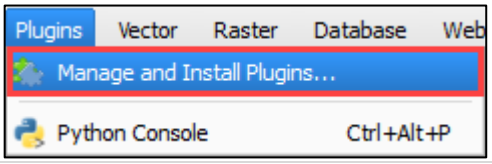
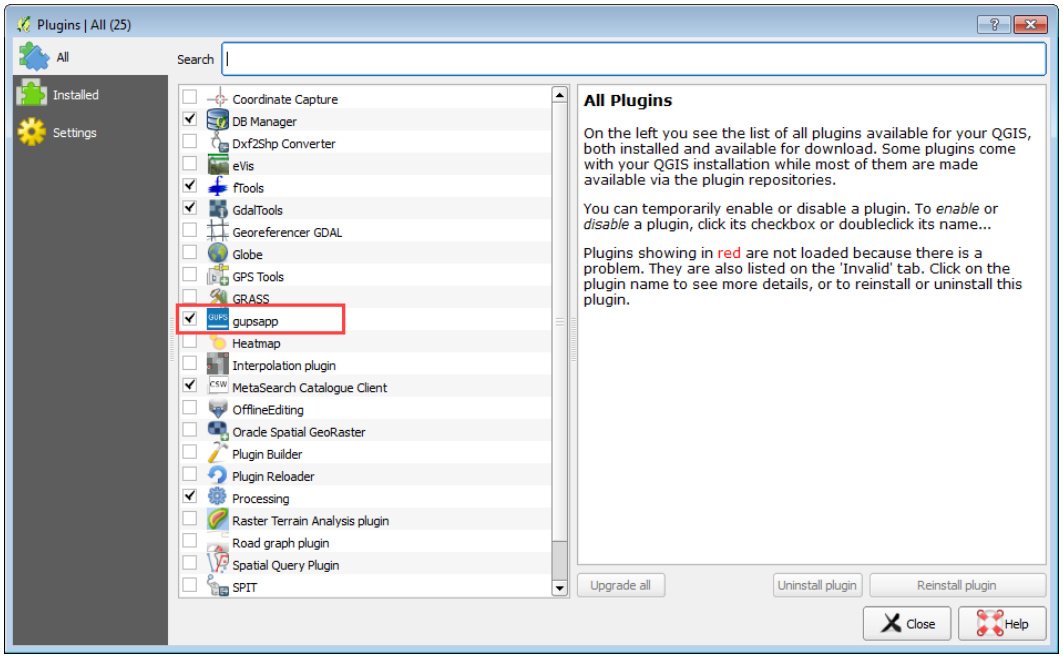


Note: You can use the **Layer tab** on the **Menu**, located at the top of the GUPS main page, to complete some of the same functions done in the **Table of Contents**.

C6 Plugins

Table 48: Enable Plugins

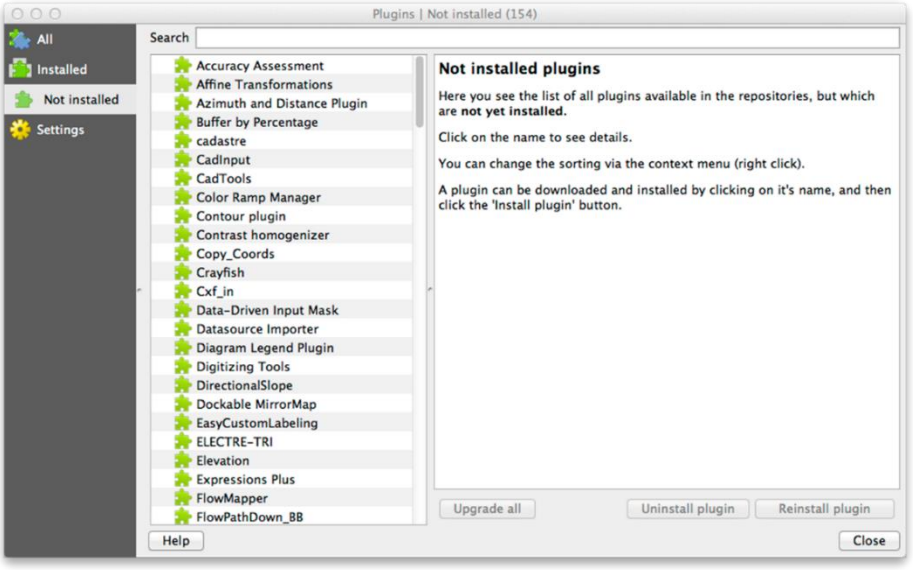
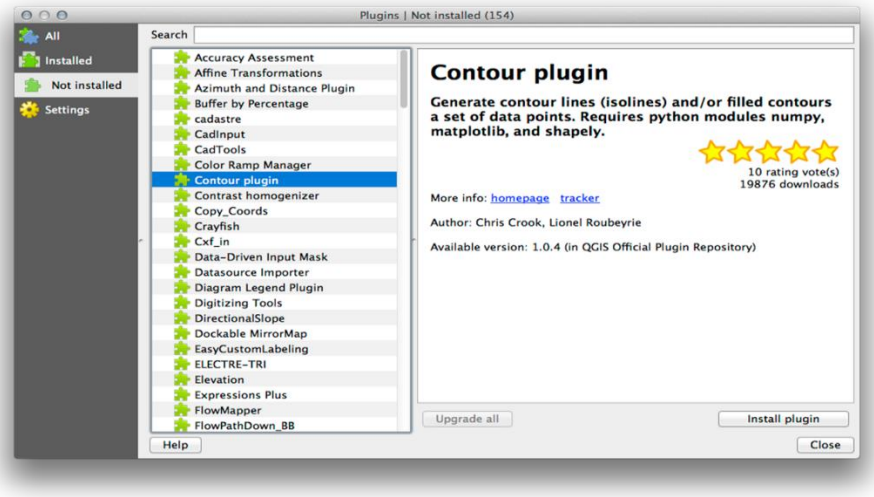
Step	Action and *Result*
Step 1	Double-click the QGIS icon on your desktop.
Step 2	WHEN *QGIS opens*, close the Map Management window. 

Step	Action and *Result*
Step 3	Select the "**Plugins**" menu from the top of QGIS. 
Step 4	Select the "Manage and Install Plugins…" option from the Plugins menu. 
Step 5	*A plugin manager window displays as shown below*. Enable the plugin by checking the appropriate box, in this case **gupsapp**. 
Step 6	Do not change any other plugins. Select the **Close** button.
Step 7	Close and reopen QGIS/GUPS to enable plugins.

C6.1 Installing New Plugins

The list of plugins that you can activate and deactivate draws from the plugins that you currently have installed.

Table 49: How to Install New Plugins

Step	Action and *Result*
Step 1	Select the *Not Installed* option in the *Plugin Manager* dialog. A list of plugins available for you to install opens. This list will vary depending on your existing system setup. 
Step 2	You can find information about each plugin by selecting it in the list of plugins displayed. 
Step 3	You can install a plugin by clicking the *Install plugin* button below the plugin information panel.

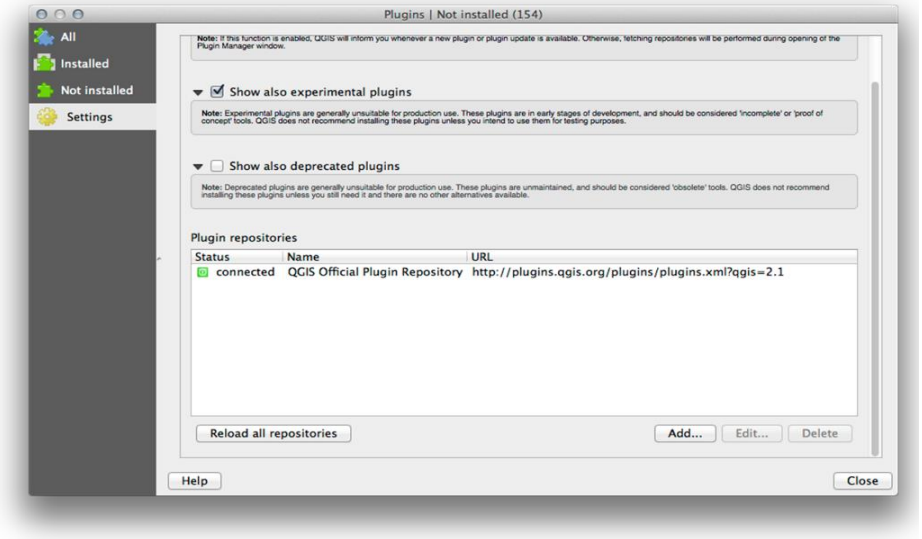
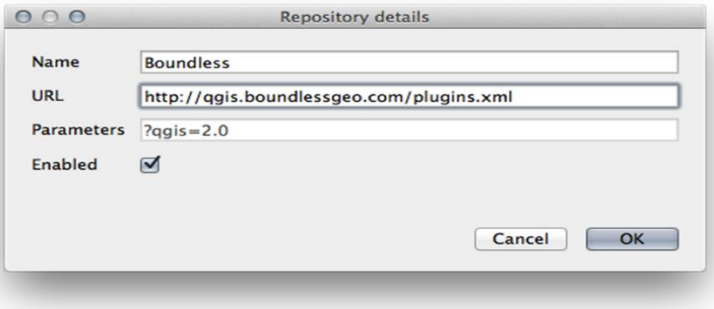
C6.2 Configuring Additional Plugin Repositories

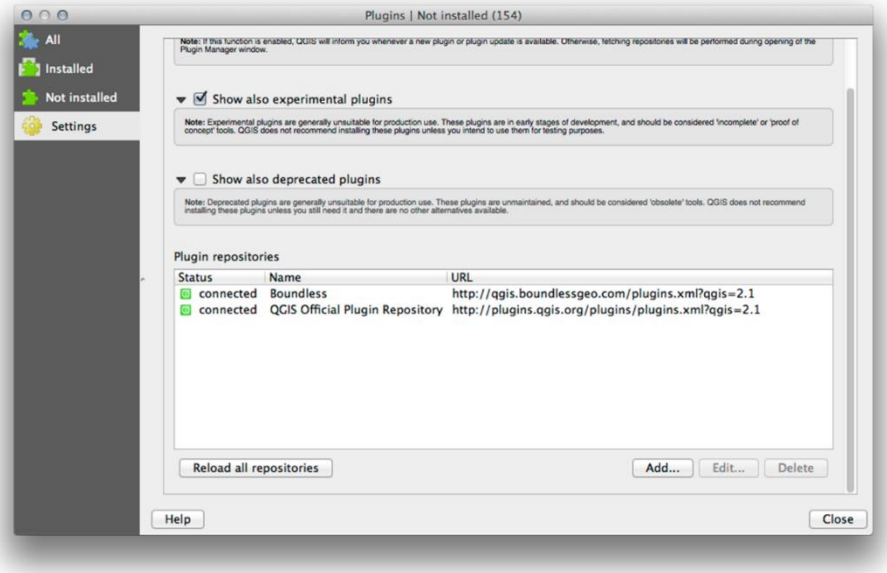
The plugins that are available to you for installation depend on which plugin *repositories* you are configured to use.

QGIS plugins are stored online in repositories. By default, only the official repositories are active, meaning that you can only access official plugins. These are usually the first plugins you want, because they are thoroughly tested and are often included in QGIS by default.

It is possible to try out more plugins than the default ones. First, configure additional repositories. To do this follow the steps in **Table 50**.

Table 50: Configuring Additional Plugins

Step	Action and *Result*
Step 1	Open the *Settings* tab in the *Plugin Manager* dialog:  Click **Add** to find and add a new repository.
Step 2	Provide a **Name** and **URL** for the new repository you want to configure and select the **Enabled** checkbox as shown below. 

Step	Action and *Result*
Step 3	*You will see the new plugin repo listed in the list of configured Plugin Repositories* 
Step 4	You can also select the option to display Experimental Plugins by selecting the ***Show also experimental plugins*** checkbox. If you switch back to the ***Get More*** tab, you see that additional plugins are now available for installation. To install a plugin, click on it in the list then click the ***Install plugin*** button.

APPENDIX D ADDRESS LIST LAYOUT AND VALIDATIONS

The following tables outline the layouts for the Census Address List for both the stateside address list and the Puerto Rico address list. Additionally, the tables describe the validators that occur within GUPS when the “Address Review Tool” is used. Lastly, the statements following each table describe what is considered a “valid” address for submission.

Stateside Address List

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
LINE_NUMBER	Line Number	Sequential number for each address record in the file	1. Uneditable for existing addresses 2. New addresses should receive next number in sequence	7
MAFID	MAFID	Unique number assigned by the Census Bureau to every MAF Unit	1. Uneditable for existing addresses 2. New addresses should be "0" fill	9
ENTITY	Census Entity ID Code	Unique number assigned by the Census Bureau to each entity	1. Uneditable for existing addresses 2. New addresses should receive the Census Entity ID Code	12
ACTION	Action Code	Code assigned to address after new or edited addresses	1. Assign single letter action code according to the following rules: A - New Addresses C - Corrected/Edited Addresses D - Deleted Addresses N - Nonresidential Addresses J - Out of Jurisdiction Addresses	1
STATEFP	State FIPS Code	2-digit Current State Code	Single-State Entities 1. Uneditable for existing addresses 2. New addresses should receive existing 2-digit state code Multi-State Entities (Tribal entities) 1. Editable 2. Must be valid 2-digit code for jurisdiction	2

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
COUNTYFP	County FIPS Code	3-digit Current County Code	Single-County Entities 1. Uneditable for existing addresses 2. New addresses should receive existing 3-digit county code Multi-County Entities 1. Editable 2. Must be valid 3-digit code for jurisdiction	3
TRACT	Census Tract Number	6-digit current census tract number, with an implied decimal point between the fourth and fifth digit, consisting of a 4-digit base number, including leading zeroes, plus 2-digit number suffix, with trailing zeroes. For example, 1234.01 and 0003.00.	1. Editable 2. Can be entered with or without "." 3. Must be valid code for jurisdiction	6
BLOCK	Census Block Number	Up to 6-digit Current Census Block Number, consisting of 4 numbers followed by up to 2 alpha characters. Ex. 1001, 1001D, 1001AB	1. Editable 2. Must be valid code for jurisdiction	6
GEOID	GEOID	Concatenation of State/County/Tract/ Block without the "."	1. Editable 2. Must be valid code for jurisdiction	17
GQ_FLAG	Group Quarters Flag	Populate with 'Y' if the unit is a group quarters	1. Uneditable for existing addresses 2. For New addresses, can only be "Y", "y" or "null" 3. For New addresses, if this is a "Y" or "y" then "GQ NAME" must be populated, and vice versa	1

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
HOUSENUMBER	Complete Address Number	Housing unit or group quarters' assigned address number, alone or with an address number prefix and/or address number suffix that identifies a location along a thoroughfare or within a community. For example, the "123" in 123 Main Street Anytown, NC 28999.	1. Uneditable for existing addresses 2. Editable for new addresses 3. Cannot contain special characters, except for "/", "-", and/or spaces 4. Cannot be "null" if there is a value in "STREETNAME" or "ZIP" field	35
STREETNAME	Complete Street Name	Full street or road name. The official name of a thoroughfare as assigned by a governing authority, or an alternate (alias) name that is used and recognized. For example, the "Main Street" in 123 Main Street Anytown, NC 28999.	1. Editable 2. Cannot contain "," 3. Cannot be "null" if there is a value in "HOUSENUMBER" or "ZIP" field	100
APARTMENT UNIT	Apartment/Unit Number	Combination of Within Structure Descriptor and Identifier, e.g., "Apt 1," "Ste 22," etc.	1. Editable 2. Cannot contain special characters, except for "#", "/", "-", and/or spaces 3. If new or edited address is a duplicate (same State/County/Tract/Block, House #, Street Name, ZIP, Lat/Long if available, Mapspot Number if available) then this field must be populated with a value other than one already used	65

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
ZIP	City-Style Mailing ZIP Code	5-digit ZIP Code for city-style mailing addresses	1. Editable 2. Cannot be "null" if there is a value in "HOUSENUMBER" or "STREETNAME" 3. Numeric characters only 4. Must be exactly 5 digits 5. Cannot be "00000", "11111", "33333", "66666", "77777", "88888", or "99999"	5
GQ NAME	Group Quarters Name	Name of group quarters (Dobbs Hall-University of Dobbs)	1. Editable 2. Cannot contain "," 3. Cannot be "null" if there is a value in "GQ_FLAG" or "FACILITY NAME" field	100
FACILITY NAME	Facility Name	Facility name is the broader name for entities such as a University or Extended Care Hospital that has multiple residential buildings. Example: "The University of Nevada Las Vegas" would be a Facility name. The separate dormitories would be the GQ names.	1. Editable 2. Cannot contain ","	100
LOCATION DESCRIPTION	Location Description	A short written description of the location and physical characteristics of a living quarters.	1. Editable 2. Cannot contain ","	100
NONCITYSTYLE ADDRESS	Noncity-Style Mail Delivery Address	Rural route and box number, post office box number, etc.	1. Editable 2. Cannot contain ","	50
NONCITYSTYLE ZIP	Noncity-Style Mailing ZIP Code	5-digit ZIP Code for noncity-style mailing address.	1. Editable 2. Cannot be "null" if there is a value in "NONCITYSTYLE ADDRESS" field 3. Numeric characters only 4. Must be exactly 5 digits 5. Cannot be "00000", "11111", "33333", "66666", "77777", "88888", or "99999"	5

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
MAPSPOT	Mapspot Number	Unique number assigned by the Census Bureau for each map spot within a block. Numbering starts over in each block. On the map, the Map Spot ID will show the number of addresses in the list containing the same Map Spot ID as well.	1. Uneditable for existing addresses 2. Does not need to be filled for new addresses	4
USE	Address Use	A value indicating if the address is used for 1) mailing purposes or is known to be an address recognized by the U.S. Postal Service for mailing purposes, 2) location purposes, including emergency services such as police, fire, and rescue (E-911 addresses), 3) both mailing and location purposes.	1. Editable 2. Can only be "M", "m", "L", "l" (lowercase L), "B", "b", or "null"	1
LAT	Address Latitude	Address Structure Latitude	1. Editable 2. Cannot contain special characters, except "."	11
LONG	Address Longitude	Address Structure Longitude	1. Editable 2. Cannot contain special characters, except "." and "-"	12
CITY_STYLE	City-Style Address Flag	Populate with 'Y' if the address is "city-style"	1. Uneditable for existing addresses 2. Editable for new addresses 3. Can only be "Y", "y", "N", or "n"	1

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length

Additional Field Validations:
1. State and County combination must be a valid combination for jurisdiction
2. Tract/Block combination must be a valid combination for jurisdiction
3. Latitude/Longitude combination must be a valid combination for jurisdiction, and located within stated Tract and Block

Complete Address Validations:
For a City-Style Address record (CITY_STYLE = "Y" or "y") to be valid, it must meet one of the following criteria:
1. Contain HOUSENUMBER, STREETNAME, and ZIP
2. Contain HOUSENUMBER, STREETNAME, and LAT/LONG combination within jurisdiction
3. Contain HOUSENUMBER, STREETNAME, and GEOID within jurisdiction
4. Any of the above combinations and a "Y" or "y" in GQ_FLAG and a value in the GQ NAME field
For a Noncity-Style Address record (CITY_STYLE = "N" or "n") to be valid, it must meet one of the following criteria:
a. Contain NONCITYSTYLE ADDRESS and LAT/LONG combination within jurisdiction
b. Contain LOCATION DESCRIPTION and LAT/LONG combination within jurisdiction

Puerto Rico Address List

CSV Field Name	Display Name	Description/Notes	Allowable Entry	Field Length
LINE_NUMBER	Line Number	Sequential number for each address record in the file	1. Uneditable for existing addresses 2. New addresses should receive next number in sequence	7
MAFID	MAFID	Unique number assigned by the Census Bureau to every MAF Unit	1. Uneditable for existing addresses 2. New addresses should be "0" fill	9
ENTITYID	Census Entity ID Code	Unique number assigned by the Census Bureau to each entity	1. Uneditable for existing addresses 2. New addresses should receive the Census Entity ID Code	12

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
ACTION	Action Code	Code assigned to address after new or edited addresses.	1. Assign single letter action code according to the following rules: A - New Addresses C - Corrected/Edited Addresses D - Deleted Addresses N - Nonresidential Addresses J - Out of Jurisdiction Addresses	1
STATEFP	State FIPS Code	2-digit Current State Code	Single-State Entities 1. Uneditable for existing addresses 2. New addresses should receive existing 2-digit state code Multi-State Entities (Tribal entities) 1. Editable 2. Must be valid 2-digit code for jurisdiction	2
COUNTYFP	County FIPS Code	3-digit Current County Code	Single-County Entities 1. Uneditable for existing addresses 2. New addresses should receive existing 3-digit county code Multi-County Entities 1. Editable 2. Must be valid 3-digit code for jurisdiction	3
TRACT	Census Tract Number	6-digit current census tract number, with an implied decimal point between the fourth and fifth digit, consisting of a 4-digit base number, including leading zeroes, plus 2-digit number suffix, with trailing zeroes. For example, 1234.01 and 0003.00.	1. Editable 2. Can be entered with or without "." 3. Must be valid code for jurisdiction	6
BLOCK	Census Block Number	Up to 6-digit Current Census Block Number, consisting of 4 numbers followed by up to 2 alpha	1. Editable 2. Must be valid code for jurisdiction	6

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
		characters. Ex. 1001, 1001D, 1001AB		
GEOID	GEOID	Concatenation of State/County/Tract/ Block without the "."	1. Editable 2. Must be valid code for jurisdiction	17
GQ_FLAG	Group Quarters Flag	Populate with 'Y' if the unit is a group quarters	1. Uneditable for existing addresses 2. For New addresses, can only be "Y", "y" or "null" 3. For New addresses, if this is a "Y" or "y" then "GQ NAME" must be populated, and vice versa	1
HOUSE NUMBER	Complete Address Number	Housing unit or group quarter's assigned address number, alone or with an address number prefix and/or address number suffix, that identifies a location along a thoroughfare or within a community. For example, the "123" in 123 Main Street Anytown, NC 28999.	1. Uneditable for existing addresses 2. Editable for new addresses 3. Cannot contain special characters, except for "/", "-", and/or spaces	35
STREETNAME	Complete Street Name	Full street or road name. The official name of a thoroughfare as assigned by a governing authority, or an alternate (alias) name that is used and recognized. For example, the "Main Street" in 123 Main Street Anytown, NC 28999.	1. Editable 2. Cannot contain ","	100

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
ZIP	City-Style Mailing ZIP Code	5-digit ZIP Code for city-style mailing addresses	1. Editable 2. Cannot be "null" if there is a value in "NONCITYSTYLE ADDRESS" field 3. Numeric characters only 4. Must be exactly 5 digits 5. Cannot be "00000", "11111", "33333", "66666", "77777", "88888", or "99999" 6. Must start with "00"	5
URBANIZACION	Urbanizacion	Neighborhood or housing development name.	1. Editable 2. Cannot contain ","	50
CONDOMINIUM	Condominium or Residencial	Apartment/condominium/public housing complex (RESIDENCIAL) name.	1. Editable 2. Cannot contain ","	100
COMPLEX DESCRIPTOR	Complex Descriptor/Identifier	Building descriptor and identifier.	1. Editable 2. Cannot contain ","	22
APARTMENT UNIT	Apartment/Unit Number	Combination of Within Structure Descriptor and Identifier, e.g., "Apt 1," "Ste 22," etc.	1. Editable 2. Cannot contain special characters, except for "#", "/", "-", and/or spaces 3. If new or edited address is a duplicate (same State/County/Tract/Block, House #, Street Name, ZIP, Lat/Long if available, Mapspot Number if available) then this field must be populated with a value other than one already used	65
AREA 1	Area 1	Name of a geographic area typically bounding a neighborhood. Include Barrio (BO) or Barriada (BDA) with geographic area name.	1. Editable 2. Cannot contain ","	50
AREA 2	Area 2	Secondary name of a geographic area typically bounding a neighborhood. Include Comunidad (COM), Sector (SEC), Parcela (PARC), etc. with	1. Editable 2. Cannot contain ","	50

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
		geographic area name.		
KMHM	Kilometer/Hectometer	Kilometer/Hectometer distance marker	1. Editable 2. Cannot contain "," 3. Can only contain numbers and "." 4. Can only contain 1 digit beyond the "." 5. May or may not have "." followed by a number	12
GQ NAME	Group Quarters Name	Name of group quarters (Dobbs Hall-University of Dobbs)	1. Editable 2. Cannot contain "," 3. Cannot be "null" if there is a value in "GQ_FLAG" or "FACILITY NAME" field	100
FACILITY NAME	Facility Name	Facility name is the broader name for entities such as a University or Extended Care Hospital that has multiple residential buildings. Example: "The University of Nevada Las Vegas" would be a Facility name. The separate dormitories would be the GQ names.	1. Editable 2. Cannot contain ","	100
LOCATION DESCRIPTION	Location Description	A short written description of the location and physical characteristics of a living quarters.	1. Editable 2. Cannot contain ","	100
NONCITYSTYLE ADDRESS	Noncity-Style Mail Delivery Address	Rural route and box number, post office box number, etc.	1. Editable 2. Cannot contain ","	50

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
NONCITYSTYLE ZIP	Noncity-Style Mailing ZIP Code	5-digit ZIP Code for noncity-style mailing address.	1. Editable 2. Cannot be "null" if there is a value in "NONCITYSTYLE ADDRESS" field 3. Numeric characters only 4. Must be exactly 5 digits 5. Cannot be "00000", "11111", "33333", "66666", "77777", "88888", or "99999" 6. Must start with "00"	5
MAPSPOT	Mapspot Number	Unique number assigned by the Census Bureau for each map spot within a block. Numbering starts over in each block. On the map, the Map Spot ID will show the number of addresses in the list containing the same Map Spot ID as well.	1. Uneditable for existing addresses 2. Does not need to be filled for new addresses	4
USE	Address Use	A value indicating if the address is used for 1) mailing purposes or is known to be an address recognized by the U.S. Postal Service for mailing purposes, 2) location purposes, including emergency services such as police, fire, and rescue (E-911 addresses), 3) both mailing and location purposes.	1. Editable 2. Can only be "M", "m", "L", "l" (lowercase L), "B", "b", or "null"	1
LAT	Address Latitude	Address Structure Latitude	1. Editable 2. Cannot contain special characters, except "."	11
LONG	Address Longitude	Address Structure Longitude	1. Editable 2. Cannot contain special characters, except "." and "-"	12

CSV Field Name	Full Length Field Name	Field Description/Notes	Allowable Entry	Field Length
CITY_STYLE	City-Style Address Flag	Populate with ‘Y’ if the address is "city-style"	1. Uneditable for existing addresses 2. Editable for new addresses 3. Can only be "Y", "y", "N", or "n"	1

Additional Field Validations:
1. State and County combination must be a valid combination for jurisdiction
2. Tract/Block combination must be a valid combination for jurisdiction
3. Latitude/Longitude combination must be a valid combination for jurisdiction, and located within stated Tract and Block

Complete Address Validations:
For a City Style Address Record (CITY_STYLE="Y" or "y") to be valid, it must meet one of the following criteria:
1. HOUSE NUMBER, STREETNAME, and ZIP
2. HOUSE NUMBER, STREETNAME, and GEOID
3. HOUSE NUMBER, URBANIZACION, and ZIP
4. HOUSE NUMBER, URBANIZACION, and GEOID
5. Any of the 4 above with a 'Y' in GQ Flag and GQ Name populated

APPENDIX E PHYSICAL LOCATION DESCRIPTION AND STREET TYPE ABBREVIATIONS

Table 51: Physical Location and Street Type Abbreviations

FULL NAME	ABBREVIATIONS
Alternate Route	ALT
Avenue	AVE
Blue	BL
Boulevard	BLVD
Brown	BRN
Boarded Up	BU
Circle	CIR
County Highway	CO Hwy
County Road	CO Rd
Court	CT
Drive	DR
East	E
Four-Wheel Drive Trail	4WD
Freeway	FWY
Green	GR
General Delivery	GEN DEL
Hospital	HOSP
Highway Contract Route	HCR
House	HSE
Interstate	I
Intersection	INT
Lane	LN
North	N
Parkway	PKWY
Post Office Box	PO BOX
Road	RD
Route	RTE
Rural Route	RR
South	S
Star Route	ST RT
State Highway	ST HWY
State Road	ST RD
State Route	ST RTE
Street	ST
Thoroughfare	THFR
Township Highway	TWP HY
Township Road	TWP RD
West	W
White	WHT
Yellow	YLW
With	W/

For additional physical location descriptions and street type abbreviations see https://pe.usps.com/text/pub28/28apc_002.htm.

APPENDIX F UNIT DESIGNATION ABBREVIATION EXAMPLES

Table 52: Unit Designation Abbreviations

NAME	ABBREVIATION
Apartment	APT
Basement	BSMT
Bottom	BOTM
Building	BLDG
Downstairs	DOWN
Floor	FLR
Front	FRNT
Interior	INTE
Level	LVL
Lower	LOWR
Middle	MIDL
Mobile Home	MH
Number	#
Penthouse	PH
Room	RM
Right	RGHT
Space	SP
Studio	STUD
Suite	STE
Suites	STES
Trailer	TRLR
Upper	UPPR
Upstairs	UPS

For additional unit designation abbreviations see https://pe.usps.com/text/pub28/28apc_003.htm.

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APPENDIX G CONFIDENTIALITY AGREEMENT FORM

FORM **D-2005** (4-5-2017) OMB No. 0607-0994: Approval Expires 12/31/2019

United States Census 2020

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

CONFIDENTIALITY AGREEMENT FORM
2020 CENSUS LOCAL UPDATE OF CENSUS ADDRESSES OPERATION (LUCA)

Entity ID

Government Name

A. TERMS, CONDITIONS, AND RESPONSIBILITIES FOR PARTICIPATING IN THE 2020 CENSUS LUCA OPERATION

All LUCA liaisons, reviewers, and anyone with access to Title 13, United States Code (U.S.C.) LUCA materials must agree to keep confidential the Title 13 materials to which they have access, including any maps that contain structure points showing the location of living quarters. They may use this information solely for suggesting improvements to the Census Bureau's address list and maps.

All individuals who will review or have access to Census Bureau Title 13 materials must sign below to indicate they have read and understand the Census Bureau's *Confidentiality and Security Guidelines* for LUCA. In addition, those who sign the agreement swear, under penalty of perjury, to maintain the confidentiality of Census Bureau materials protected under Title 13. Further, a signature indicates recognition that the penalty for wrongful disclosure is a fine of not more than $250,000 or imprisonment for not more than 5 years, or both. Although access to the data is temporary, this commitment is permanent. You must be at least 18 years of age to sign this agreement.

By signing this agreement, your government agrees to destroy all Census Bureau Title 13 materials or return them to the Census Bureau at the completion of LUCA.

B. LIAISON INFORMATION

Liaison's Printed Name

Area code Telephone number Ext

Liaison's Signature

Date Month Day Year

Name of LUCA Liaison's Office, Department, or Agency – *(Assessor's Office, Planning Department, Regional Planning Agency, etc.)* – *Please print*

Address of LUCA Liaison's Office, Department, or Agency – *(House number and street name, RR or HC, and box number)* – *Please print*

City State ZIP Code

Email address

C. INFORMATION FOR REVIEWER(S) and PERSON(S) WITH ACCESS TO TITLE 13, U.S.C. MATERIALS

Printed name

Area code Telephone number Ext.

Signature

Date Month Day Year

Address, if different from Liaison – *(House number and street name, RR or HC, and box number)* – *Please print*

City State ZIP Code

Email address

Printed name

Area code Telephone number Ext.

Signature

Date Month Day Year

Address, if different from Liaison – *(House number and street name, RR or HC, and box number)* – *Please print*

City State ZIP Code

E-mail address

Section C continued on the reverse

C. INFORMATION FOR REVIEWER(S) and PERSON(S) WITH ACCESS TO TITLE 13, U.S.C. MATERIALS – Continued

Printed name

Area code Telephone number Ext.

Signature

Date
Month Day Year

Address, if different from Liaison – *(House number and street name, RR or HC, and box number) – Please print*

City State ZIP Code

Email address

Printed name

Area code Telephone number Ext.

Signature

Date
Month Day Year

Address, if different from Liaison – *(House number and street name, RR or HC, and box number) – Please print*

City State ZIP Code

E-mail address

Printed name

Area code Telephone number Ext.

Signature

Date
Month Day Year

Address, if different from Liaison – *(House number and street name, RR or HC, and box number) – Please print*

City State ZIP Code

E-mail address

Printed name

Area code Telephone number Ext.

Signature

Date
Month Day Year

Address, if different from Liaison – *(House number and street name, RR or HC, and box number) – Please print*

City State ZIP Code

E-mail address

Complete this form and return it along with the completed, signed copies of the Registration Form, Self-Assessment Checklist and the Product Preference Form. Use the enclosed postage-paid envelope addressed to ATTN: Geography LUCA 63-E, National Processing Center, 1201 East 10th St., Jeffersonville IN 47132. Rather than mailing, you may scan your completed forms, including forms with signatures, and email them to us at GEO.2020.LUCA@census.gov

APPENDIX H INVENTORY FORM FOR THE RETURN OR SUBMISSION OF LUCA MATERIALS

FORM **D-2011** (2-1-2017) OMB No. 0607-0994: Approval Expires 12/31/2019

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

United States Census 2020

INVENTORY FORM FOR THE RETURN/ SUBMISSION OF MATERIALS 2020 CENSUS LOCAL UPDATE OF CENSUS ADDRESSES OPERATION (LUCA)

Entity ID

Government Name

Please use this form to identify only the LUCA materials that you have updated and are returning to the Census Bureau.

A. Paper Address List:

☐ Census Bureau Updated Address List — List number of pages _____

☐ Address List Add Page — List number of pages _____

B. Digital Address List:

☐ Census Bureau Updated Address List File – *Specify the file name below* ↙

_____

Number of updated address records _____ Submission method: ☐ SWIM ☐ Mail

C. Paper Maps:

Number of updated map sheets _____

D. Shapefiles: *Specify the file name:* _____

Submission method: ☐ SWIM ☐ Mail

E. Geographic Update Partnership Software (GUPS) zip file:

Materials updated – *Mark (X) all that apply.*

☐ Census Bureau Address List ☐ Shapefiles

Submission method: ☐ SWIM ☐ Mail

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APPENDIX I DESTRUCTION OR RETURN OF TITLE 13 MATERIALS FORM

FORM **D-2012** (3-8-2017) OMB No. 0607-0994: Approval Expires 12/31/2019

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

United States Census 2020

DESTRUCTION OR RETURN OF TITLE 13, UNITED STATES CODE MATERIALS FORM
2020 CENSUS LOCAL UPDATE OF CENSUS ADDRESSES OPERATION (LUCA)

Entity ID

Government Name

Please complete this form and return it via email to GEO.2020.LUCA@census.gov or in the enclosed postage paid, preaddressed envelope.

All LUCA Operation liaisons, reviewers, and anyone with access to Title 13, United States Code LUCA materials must sign and date this form at the conclusion of your government's participation in LUCA. Should any liaison, reviewer, or anyone with access to Title 13, U.S.C. LUCA materials leave before the completion of LUCA, they must sign and date this form. If any liaison, reviewer, or anyone with access to Title 13 LUCA materials are unable to sign and date this form, the current liaison must sign and date on their behalf.

A. LUCA Liaison Destruction or Return of Title 13 Materials

I certify by my signature that I have properly destroyed or returned to the U.S. Census Bureau, the original LUCA Title 13 materials and any copies using the security requirements provided to my government by the Census Bureau.

Mark (X) one.

☐ Destroyed Title 13, LUCA materials (Preferred method)
☐ Returned Title 13, LUCA materials

Printed Name of the LUCA Liaison

Signature of the LUCA Liaison

Date
Month Day Year

B. LUCA Reviewers and Anyone With Access to Title 13 Materials

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

B. LUCA Reviewers and Anyone With Access to Title 13 Materials – Continued

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

Printed Name

Signature

Date
Month Day Year

FORM D-2012 (3-8-2017)

If you require more signatures, you may duplicate this form.

APPENDIX J MTFCC CLASSIFICATION

Table 53: MAF/TIGER Feature Classification

MTFCC	Feature Name
S1100	Interstate Highway or Primary Road with limited access
S1200	Primary Road without limited access, US Highway, State Highway, or County Highway, Secondary and connecting roads
S1400	Local Neighborhood Road, Rural Road, City Street
S1500	Vehicular Trail (4WD)
S1630	Ramp
S1640	Service Drive usually along a limited access highway
S1710	Walkway/Pedestrian Trail
S1720	Stairway
S1730	Alley
S1740	Private Road for service vehicles (logging, oil fields, ranches, etc.)
S1750	Private Driveway
H3010	Stream/River
H3013	Braided Stream
H3020	Canal, Ditch or Aqueduct
R1011	Railroad Feature (Main, Spur, or Yard)
R1051	Carline, Streetcar Track, Monorail, Other Mass Transit Rail
R1052	Cog Rail Line, Incline Rail Line, Tram
P0001	Nonvisible Legal/Statistical Boundary
L4010	Pipeline
L4020	Power Transmission Line
L4110	Fence Line
L4121	Ridge Line
L4031	Aerial Tramway/Ski Lift
K2451	Airport or Airfield
L4140	Property/Parcel Line
L4165	Ferry Crossing

APPENDIX K SHAPEFILE NAMES

State Shapefiles Names

PVS_17_v2_<layername>_<SS>.shp, where <SS> is the number corresponding to the state, for example, “24” and <layername> is the abbreviation for the shapefile layer, describe in detail below.

Table 54: State Shapefiles Names

Shapefile Layer	<layername>
American Indian Areas (AIA) – Legal	aial
2010 American Indian Areas (AIA) – Legal	aial2010
American Indian Areas (AIA) – Statistical	aias
American Indian Tribal Subdivisions (AITS) - Legal	aitsl
American Indian Tribal Subdivisions (AITS) - Statistical	aitss
Block Area Group	bag
Metropolitan Statistical Area/Metropolitan Statistical Area	cbsa
Congressional Districts	cd
Census Designated Place	cdp
Counties and Equivalent Areas	county
2010 Counties and Equivalent Areas	county2010
Elementary School Districts	elsd
County Subdivisions - Legal	mcd
New England City and Town Areas	necta
Incorporated Places	place
2010 Public Use Microdata Areas	puma2010
Secondary School Districts	scsd
State Legislative Districts Lower	sldl
State Legislative District Upper Chambers	sldu
State	state
Tribal Block Groups	tbg
Tribal Census Tracts	tct
2010 Census Tracts	tracts2010
Urban Area	uac
Unified School District State-Based	unsd

County Shapefile Names

PVS_17_v2_<layername>_<SSCCC>.shp, where <SSCCC> is the number corresponding to the state and county, for example, “24001” and <layername> is the abbreviation for the shapefile layer, describe in detail below.

Table 55: County Shapefiles Names

Shapefile Layer	<layername>
American Indian Areas (AIA) – Legal	aial
American Indian Areas (AIA) – Statistical	aias
American Indian Tribal Subdivisions (AITS) - Legal	aitsl
American Indian Tribal Subdivisions (AITS) - Statistical	aitss
Alaska Native Regional Corporations (ANRC)	anrc
Area Landmark	arealm
Block Area Groups	bag
Block Groups	bg
Metropolitan Statistical Area/Metropolitan Statistical Area	cbsa
Census County Division	ccd
Congressional Districts	cd
Census Designated Place	cdp
Consolidated Cities	concity
Counties and Equivalent Areas	county
Census Tracts - Current	curtracts
All Lines	edges
Elementary School Districts	elsd
Hawaiian Home Lands (HHL)	hhl
County Subdivisions - Legal	mcd
New England City and Town Areas	necta
Offsets	offset
Incorporated Places	place
Point Landmarks	pointlm
2010 Public Use Microdata Areas	puma2010
Secondary School Districts	scsd
State Legislative Districts Lower	sldl
State Legislative Districts Upper	sldu
Subbarrios	submcd

Shapefile Layer	<layername>
Census Blocks - Current	tabblock
2010 Census Blocks	tabblock2010
2010 Traffic Analysis Delineation	tad2010
2010 Traffic Analysis Zones	taz2010
Tribal Block Groups	tbg
Tribal Census Tracts	tct
2010 Census Tracts	tracts2010
Census Urban Areas	uac
Urban Growth Area	uga
Hydrography - Area	water
Unified School Districts	unsd
Relationship Tables	
Address Ranges	addr
Topological Faces (2-cells with all geocodes)	faces
Topological Faces - Area Landmark Relationship	areafaces
Topological Faces - Area Hydrography Relationship	hydrofaces
Linear Feature Names - Fielded	allnames

APPENDIX L SHAPEFILE LAYOUTS

Table 56: Edges Shapefile (PVS_17_v2_edges)

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
STATEFP	2	String	FIPS state code
COUNTYFP	3	String	FIPS county code
TLID	10	Double	Permanent edge ID
TFIDL	10	Double	Permanent face ID (left)
TFIDR	10	Double	Permanent face ID (right)
MTFCC	5	String	MAF/TIGER Feature Class Code
FIDELITY	1	String	Indication to a respondent when their entity boundary has changed through spatial enhancement
FULLNAME	40	String	Decoded feature name with abbreviated qualifier, direction, and feature type
SMID	22	String	Spatial Theta ID
SMIDTYPE	1	String	SMIDTYPE code
BBSPFLG	1	String	Redistricting data project participant's submitted request of an EDGE for selection as a block boundary
CBBFLG	1	String	Indicates the status of an EDGE for a selection as a block boundary
BBSP_2020	1	String	New BBSP flag
CHNG_TYPE	4	String	Type of linear feature update
JUSTIFY	150	String	Justification of change
LTOADD	10	String	Left To address
RTOADD	10	String	Right To address
LFROMADD	10	String	Left From address
RFROMADD	10	String	Right From address
ZIPL	5	String	Left zip code
ZIPR	5	String	Right zip code
EXTTYP	1	Char	Extension type
MTUPDATE	10	Date	Date of last update to the edge

Table 57: Address Ranges Attribute File (PVS_17_v2_addr)

ATTRIBUTE FIELD	LENGTH		TYPE	DESCRIPTION
OID	8		STRING	Object ID
TLID	22		INTEGER	TIGER Line ID
STATEFP	2		STRING	FIPS State Code
COUNTYFP	3		STRING	FIPS County Code
FROMHN	12		STRING	From House Number
TOHN	12		STRING	To House Number
SIDE	1		STRING	Side Indicator Flag
ZIP	5		STRING	5-digit ZIP Code
PLUS4	4		STRING	ZIP+4 Code
LFROMADD	10		STRING	Left From Address
LTOADD	10		STRING	Left To Address
RFROMADD	10		STRING	Right From Address
RTOADD	10		STRING	Right To Address
ZIPL	5		STRING	Left 5-digit ZIP Code
ZIPR	5		STRING	Right 5-digit ZIP Code
ZIP4L	4		STRING	Left ZIP+4 Code
ZIP4R	4		STRING	Right ZIP+4 Code

Table 58: Census Block Shapefile (PVS_17_v2_tabblock2010)

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
BLKSZIND	1	STRING	Block Size Indicator
BLOCK	4	STRING	Block Number
BLOCKCE	4	STRING	Tabulation Block Number
BLOCKID	15	STRING	FIPS State Code, FIPS County Code, Census Tract Code, Block Number
COUNTYFP	3	STRING	Census County FIPS code
COUNTYFP10	3	STRING	FIPS County Code
FID	10	INTEGER	Permanent Face ID
NCELIGBLE	1	STRING	New Construction Program eligible
PARTFLG	1	STRING	Part Flag Indicator
SHAPE	7	STRING	Type of shape
STATEFP	2	STRING	Census state FIPS code
STATEFP10	2	STRING	FIPS State Code
SUFFIX1CE	2	STRING	Census Block Suffix 1
SUFFIX2CE	2	STRING	Census Block Suffix 2
TRACTCE10	6	STRING	Census tract code

Table 59: Census Tract Shapefile (PVS_17_v2_curtracts)

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
CHNG_TYPE	2	STRING	Type of area update
COUNTYFP	3	STRING	FIPS County Code
EFF_DATE	8	STRING	Effective Date or Vintage
FID	10	INTEGER	Permanent Face ID
JUSTIFY	150	CHAR	Justification
NAME	100	STRING	Name
NEW_CODE	2	STRING	New Congressional District Code
RELATE	120	STRING	Relationship Description
SHAPE	7	STRING	Type of shape
STATEFP	2	STRING	FIPS State Code
TRACTCE	6	STRING	Census Tract Code
TRACTID	11	STRING	FIPS State Code, FIPS County Code, Census Tract Code
TRACTLABEL	7	STRING	Tract number used for LUCA geocoding
TRACTTYP	1	STRING	Tract Characteristic Flag
VINTAGE	2	STRING	Vintage updated with returned data

Table 60: American Indian Areas Shapefile (PVS_17_v2_aial)

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
AIANNHCE	4	String	Census AIANNH Code
AIANNHFSR	1	String	Flag Indicating Level of Recognition of an AIA
AIANNHNS	8	String	ANSI numeric identifier for AIA areas
AREA	10	Double	Acreage of Area Update
AUTHTYPE	1	String	Authorization Type (O – Ordinance, R – Resolution, L – Local Law, S – State Level Action, X – Other)
CHNG_TYPE	2	String	Type of Area Update
CLASSFP	2	String	FIPS 55 Class Code Describing an Entity
COMPTYP	1	String	Indicates if Reservation, Trust Land, or both are Present
COUNTYFP	3	String	FIPS County Code
DOCU	120	String	Supporting Documentation
EFF_DATE	8	Date	Effective Date
FID	10	INTEGER	PERMANENT FACE ID
FORM_ID	4	String	(MTPS and Web BAS Only)
FUNCSTAT	1	String	Functional Status
JUSTIFY	150	Char	Justification
LSAD	2	String	Legal / Statistical Area Description
NAME	100	String	AIA name
NAMELSAD	100	String	Name with Translated LSAD
PARTFLG	1	String	Part Flag Indicator
RELATE	120	String	Relationship description
Shape	7	STRING	TYPE OF SHAPE
STATEFP	2	String	FIPS State Code
VINTAGE	2	String	Vintage of the Data

Table 61: County and Equivalent Areas Shapefile (PVS_17_v2_county)

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
STATEFP	2	String	FIPS state code
COUNTYFP	3	String	FIPS county code
COUNTYNS	8	String	ANSI feature code for the county or equivalent feature
NAMELSAD	100	String	Name with translated LSAD code
LSAD	2	String	Legal/Statistical Area Description code
FUNCSTAT	1	String	Functional status
CLASSFP	2	String	FIPS 55 class code describing an entity
CHNG_TYPE	2	String	Type of area update
EFF_DATE	8	Date	Effective date or vintage
AUTHTYPE	1	String	Authorization type (O – Ordinance, R – Resolution, L – Local Law, S – State Level Action, X – Other)
DOCU	120	String	Supporting documentation
FORM_ID	4	String	Record ID (GUPS only)
AREA	10	Double	Area of update
RELATE	120	String	Relationship description
JUSTIFY	150	String	Justification of change
NAME	100	String	Entity name
VINTAGE	2	String	Vintage of the data

Table 62: County Subdivisions Shapefile (PVS_17_v2_mcd)

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
STATEFP	2	String	FIPS state code
COUNTYFP	3	String	FIPS county code
COUSUBFP	5	String	FIPS 55 county subdivision code
NAMELSAD	100	String	Name with translated LSAD
COUSUBNS	8	String	ANSI feature code for the county subdivision
LSAD	2	String	Legal/Statistical Area Description
FUNCSTAT	1	String	Functional status
CLASSFP	2	String	FIPS 55 class code describing an entity
CHNG_TYPE	2	String	Type of area update
EFF_DATE	8	Date	Effective date or vintage
AUTHTYPE	1	String	Authorization type (O – Ordinance, R – Resolution, L – Local Law, S – State Level Action, X – Other)
DOCU	120	String	Supporting documentation
FORM_ID	4	String	Record ID (GUPS only)
AREA	10	Double	Area of update
RELATE	120	String	Relationship description
JUSTIFY	150	String	Justification of change
NAME	100	String	Entity name
VINTAGE	2	String	Vintage of the data

Table 63: Incorporated Place Shapefile (PVS_17_v2_place)

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
STATEFP	2	String	FIPS state code
COUNTYFP	3	String	FIPS county code
PLACEFP	5	String	FIPS 55 place code
NAMELSAD	100	String	Name with translated LSAD
PLACENS	8	String	ANSI feature code for the place
LSAD	2	String	Legal / Statistical Area Description
FUNCSTAT	1	String	Functional status
CLASSFP	2	String	FIPS 55 class code describing and entity
PARTFLG	1	String	Indicates if only part of a feature is represented
CHNG_TYPE	2	String	Type of area update
EFF_DATE	8	Date	Effective date or vintage
AUTHTYPE	1	String	Authorization type (O – Ordinance, R – Resolution, L – Local Law, S – State Level Action, X – Other)
DOCU	120	String	Supporting documentation
FORM_ID	4	String	Record ID (GUPS only)
AREA	10	Double	Area of update
RELATE	120	String	Relationship description
JUSTIFY	150	String	Justification of change
NAME	100	String	Entity name
VINTAGE	2	String	Vintage of the data

APPENDIX M GLOSSARY

Address breaks—Address breaks identify the city style addresses on each side of a boundary or at an intersection of street with another street or another feature.

Address Count List—Identifies the number of housing unit addresses and group quarters addresses on the Census Address List for each census block within a jurisdiction.

Address range—The lowest and highest address numbers used to identify structures along each side of a street segment that has city style addresses. Usually one side of the street has even address numbers and the other side has odd address numbers.

Block to Map Sheet Relationship List—A list identifying census block numbers and the Census Bureau large format map(s) on which each block is located.

Boundary—A line, on a map, either invisible or coincident with a visible feature that identifies the extent of a geographic entity, such as a census tract, city, county, or state. A boundary marks the limits of an area.

Census Address List—The Census Address List, extracted from the Master Address File (MAF) for review and update during 2020 LUCA, contains all the residential addresses (city style and non-city style) known to the Census Bureau for your government. It also contains census geographic codes (state, county, census tract, census block) that indicate the location of each address. Many addresses also contain latitude and longitude coordinates depicting the address location.

Census block—A census block is an area bounded by visible and/or invisible features shown on Census Bureau maps. A census block is the smallest geographic area created by the Census Bureau for which it collects and tabulates decennial census data. Census blocks are numbered within census tracts and are uniquely numbered within census tracts.

Census block number—Census block numbers are a 4-digit number plus up to two alpha character suffix, if applicable, e.g. 3001A or 2002AA. Suffixes, boundary changes as well as added features within the given block that split the original block.

Census Bureau—An agency within the U.S. Department of Commerce. The U.S. Census Bureau is the country's preeminent statistical collection and dissemination agency. It publishes a wide variety of statistical data about people and the economy of the nation. The Census Bureau conducts approximately 200 annual surveys and conducts the decennial census of the United States population.

Census Bureau map—Any map produced by the Census Bureau. A Census Bureau map displays geographic entities used in a Census Bureau sponsored census or survey for which the Census Bureau tabulates data.

Census tract—A small, relatively permanent statistical subdivision of a county or statistically equivalent entity delineated for data presentation. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment, census tracts generally contain between 1,000 and 8,000 people, with an optimum size of 4,000 people. Delineated with the

intention of being stable over many decades, census tract boundaries generally follow relatively permanent visible features. However, they may follow governmental unit boundaries and other invisible features in some instances; the boundary of a state or county (or statistically equivalent entity) is always a census tract boundary.

Census tract number—Unique numbers to identify census tracts within a county or statistically equivalent entity. Census tract numbers are a 4-digit number followed by a decimal point and a 2-digit number for suffixed tracts, e.g., 1234.01. For census tracts without a suffix, the number will contain a period with zero fill, e.g., 4567.00.

City style address—The Census Bureau's definition of a city style address is an address consisting of a house number and street or road name. For example, 201 Main Street is a city style address. The address may or may not be used for the delivery of mail and may include apartment numbers/designations or similar identifiers.

Confidentiality—The guarantee made by law (Title 13, United States Code) to individuals who provide information about themselves or their business to the Census Bureau. This item refers to the Census Bureau's promise of nondisclosure of that information to others.

County—The primary legal division of most states. Most are governmental units with powers defined by state law.

Edges shapefile—All linear features in the MAF/TIGER database are contained in the edges shapefile.

Enumeration at Transitory Locations (ETL) operation—Provides coverage for locations where people live in non-traditional housing that is transient or movable in nature. Most census questionnaires are mailed, or hand-delivered by census personnel, to known addresses in the Census Master Address File (MAF). However, due to changes in society, some people no longer maintain a traditional residence (house, apartment, condo, etc.), and have decided to live in boats, motorized recreational vehicles (RVs), trailers that are pulled by car or trucks, or any other type of housing that is movable or mobile, including tents. For operational purposes, we refer to these as 'portable housing units.'

The type of Transitory Locations (TLs) that are included in the ETL are:

1. Recreational (RV) parks.
2. Marinas.
3. Campgrounds.

Feature—Any part of the landscape, whether natural (such as, a stream or ridge) or man-made (such as a road or power line). In a geographic context, features are any part of the landscape portrayed on a map, including nonvisible boundaries of legal entities, such as city limits or county lines.

Federal Information Processing Series (FIPS)—These are codes formerly known as Federal Information Processing Standards codes, until the National Institute of Standards and Technology (NIST) announced its decision in 2005 to remove geographic entity codes from its oversight. The Census Bureau continues to maintain and issue codes for geographic entities covered under FIPS oversight, albeit with a

revised meaning for the FIPS acronym. Geographic entities covered under FIPS include states, counties, congressional districts, core based statistical areas, places, county subdivisions, sub-minor civil divisions, consolidated cities, and all types of American Indian, Alaska Native, and Native Hawaiian areas. FIPS codes are assigned alphabetically according to the name of the geographic entity and may change to maintain alphabetic sort when new entities are created or names change. FIPS codes for specific geographic entity types are usually unique within the next highest level of geographic entity with which a nesting relationship exists. For example, FIPS state, congressional district, and core based statistical area codes are unique within nation; FIPS county, place, county subdivision, and sub-minor civil division codes are unique within state. The codes for American Indian, Alaska Native, and Native Hawaiian areas also are unique within state; those areas in multiple states will have different codes for each state.

Geocodes—Codes that place an individual address in its correct geographic location, which, in census terms, includes the correct state, county, census tract, and census block codes. Because the Census Bureau counts people where they live, geocodes provide information to Census enumerators for locating an address. Accurate geocoding also ensures the Census Bureau counts housing units, and the people associated with them, in the correct census geography.

Geographic Information System (GIS)—A computer system for the storage, retrieval, and maintenance of information about the points, lines, and areas that represent the streets and roads, rivers, railroads, geographic entities, and other features on the surface of the Earth-information that previously was available only on paper maps.

Geographic Update Partnership Software (GUPS)—A self-contained GIS update and processing package provided by the Census Bureau for participation in a variety of Census geography programs, including 2020 LUCA. Pre-packaged to include all of the components for 2020 LUCA, the GUPS contains the Census Address List, address count list, and TIGER partnership shapefiles. GUPS allows the participant to add external geospatial data (shapefiles, geodatabases, and imagery) for comparison and update purposes. Delivery of all data (software, address list, address count list and shapefiles) is on DVD.

Governmental unit (GU)—A geographic entity established by legal action for the purpose of implementing specified governmental functions. Most governmental units provide a number of general government services and raise revenues (usually through taxing authority).

Group quarters (GQ)—A place where people live or stay normally owned or managed by an entity or organization providing housing and/or services for the residents. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. People that live in a group quarters are usually not related. Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, workers' dormitories, and facilities for people experiencing homelessness.

Highest elected official (HEO)—The person most responsible for the governmental activities of a local government. This person receives the LUCA invitation letter, and must designate a LUCA liaison, to participate in the 2020 LUCA Operation.

Housing unit (HU)—A single-family house, townhouse, mobile home, trailer, apartment, group of rooms, or a single room occupied as a separate living quarters or, if vacant, intended for occupancy as a separate living quarters. A separate living quarters is one in which one or more occupants (or intended occupants, if vacant) live separate from any other individual(s) in the building and have direct access to the living quarters without going through another living quarters, such as from outside the building or through a common hall.

Living quarters—Any site where people live, stay, or could live. Living quarters are classified as housing units or group quarters. They are usually found in structures intended for residential use, but also may be found in structures intended for nonresidential use as well as tents, vans, shelters for people without housing, dormitories, barracks, and so forth, or they might not even be associated with a structure at all.

LUCA liaison—A person appointed by the highest elected official (HEO) of each jurisdiction to review the Census Address List and maps against local records to identify differences. This person is also known as the program primary liaison or designated liaison.

MAF/TIGER Database—The Census Bureau's nationwide geographic database, which integrates the Master Address File (MAF) and Topologically Integrated Geographic Encoding and Referencing (TIGER) files.

Master Address File (MAF)—The Census Bureau's nationwide database of all addresses and physical/location descriptions known to the Census Bureau used to support many of the Census Bureau's operations. Besides containing mailing addresses and ZIP Codes, a MAF record also contains geographic information about the location of addresses. The Census Bureau's Geography Division regularly updates the MAF/TIGER Database from various sources, including the United States Postal Service (USPS) Delivery Sequence File (DSF) and other sources of updates such as current surveys and locally provided sources.

Metadata—Describes the data content, coordinate system/projection, author, source, and other characteristics of GIS files.

Minor civil division (MCD)—A type of governmental unit that is the primary governmental or administrative subdivision of a county in many states. MCDs are identified by a variety of terms, such as town (in 8 states), township, and/or district, and include both functioning and nonfunctioning governmental entities.

Non-city style address—An address that does not have a house number and/or street name or may not include a complete house number and street name address. This includes rural route and box number address and highway contract route addresses, etc., which may include a box number, post office boxes and drawers, and general delivery.

Occupied housing unit—A housing unit is classified as occupied if it is the usual place of residence of the individual or group of persons living in it at the time of enumeration or if the occupants are only temporarily absent; for example, away on vacation. Occupied rooms or suites of rooms in hotels, motels, and similar places are classified as housing units only when occupied by permanent residents, that is, individuals for whom the facility is their usual place of residence.

Place—A concentration of population either legally bound as an incorporated place or identified by the Census Bureau as a census designated place.

Regional Office—One of six permanent Census Bureau offices distributed across the nation. Regional offices are responsible for the Census Bureau's field operations.

Shapefile—Digital representations of geographic features, such as roads and boundaries used to create maps. A shapefile stores non-topological geometry and attribute information for the spatial features in a dataset. The Census Bureau provides county-based shapefiles in Environmental Systems Research Institute (Esri) shapefile format.

Street segment—The portion of a street or road between two features that intersect that street or road, such as other streets or roads, railroad tracks, streams, and governmental unit boundaries. The Census Bureau records the known address ranges for every street segment with city style addresses.

Structure Point (map spot)—A dot on a Census Bureau map, used to show the location of one or more living quarters. A maximum of 4-digits plus one alpha character is assigned within a census block to each structure point. Structure points are stored in the TIGER database and are protected by Title 13 U.S.C.

Topologically Integrated Geographic Encoding and Referencing (TIGER)—The Census Bureau's digital map, including the geographic coordinates and names of streets, water features, other linear features, and boundaries for all jurisdictions and statistical areas that provide the geospatial framework for collecting and tabulating census data. TIGER also contains the structure coordinates of address records in the Master Address File (MAF) and address ranges along street features used for geocoding MAF records to census geography.

Transitory locations (TL)—Movable or mobile housing, or portable housing units, including boats, motorized recreational vehicles (RVs), tents, trailers that are pulled by cars or trucks, or any other type of portable housing.

Vacant housing unit—A habitable structure containing living quarters that is not occupied. New housing units not yet occupied are classified as vacant housing units if construction has reached a point where exterior windows and doors are installed and final usable floors and a roof are in place. Vacant units are excluded if they are open to the elements, or if there is positive evidence, such as a sign on the house, that the housing unit is to be demolished or has been condemned.