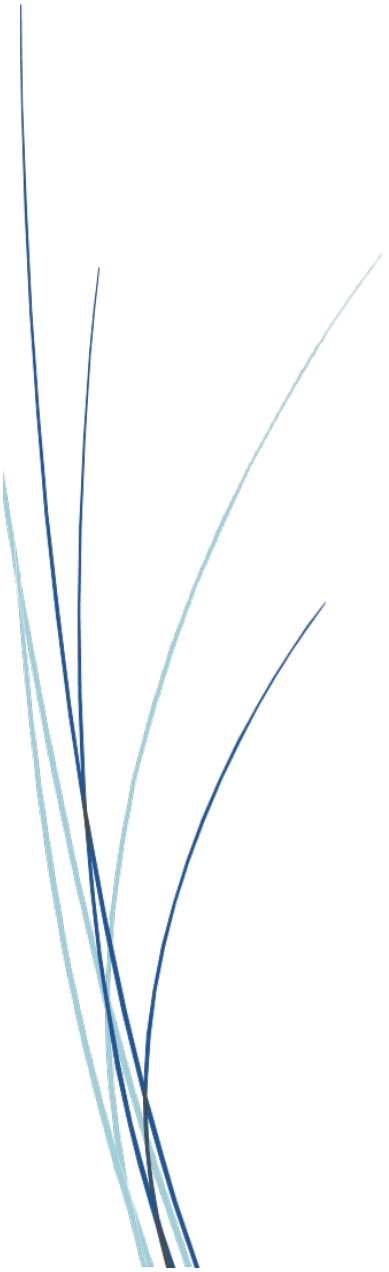
Boundary and Annexation Survey Geographic Update Partnership Software How-to Guide (Standalone version)

Instructions for Participating in the Boundary and Annexation Survey Using the Standalone version of the Geographic Update Partnership Software



United States® Census Bureau

U.S. Census Bureau GEOGRAPHY

Last Updated January 2025.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

This page intentionally left blank.

INTRODUCTION

The Boundary and Annexation Survey (BAS) provides eligible governments, which include tribal, state, and general-purpose local governments, an opportunity to review the Census Bureau's legal boundary data to ensure the Census Bureau has the correct boundary, name, and status information. BAS also allows participants to review and provide updates to census designated place (CDP) boundaries and linear features. Maintaining correct boundaries helps the Census Bureau assign appropriate housing and population counts to each government. Title 13, Section 6, United States Code authorizes this survey.

BAS fulfills the agency's responsibility as part of the National Spatial Data Infrastructure, for which the Office of Management and Budget (OMB) Circular A–16 designates the Census Bureau as the lead federal agency for maintaining national data about legal government boundaries, as well as administrative and statistical boundaries. BAS supports the geospatial data steward responsibilities of the Geospatial Data Act, the Evidence Act, OMB E-Gov, the Federal Geographic Data Committee, Data.gov, GeoPlatform.gov, the National Map, the Geographic Names Information System, and the Geospatial One-Stop.

The Census Bureau uses the boundaries collected in BAS to tabulate data for various censuses and surveys including the decennial census, American Community Survey (ACS), and Population Estimates Program (PEP). It also uses the boundaries collected through BAS to support several other programs such as Congressional and State Legislative redistricting, the Economic Census, the Geographically Updated Population Certification Program, and the Special Census program.

A. Key Dates for BAS Respondents

January 1 Legal boundary changes must be in effect on or before this date to be reported in the current survey year.

March 1 First BAS deadline–Legal boundary changes returned by this date will be shown in the ACS and PEP data and in next year's BAS materials.

May 31 Final BAS deadline–Legal boundary changes returned by this date will be shown in next year's BAS materials. If time permits, boundary corrections returned by this date may also be shown.

B. Adjacencies and Legal Disputes

The Census Bureau will not make any boundary change that affects adjacent legal governments without the appropriate documentation. Review any changes that affect adjacent governments to determine if they are intentional legal changes. If the Census Bureau discovers that an area of land is in dispute between two or more jurisdictions, the Census Bureau will not make any changes until the parties come to a written agreement or there is a documented final court decision regarding the dispute. To learn more, contact the Census Bureau Legal Office at **1-301-763-2918**.

For disputes involving tribal areas, the Census Bureau must defer to the Office of the Solicitor at the Department of the Interior for a legal opinion. Often complicated land issues require an extended period for resolution, and in those cases, the Census Bureau will retain the current boundary until a legal opinion is issued by the Solicitor's office.

C. Contact Us

For assistance in preparing a BAS submission or if issues arise with the Geographic Update Partnership Software (GUPS), contact the Census Bureau at <geo.bas@census.gov> or **1-800-972-5651**.When emailing <geo.bas@census.gov>, include the following details:

- BAS ID and Government Name.
- Entity type.
- Contact information.
- Version of GUPS in use.
- Full text of the error message received as a screenshot or text (if applicable).
- Screenshots of discrepancies (if applicable).

D. Resources

Additional resources include a technical guide and videos that demonstrate the BAS submission process. For background on Census Bureau geography and technical details regarding BAS submissions, change types, and shapefiles, see the BAS Technical Guide at: <www.census.gov/programs-surveys/bas/information/respondent-guides.html>. Videos of recorded demonstrations and informational sessions are available on the BAS website at: <www.census.gov/programs-surveys/bas/library/bas-videos.html>.

CHAPTER 1 GETTING STARTED WITH GUPS

The Geographic Update Partnership Software (GUPS) is a user-friendly geographic information system (GIS) that is customized for each of the Census Bureau's geographic partnership programs. GUPS features a BAS and Tribal BAS module which offers tools specific to BAS that allows participants to create a standardized submission. Standardized submissions allow the Census Bureau to easily process returned BAS files. GUPS is designed as a digital method to mimic paper map updates, allowing for more accurate digital submissions that are created with imagery and geospatial reference data in mind.

1.1 Downloading and Installing GUPS

A standalone version of GUPS is available for download directly from the BAS website at: <www.census.gov/programs-surveys/bas/technical-documentation/gups-instructions.html>. See section **1.1.2** for step-by-step installation instructions. Once installed, BAS shapefiles can be loaded from the BAS website directly into the GUPS application.

1.1.1 System Requirements

Before beginning the installation, confirm the computer has the capabilities needed to run GUPS. GUPS is based on QGIS, a free and open-source desktop GIS application. To learn more about QGIS, visit their website at: <www.qgis.org>. The GUPS application was developed for use in a desktop PC or a network environment. **Table 1** lists the hardware and software requirements to install and run GUPS.

Table 1: System Requirements for GUPS

Hardware	Operating System
Disk Space Needed to Run GUPS: 4 GB **Disk Space Needed to Store *Shapefiles*:** Shapefile sizes vary. To view the size of the shapefiles, right-click, and choose **Properties** in the dropdown menu. The **Files Properties** box will open and display the folder size. Select multiple files/folders in the list to view their properties via the same method. **RAM:** 4 GB minimum, 8 GB or more recommended for optimal performance.	**Windows®:** To run GUPS, Windows users need one of the following operating systems: • Windows 10® • Windows 11® ***Apple®:*** 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. Locate instructions for using Boot Camp at: <www.apple.com/support/bootcamp/getstarted/>. **IMPORTANT**: Since Boot Camp requires a restart of the computer to set up the bridge, be sure to print the instructions provided at the URL above before beginning installation.

1.1.2 Installing GUPS

A standalone version of GUPS is available for download from the BAS website. To install GUPS, follow the steps below once the download is complete.

1. Unzip the file "gups.zip" and extract all contents of the unzipped package to a folder on the computer.
2. Select the **Setup-x.x.x** batch file to start the installation.
3. When the installer opens, the **Welcome to the QGIS GUPS Setup Wizard** screen opens. Follow the instructions on the Wizard and select **Next**.
4. The **License Agreement** screen opens. Review the License Agreement and select **I Agree** to continue the install process.
5. The **Choose Install Location** screen opens. Select **Browse** to choose the location where GUPS will be installed. It is recommended to install the application at the default location shown (C:\Program Files\QGIS GUPS). Select **Next** to continue the install process.
6. The **Choose Components** screen opens. The **Select Components to Install** box will be grayed out as it is the default. Select **Install** to continue.
7. The software should take five to ten minutes to complete the install. When the install is complete, the **Completing the QGIS GUPS Setup Wizard** screen opens. To complete the install, select **Finish** at the bottom of the screen.

Note: Many agencies/organizations require certain security privileges to download and install external software. Work with the local Information Technology (IT) staff to acquire those privileges or ask they assist with GUPS installation. Please note that GUPS users with different security privileges than the IT staff person that installed the software will encounter problems accessing the directories and plugins needed to operate GUPS if the software is not installed under the user's profile. To correct this, have the IT staff person reinstall GUPS under the user's profile using the user's credentials. If installation problems remain, **Contact Us** for installation assistance.

CHAPTER 2 STARTING A BAS PROJECT

2.1 Creating a Project

Once installed, open GUPS by using the mouse to double-click the QGIS icon that appears after the installation is complete.

Figure 1: QGIS Icon

Once open, users can begin to set up a BAS project.

1. To set up the a BAS project, use the **Map Management** tool. This tool should open automatically when opening QGIS. If it does not, select the icon that looks like a map with a north arrow.

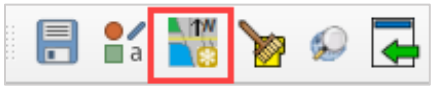


Figure 2: Map Management tool on the Standard toolbar

   a. The Map Management tool will set up the workspace and download the Census Bureau's shapefiles for review.

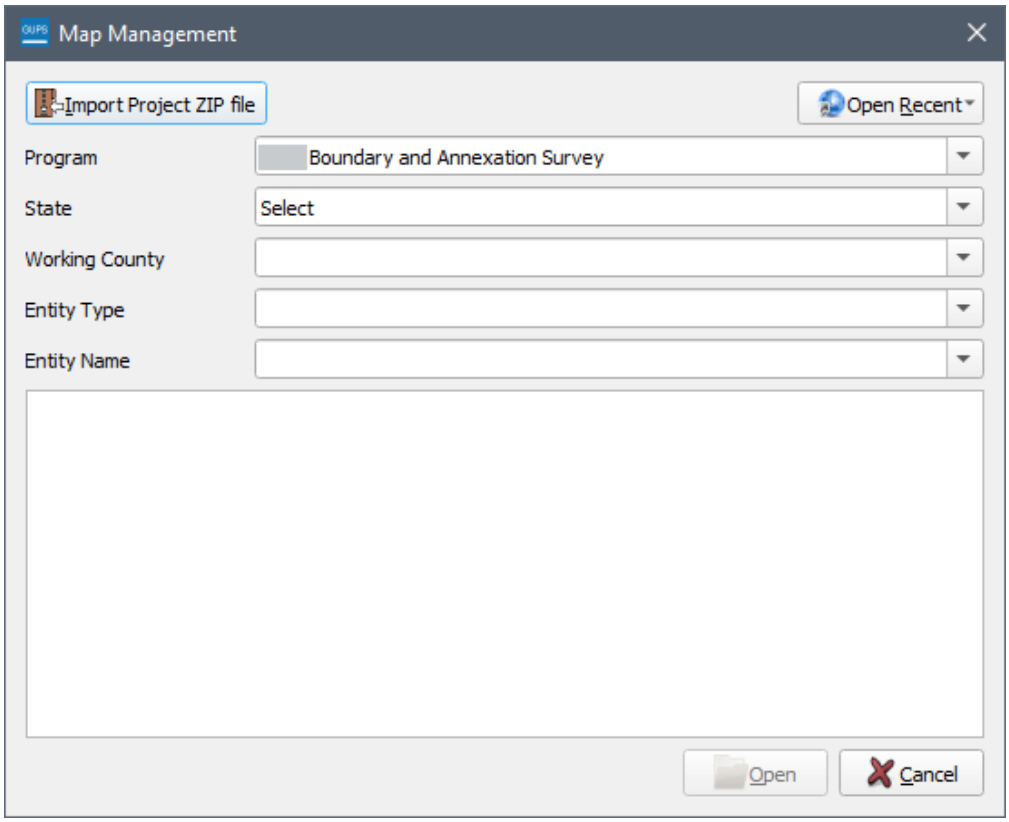


Figure 3: Map Management window for BAS

Note: If the previous year's options for BAS or Tribal BAS appear in the Map Management window, update GUPS to the current version (section **1.1**).

b. Within the Map Management window, select a **Program**:
   i. Non-tribal governments: select **2025 Boundary and Annexation Survey** and continue with step **c**.
   ii. Tribal governments: select **2025 Tribal Boundary and Annexation Survey** and continue with step **d**.

c. For BAS complete the following:
   i. **State**: The state your government is within.
   ii. **Working County**: The county your government is within. If your government is in two or more counties, create a project for each county your government is in.
   iii. A secondary Map Management window appears to select the data source for the working county. The options to load current BAS Partnership Shapefiles into the project include:
   (1) **My Computer**: select shapefiles from a location on the hard drive, or
   Census Web: shapefiles directly from the Census Bureau website. The Census Web option is recommended. See section **2.2** for more information on loading BAS Partnership Shapefiles into the GUPS project.

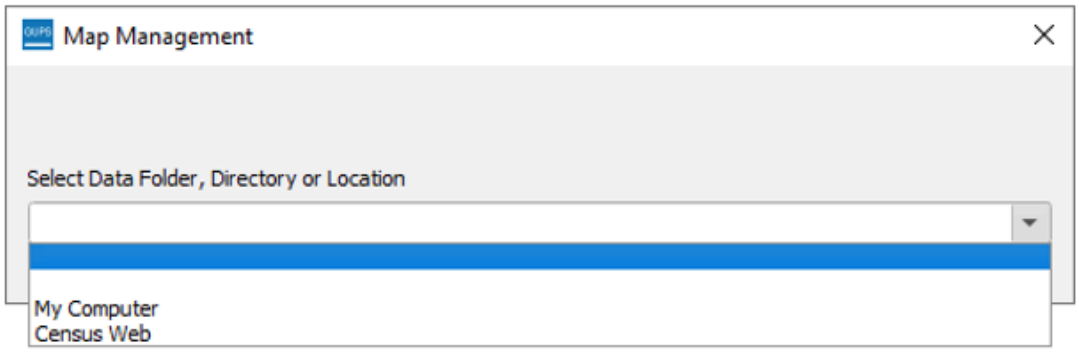


Figure 4: Secondary Map Management window to Select a Data Source

   iv. **Entity Type**: The type of the government you are reporting for.
   v. **Entity Name**: The name of the government you are reporting for.
   vi. A list appears below the chosen government name that contains the names of all the counties in the selected state. The names of the counties that are adjacent to the working county will show up at the top of the list highlighted in yellow. Check any counties to visualize them on the map. If your government is in two or more counties, select the additional county or counties at this time; however, changes may only be made inside the working county.

d. For Tribal BAS complete the following:

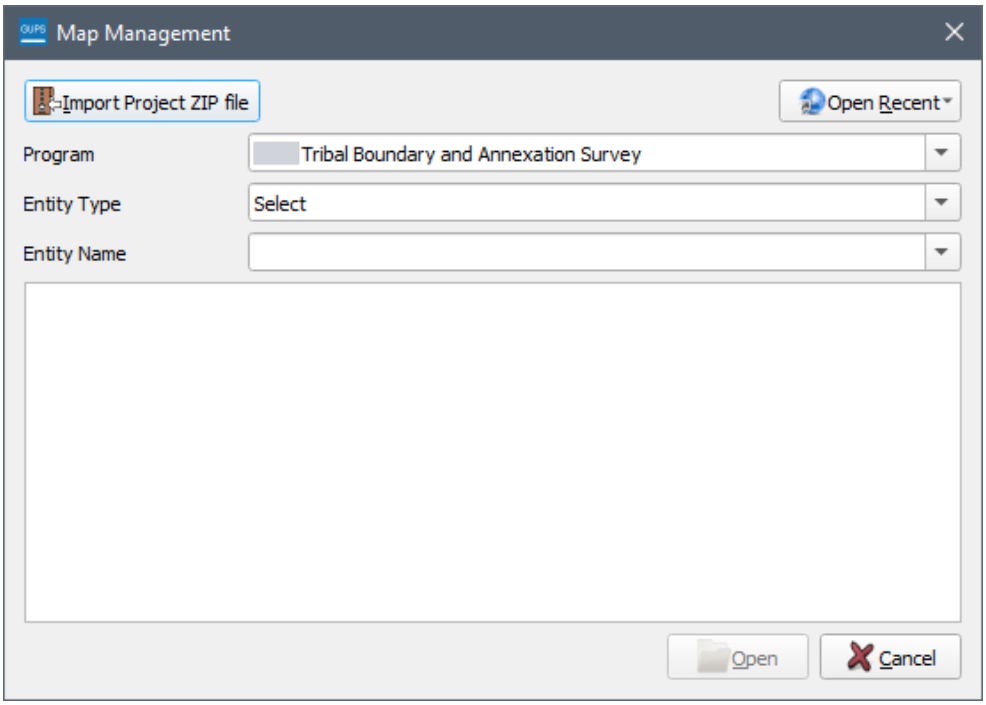


Figure 5: Map Management window for Tribal BAS

i. **Entity Type**: Alaska Native Regional Corporation, Hawaiian Home Land, or Reservation / Trust Land.

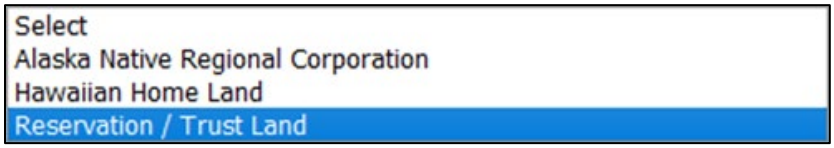


Figure 6: Tribal BAS Entity Type options

ii. **Entity Name**: Select the name of the area you are reporting changes for from the dropdown menu. This menu does not include the names of the tribe or tribal governments.

iii. A dialog window opens that allows the user to select the data resource for the working entity. The options to load current BAS Partnership Shapefiles into the project include:
   (1) **My Computer**: select shapefiles from a location on the hard drive, or
   (2) **Census Web**: shapefiles directly from the Census Bureau website. The Census Web option is recommended. See section **2.2** for more information on loading BAS Partnership Shapefiles into the GUPS project.

iv. A list appears below the government name that contains the names of all the counties in the selected tribal reservation or trust lands. The names of the counties that are adjacent to the working county will show up at the top of the list highlighted in yellow. Check any counties to visualize them on the map.

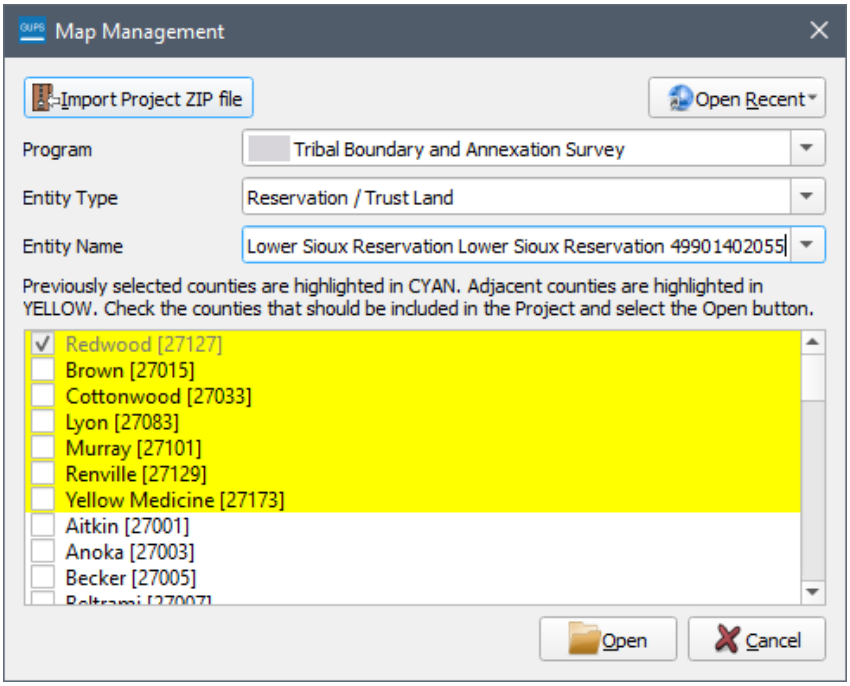


Figure 7: Map Management window with Adjacent Counties in yellow

2. Select **Open** and the Census Bureau data opens in the map screen.

2.2 Loading BAS Partnership Shapefiles

This section expands on the two options, shown in **Figure 4**,to load the current BAS Partnership Shapefiles into the project that appear during Map Management setup after selecting the working county or entity type.

2.2.1 Census Web (Recommended)

BAS Partnership Shapefiles can be loaded directly into the application from the BAS website by choosing the Census Web option during project setup. Users can load the shapefiles as needed or load multiple county files at once. This is the recommended method for loading the BAS Partnership Shapefiles into GUPS so that required files are placed in the correct location for the application to access.

2.2.2 My Computer

When the My Computer option for loading files is selected, the user must first download the shapefiles from the Census Bureau's Partnership Shapefiles webpage. GUPS will then load them after the user selects the folder in which they are located. The Census Web option automates this process. To use the My Computer option:

1. Navigate to the BAS Partnership Shapefiles webpage at: <www.census.gov/geographies/mapping-files/time-series/geo/partnership.html>. Be certain to select the version used for BAS (v2) and not the other versions that may appear on the page.
2. Under **2025 Partnership Shapefiles for 2025 BAS** in the **Select a state** dropdown box, select the name of the state in which the government is located from the dropdown list.

3. Select the county(ies) or county equivalent(s) needed by choosing the box next to it. Up to five (5) counties may be selected at one time. Once the counties selection is complete, select **Submit** at the bottom left-hand side of the page. Tribal BAS participants should download all counties within their working area.

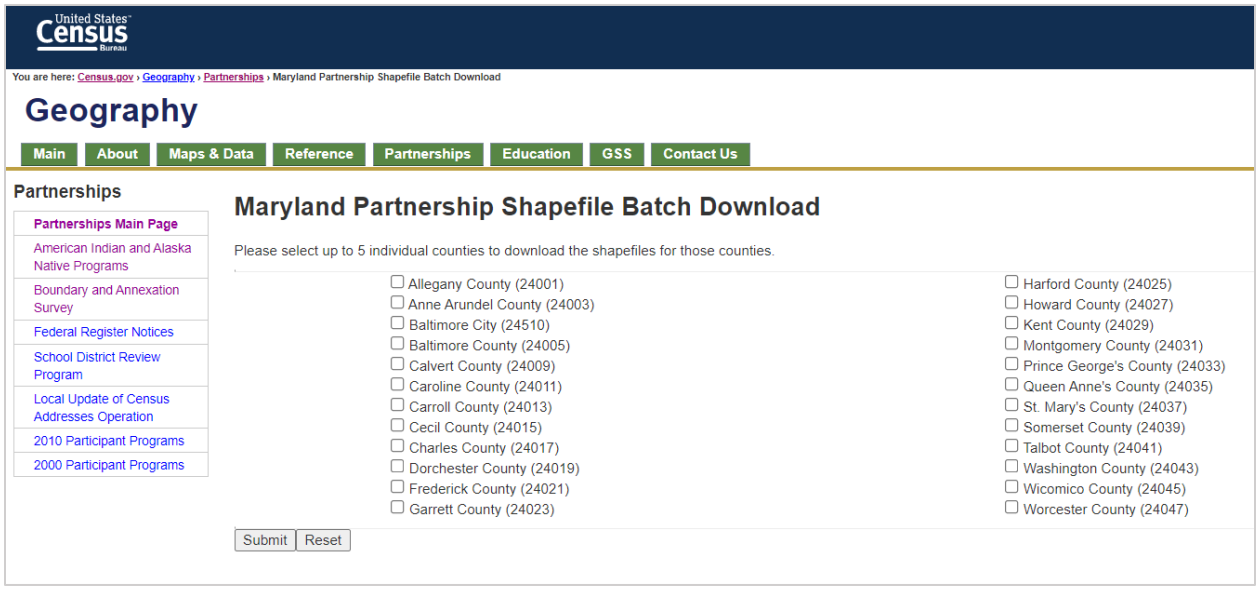


Figure 8: Partnership Shapefile Batch Download Page

4. A prompt to save the file(s) appears. This prompt will look different depending on which browser is used.

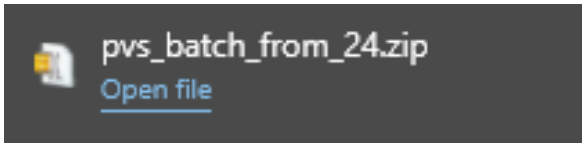


Figure 9: Example of the downloaded .zip file in Edge browser

5. Select the down arrow next to Save and select **Save As** in the dropdown list. The Save As dialog window appears, with the file appearing in the File Name field. If more than one county was selected, a single zip file containing the selected counties is saved.

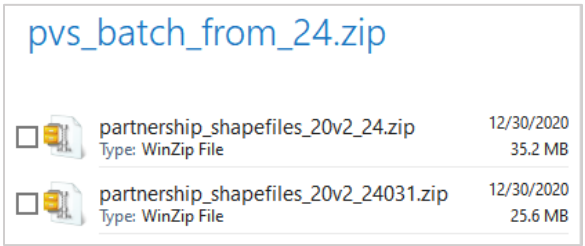


Figure 10: Nested .zip files

Note: The BAS year used in screenshots throughout this document may vary, however, functionality remains the same.

6. In the Save As dialog window, select a location in the home directory to save the files.
7. Select **Save** to save the files in the selected location.

8. To obtain shapefiles for additional counties, repeat the download process as needed.
9. Unzip all the zip files to the working folder.
10. When the geography is selected in GUPS, the application asks to specify the location. Select **My Computer**. When a selection is made, GUPS asks to select a directory. Navigate to the location where the files were saved and select those to be uploaded. GUPS loads the files, then moves them to the pre-established folder in the home directory.

2.3 GUPS Overview

Once the project is loaded and open, review the current Census Bureau geography in the map to find areas that need to be updated.

BAS participants can use the BAS Module in GUPS to:

- Add, delete, and modify legal governments for:
  - Counties [and equivalent areas].
  - Minor Civil Divisions (MCDs).
  - Incorporated Places.
  - Consolidated Cities.
- Add, delete, and modify CDPs.
- Add, delete, and modify linear features (roads, railroads, and water).

Tribal BAS participants can use the Tribal BAS Module in GUPS to:

- Add, delete, and modify legal governments (Federally Recognized Reservation and Off-Reservation Trust lands, and Tribal Subdivisions).
- Add, delete, and modify CDPs.
- Add, delete, and modify linear features (roads, railroads, and water).

2.3.1 Adding Local Data

To import locally owned imagery, geodatabase, shapefiles, web mapping service, or other data layers into GUPS use the **Add Data** toolbar.

Figure 11: Add Data toolbar

Note: Although shown in a horizontal position in **Figure 11**, the **Add Data** toolbar appears arranged vertically to the left of the Layers Panel in GUPS. Its tools are described in **Appendix A**.

To add a vector layer, such as a shapefile or geodatabase layer from the local computer:

1. Select the **Add Vector Layer** tool on the **Add Data toolbar**.

Figure 12: Add Vector Layer tool

2. The **Add Vector Layer** dialog window opens. Select the ellipses and navigate to the folder where the shapefile or geodatabase is saved on the computer.
3. Left-click the file to be uploaded, then select **Add**. The shapefile/geodatabase is added to the **Layers Panel** and to the **Map View**.

Users can also add data from Web Mapping Services (WMS), raster-based imagery and other data types using the corresponding tools on the Add Data toolbar. Refer to the QGIS website at: <www.qgis.org> for information on these options.

2.3.2 Basic Map Tools

The Standard toolbar (**Figure 13**) provides the tools to interact with the map and layers' attribute tables. These tools are used to identify and select/deselect features on the map and to view feature attributes. They are also used to make measurements and create spatial bookmarks. The location of the sub-toolbars can be moved by left-clicking the parallel lines preceding the sub-toolbar and while holding down the mouse, dragging the sub-toolbar to the desired location.

Figure 13: Standard toolbar

The BAS toolbar (**Figure 14**) provides the tools for the BAS-specific functions needed to complete review and update activities, as well as to import and export zipped shapefiles. It has additional options for toggling imagery. An explanation of the tools on each toolbar and an overview of their functions can be found in **Appendix A.**

Figure 14: BAS toolbar

CHAPTER 3 GEOGRAPHIC REVIEW AND UPDATE

At this point, users should review their boundary, noting where adjustments are required or where linear features need to be added or removed. Common changes include annexations, or additions of land to a government, deannexations, or deletions of land from a government, and boundary corrections.

3.1 Creating Change Files

The first two tools to become familiar with are the Add Linear Feature tool and the Modify Area Feature tool. The Modify Area Feature tool works by selecting faces, polygons bounded by linear features such as road and water features, as well as nonphysical boundaries such as parcel lines, cadastral features, etc. If the area to add or remove is not already bounded by features, users will need to perform two steps.

First, users will need to create the sides of the polygons using the Add Linear Feature tool on the BAS toolbar (section **3.4**). Then once a polygon is bounded by features, add or remove the area using the Modify Area Feature tool (section **3.3**). Repeat as necessary to create the changes to update the boundary. This will create a change file to review and submit to the Census Bureau.

3.2 Legal Changes

The primary goal of BAS is to document legal boundary changes. When creating legal changes for incorporated places, MCDs, and counties such as annexations or deannexations, provide the following information:

- Change type.
- Authorization type.
- Effective date.
- Documentation numbers.

Submissions that are missing any of the required information will not be incorporated into Census Bureau data until the required information has been provided.

3.2.1 Documentation for Legal Tribal Changes

The Census Bureau is responsible for depicting reservation and off-reservation trust land boundaries, but because the Census Bureau is not the authority on the boundaries, documentation is required to update reservation and off-reservation trust land boundaries.

The following changes require documentation:

- New off-reservation trust land.
- New reservation land.
- Changes from off-reservation trust land to reservation land and changes from reservation land to off-reservation trust land.
- Large changes to existing off-reservation trust land.

- Large changes to existing reservation land.
- Boundary corrections to off-reservation trust land or reservation land that do not follow the general shape of the boundary.

For off-reservation trust land, the most common documentation is a trust deed or a letter from the Bureau of Indian Affairs (BIA). Documents should state that the land is “in trust” for the tribe.

For reservation land, documentation examples include (but are not limited to) *Federal Register* Notice, Act of Congress, Executive Order, or a new legal opinion issued by the BIA. When submitting large boundary corrections to an existing reservation, submit the reservation document.

If no documentation is available, contact the tribe’s regional BIA office to obtain documentation. The Census Bureau will treat legal opinions issued in writing from the BIA as documentation since the BIA is the authority on reservation and off-reservation trust land boundaries. If the Census Bureau cannot interpret a document, such as a treaty, the Census Bureau will contact the BIA for assistance.

For questions about documentation, **Contact Us**. To contact the BIA, reach out to the nearest regional office, at: <www.bia.gov/regional-offices>.

3.2.2 Creating Legal Changes

Once the faces to add or remove from the government are identified, use GUPS to create and submit legal boundary changes.

1. Select the **Modify Area Feature** tool (**Figure 15**) on the **BAS toolbar**.

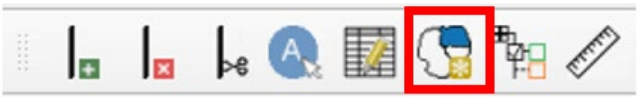


Figure 15: Modify Area Feature tool on the BAS toolbar

2. Select the **Geography** type from the dropdown menu.
3. Select the entity to modify in the **Info** list.

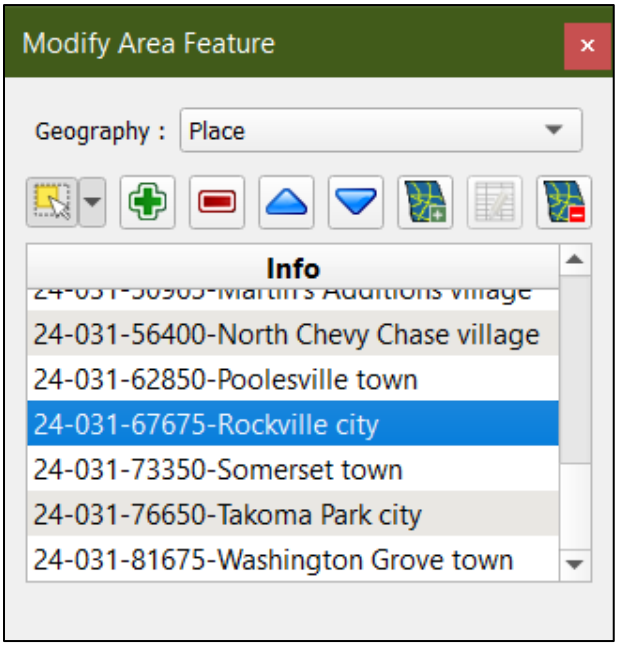


Figure 16: Modify Area Feature dialog window with a Place selected in the Info list

4. Select the **Select Features** tool, the yellow square and cursor icon, in the **Modify Area Feature** toolbar to activate the select tool. It is the yellow square and cursor icon on the left side of the window, next to the **Add Area** tool shown below in **Figure 17**.

3.2.3 Adding Area through Legal Change

To add an annexation or addition to a government as a legal change:

1. Select the faces to modify with the **Select Features** tool.
2. Select the **Add Area** tool to add the faces to the selected entity.

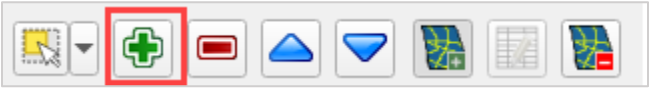


Figure 17: Add Area tool in the Modify Area Feature toolbar

3. Select **Legal Change** as the change type in the dialog window and select **OK.**

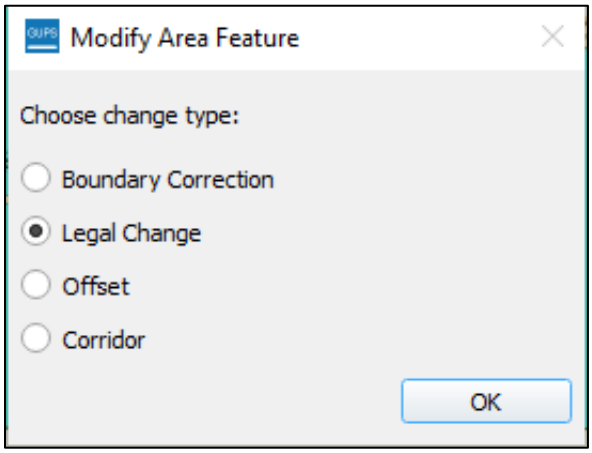


Figure 18: Modify Area Feature dialog window with Legal Change option

4. Complete the required fields for the **Create Change Polygons** dialog window.
    a. **EFF_DATE**: Add the effective date for the legal change using the calendar icon next to the EFF_DATE field or enter the date in MM/DD/YYYY format.
    b. **AUTHTYPE**: Add the authorization type using the dropdown menu.
    c. **DOCU**: Type in the ordinance or other legal documentation number authorizing the change or attach documentation for the change. To attach documentation, select the folder icon next to the DOCU field.
        i. **BAS users:** The full document is not required for the submission to be accepted.
        ii. **Tribal BAS users**: Attach the required document or the reference to the law.
    d. **CHNG_TYPE**: Choose the change type in the dropdown.
5. Select **OK**. This will create a change in the changes file for the geography selected.
6. Selecting **Cancel** will save the change as a boundary correction.

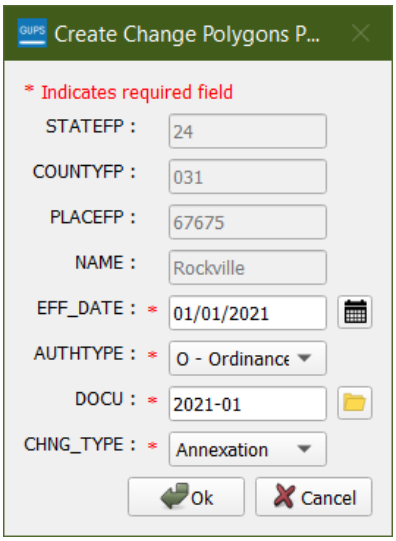


Figure 19: Create Change Polygons dialog window for Legal Changes

Note: Red asterisks indicate required fields. Required fields must be completed to move forward. If one or more required fields are not completed and the OK button is selected, GUPS will prompt the user to complete the fields. Any required field not completed will highlight in red.

3.2.4 Removing Area through Legal Change

To remove an area from a government as a deannexation, or deletion through a legal change:

1. Select the faces to be marked for removal with the **Select Features** tool.
2. Select the **Remove Area** tool to mark the faces to be removed from the selected government.

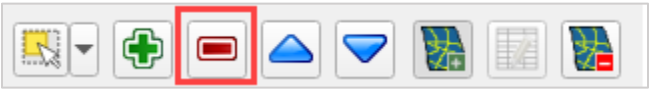


Figure 20: Remove Area tool in the Modify Area Feature toolbar

3. Select **Legal Change** as the change type in the dialog window and select **OK** (**Figure 18**).
4. Complete the required fields for the **Create Change Polygon** dialog window.
    a. **EFF_DATE**: Add the effective date for the legal change using the calendar icon next to the EFF_DATE field or enter the date in MM/DD/YYYY format.

b. **AUTHTYPE**: Add the authorization type using the dropdown menu.
c. **DOCU**: Type in the ordinance or other legal documentation number authorizing the change or attach documentation for the change. To attach documentation, select the folder icon next to the DOCU field.
    i. **BAS users:** The full document is not required for the submission to be accepted.
    ii. **Tribal BAS users**: Attach the required document or the reference to the law.
d. **CHNG_TYPE**: Choose the change type in the dropdown.

5. Select **OK**. This will create a change in the changes file for the geography selected.
6. Selecting **Cancel** will save the change as a boundary correction.

3.3 Boundary Corrections

A boundary correction is the adjustment of a boundary to correct an error in how the Census Bureau depicts an existing boundary. Boundary corrections should follow the general shape of the existing boundary. For both BAS and Tribal BAS, legal documentation is not required when submitting a boundary correction to the Census Bureau.

To create boundary corrections using GUPS:

1. Select the **Modify Area Feature** tool on the **BAS toolbar** (**Figure 15**).
2. Select the **Geography** type from the dropdown menu.
3. Select the entity to modify from the **Info** list (**Figure 16**).
4. Choose the **Select Features** tool, the yellow square and cursor icon, in the **Modify Area Feature** toolbar to activate the select tool.
5. Select the **Add Area** tool (**Figure 17**) to add the faces to the selected geography or the **Remove Area** tool (**Figure 20**) to remove the faces from the selected geography.
6. Select **Boundary Correction** as the change type in the dialog window and select **OK.**

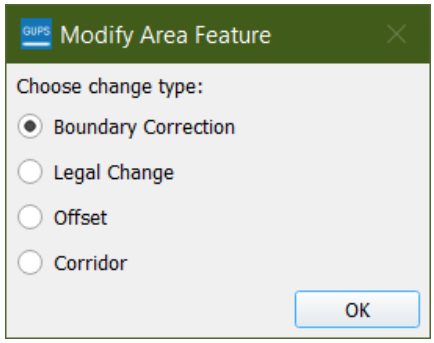


Figure 21: Secondary Modify Area Feature dialog window with Change Types

3.4 Linear Features

It is important that Census Bureau data reflects the most recent linear features to ensure that new or previously missed housing units located along these features are identified and located. Linear features include visible features such as roads, railways, water features like rivers, creeks, and coastlines, but also non-visible features such as property lines and survey lines.

When reviewing linear features (edges layer) on the BAS shapefiles, first determine whether any features are missing or need to be deleted. 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, but exclude private driveways). Attribute updates (e.g., name, class code, and address ranges) may also be added for selected features.

Use the one of the three Linear Feature tools on the BAS toolbar to add, remove, or modify linear features in the project.

3.4.1 Adding Linear Features

1. Select the **Add Linear Feature** tool on the **BAS toolbar**. **Figure 24** shows this button to the left of the **Delete/Restore Linear Feature** tool.
2. To digitize the linear feature, left-click the mouse at the starting point of the line and continue to left-click the mouse at each vertex of the line. When the new line is completed, right-click the mouse. The right-click tells GUPS to finish drawing and the **Add Linear Feature** dialog window will open.

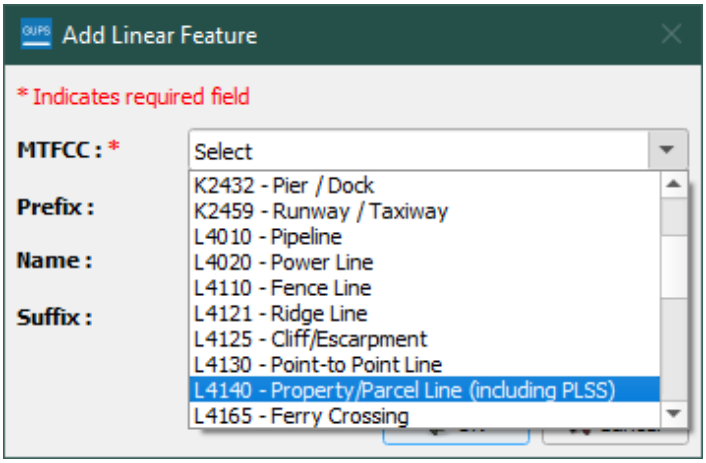


Figure 22: Add Linear Feature dialog window

3. Select the MAF/TIGER Feature Class Code (MTFCC) that corresponds to the type of linear feature being added.
   a. To create the sides of a polygon to add or remove area from an entity, use MTFCC P0001 – Nonvisible Legal/Statistical Boundary.

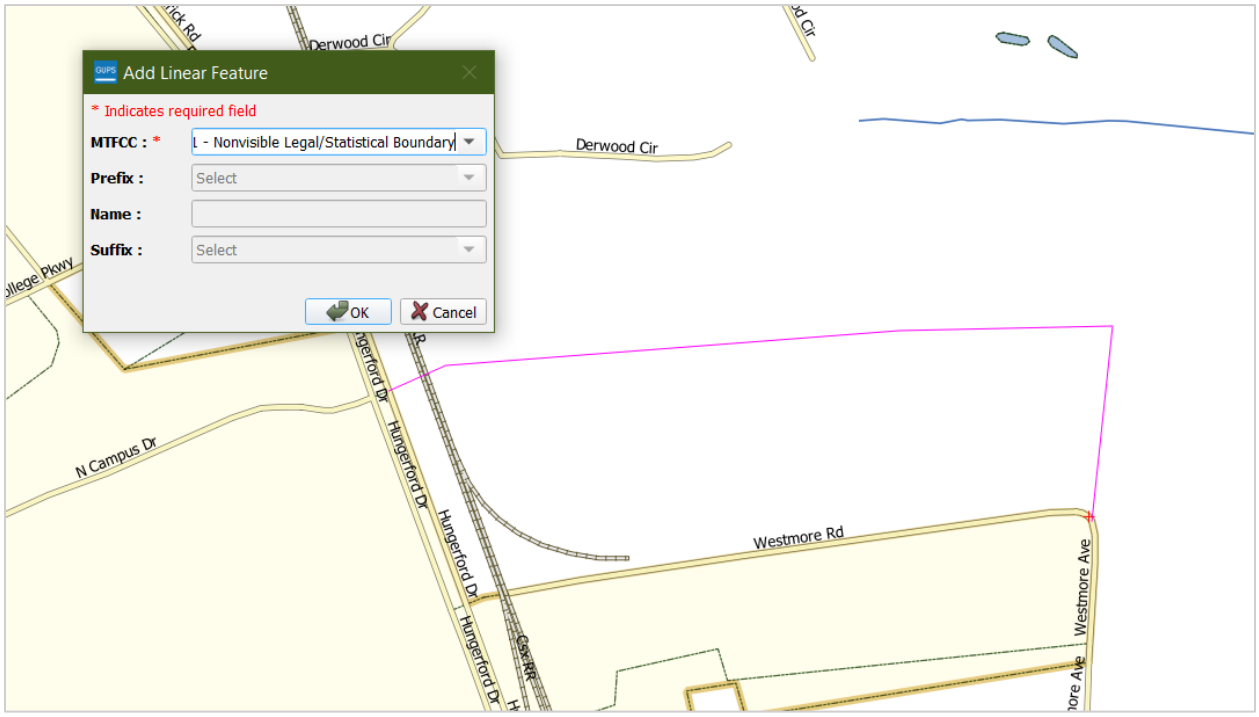


Figure 23: Adding a Boundary in GUPS as a Nonvisible Legal/Statistical Boundary

4. Update the **Prefix**, **Name**, and **Suffix** fields as applicable. The Name field is required for primary and secondary roads. If adequate attribution is not provided, the Census Bureau will not make the correction for this BAS cycle.
5. Select **OK** to complete the transaction. The newly digitized linear feature appears with its corresponding symbology.

3.4.2 Deleting and Restoring Linear Features

To mark a feature for deletion:

1. Select the **Delete/Restore Linear Feature** tool on the **BAS toolbar**.

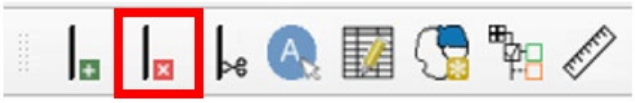


Figure 24: Delete/Restore Linear Feature tool on the BAS toolbar

2. Select the linear feature to mark for deletion. A **Delete/Restore Linear Feature** dialog window will open.

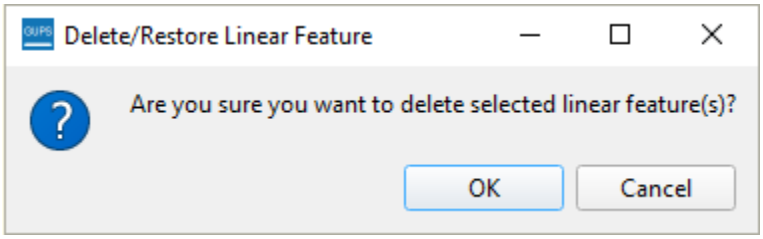


Figure 25: Delete/Restore Linear Feature dialog window

3. Confirm the action by selecting **OK**.
4. The linear feature appears with an "X'd out" symbology (**Figure 26**) to show it has been marked for deletion.

Figure 26: Symbology of a Linear Feature Marked for Deletion

To restore a linear feature marked for deletion:

1. Select the **Delete/Restore Linear Feature** tool on the **BAS toolbar**.
2. Select the linear feature to restore. A **Delete/Restore Linear Feature** dialog window will open.
3. Confirm the action by selecting **OK**.
4. The "X'd" out symbology will be removed from the linear feature.

3.4.3 Modifying Linear Feature Attributes

1. Select the **Modify Linear Feature Attributes** tool on the **BAS toolbar**.

Figure 27: Modify Linear Feature Attributes tool on the BAS toolbar

2. Select the linear feature to modify. A **Modify Linear Feature Attributes** dialog window will open (**Figure 28**).
3. Update the **MTFCC**, **FULLNAME**, and address range fields (if applicable for the feature) in the dialog window.
4. Confirm the action by selecting **Save**.

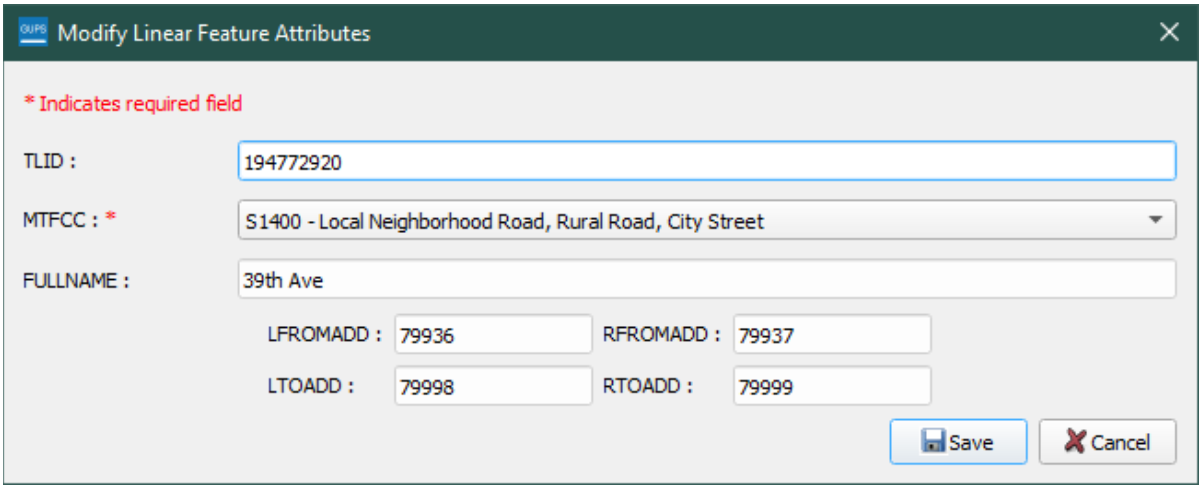


Figure 28: Modify Linear Feature Attributes dialog window

3.5 New Incorporations and Disincorporations

Users can add a new government and disincorporate an existing government using the Add Entity and Remove Entity tools found in the Modify Area Feature toolbar. Those two tools are available for the following geographies:

- New reservation and off-reservation trust lands.
- Tribal Subdivisions.
- Incorporated Places.
- MCDs.
- CDPs.

Tribal BAS does not have Remove Entity functionality for certain geography. Tribal participants wanting to completely remove reservation or trust land should **Contact Us**.

3.5.1 New Incorporations

To add a new government in GUPS:

1. Open the county to add a new government in the Map View.
2. Select the **Modify Area Feature** tool (**Figure 15**) on the **BAS toolbar**.
3. The **Modify Area Feature** dialog window opens.
4. Select the dropdown arrow next to the **Geography** field and select the government type to add from the dropdown menu. For this example, a newly incorporated city is added so select **Place**. The place appears in the **Geography** field and a list of all incorporated places in the county appears in the **Info** list (**Figure 16**).
5. Zoom to the location where the new government is located. To select the faces for the government, left-click once on the **Select Features** tool, the yellow square and cursor icon, in the **Modify Area Feature** toolbar.
6. Choose a spot on the map to select the face or faces.
   a. If the government includes only a single face, simply left-click once on the face to select it. If the government includes several contiguous faces, after selecting the first face, press the

CTRL key and while holding it down, left-click on each additional face to be added. The selected faces turn cyan.

b. Because all geographic areas consist of faces, users may need to split a face to accurately reflect a government's boundary. To split a face, digitize a new line that represents the boundary's location (see section **3.4** for instructions to add a linear feature) and assign it the appropriate MTFCC. This splits the original face into two faces. Now select the face to add to the new entity.

7. To record the new entity, select the **Add Entity** tool (**Figure 30**) in the **Modify Area Feature** toolbar.

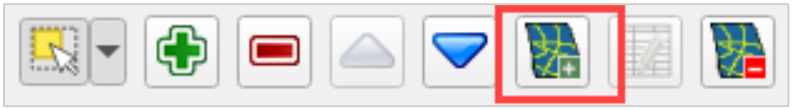


Figure 29: Add Entity tool in the Modify Area Feature toolbar

8. The **Modify Area Feature** dialog window opens (**Figure 30**).

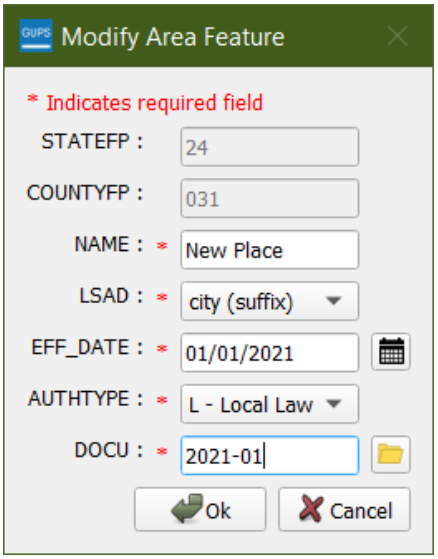


Figure 30: Modify Area Feature dialog window for a New Incorporation

9. In the dialog window, complete the following fields:
   a. **NAME**: Type the new legal government name in the Name field.
   b. **LSAD**: The Legal/Statistical Area Description. Review the BAS Technical Guide at: <www.census.gov/programs-surveys/bas/information/respondent-guides.html> for more information.
   c. **EFF_DATE**: Add the effective date for the legal change using the calendar icon next to the EFF_DATE field or enter the date in MM/DD/YYYY format.
   d. **AUTHTYPE**: Add the authorization type using the dropdown menu.
   e. **DOCU**: Upload documentation for the new incorporation. To upload documentation, select the folder icon next to the DOCU field.

Select **OK**. The faces for the new entity turn purple on the map (colors may vary) and the name of the new entity appears in the list of incorporated places in the **Modify Area Feature** window.

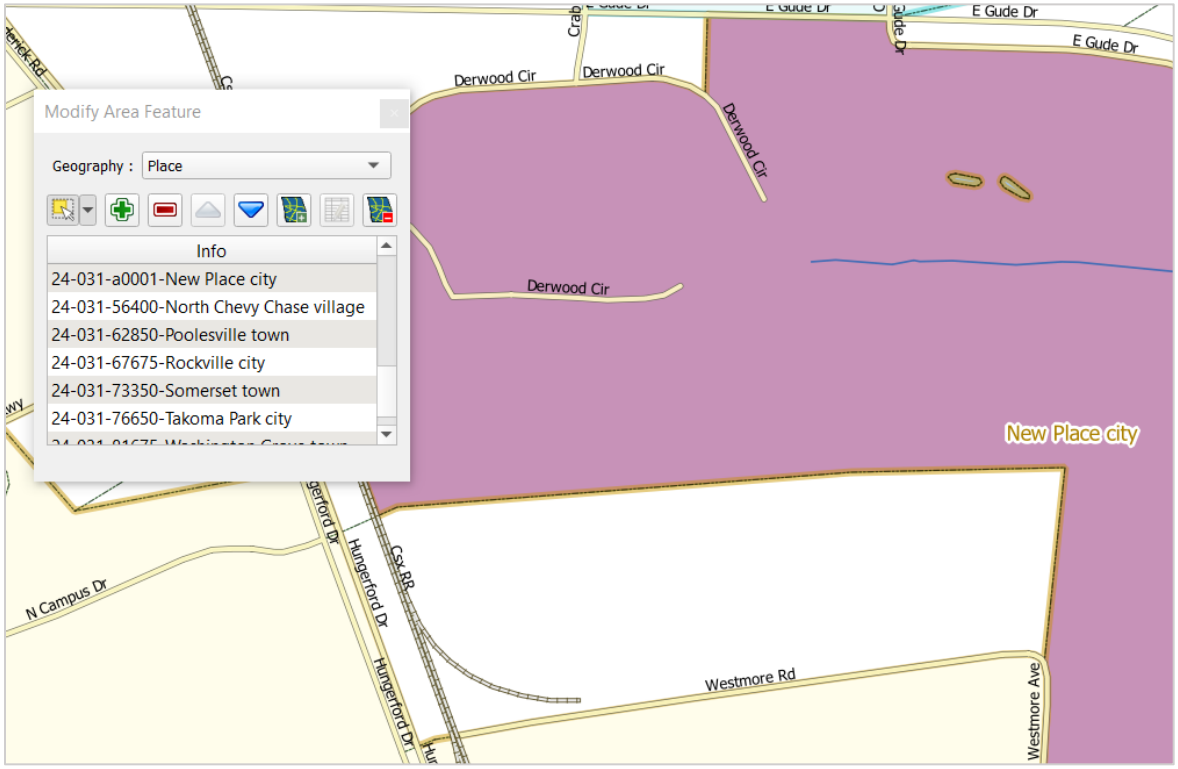


Figure 31: Example of Symbology for a New Incorporation with a Placeholder code

Once the Census Bureau verifies the new government, an official Federal Information Processing Series (FIPS) code will be assigned. The code preceding the new government name in the list is not a FIPS code and should not be used for any official purpose. It is only a placeholder until the official FIPS code can be assigned. To make additional changes to the map, simply make a new selection in the Geography field of the Modify Area Feature dialog window and continue work. Save the project frequently.

Note: If the new government crosses a county boundary, it must be added in both counties separately. After making the change in the working county, return to Map Management, select the other county as the working county, and proceed to add the new government in this county as well. If the added government crosses more than one county boundary, complete the addition in each county affected.

3.5.2 Disincorporations

The **Delete Area** feature is available for the following geographies:

- Incorporated Places.
- CDPs.
- Area Landmarks.

To mark a government for disincorporation or deletion:

1. From the **Map View**, open the county that contains the government to delete. Be sure that all layers needed are checked in the **Layers Panel**.
2. Select the **Modify Area Feature** tool (**Figure 15**) on the **BAS toolbar**.
3. The **Modify Area Feature** dialog window opens.
4. Select the dropdown arrow next to the **Geography** field and select **Place** in the dropdown menu.
5. Place appears in the **Geography** field and a list of all incorporated places in the county appears in the **Info** list (**Figure 16**).
6. Choose the government in the list to mark for the disincorporation. The map zooms to the selected government.
7. Select the **Delete Area Feature** tool on the toolbar in the **Modify Area Feature** toolbar.

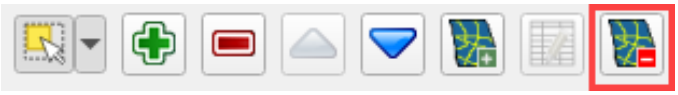


Figure 32: Delete Area Feature tool in the Modify Area Feature toolbar

8. The **Modify Area Feature** dialog window opens. Complete the following fields:
   a. **EFF_DATE**: Add the effective date for the legal change using the calendar icon next to the EFF_DATE field or enter the date in MM/DD/YYYY format.
   b. **AUTHTYPE**: add the authorization type using the dropdown menu.
   c. **DOCU**: Upload documentation for the disincorporation. To upload documentation, select the folder icon next to the DOCU field.

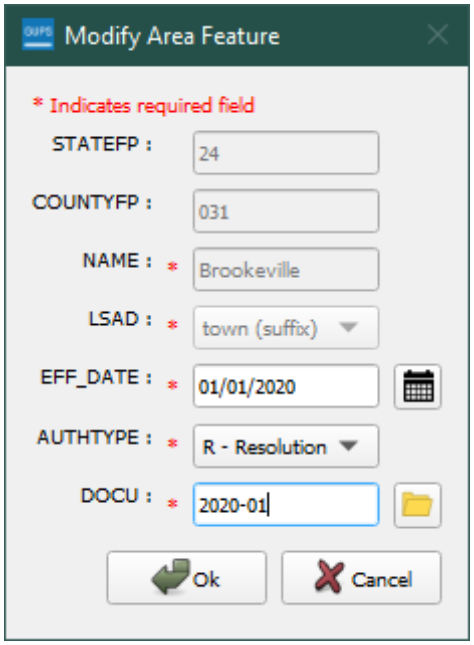


Figure 33: Modify Area Feature dialog window for a Disincorporation

9. A dialog window asks, "**Are you sure you want to delete this area feature?**".

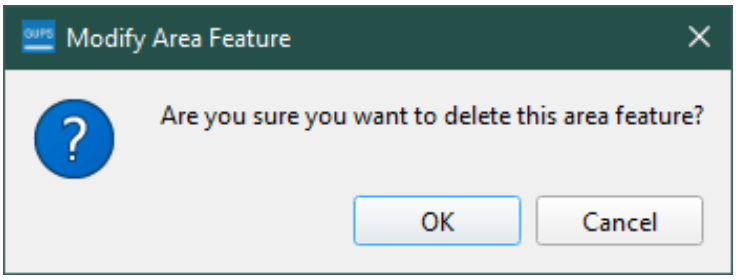


Figure 34: Confirmation window for a Disincorporation

10. Select **OK.** The disincorporated government turns gray on the map (color may vary) and is removed from the list of incorporated places in the county.
11. To make additional changes to the map, simply make a new selection in the **Geography** field of the **Modify Area Feature** tool and continue work.

Note: If the deleted government crosses a county boundary, it must be deleted in both counties separately. After making the change in the working county, return to Map Management, select the other county as the working county, and proceed to delete the government in this county as well. If the deleted government crosses more than one county boundary, complete the deletion in each county affected.

3.6 Census Designated Places (CDPs)

CDPs appear in the map symbolized by estimated population and housing unit criteria. Blue areas meet the minimum criteria, red areas do not meet the minimum criteria, and gray areas show CDPs marked for deletion.

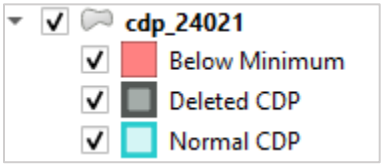


Figure 35: Symbolization of CDPs on the Map

3.6.1 Creating CDP Changes

1. Select the **Modify Area Feature** tool (**Figure 15**)on the **BAS toolbar**.

2. Select the **Geography** type from the dropdown menu as **Census Designated Place (CDP)**.

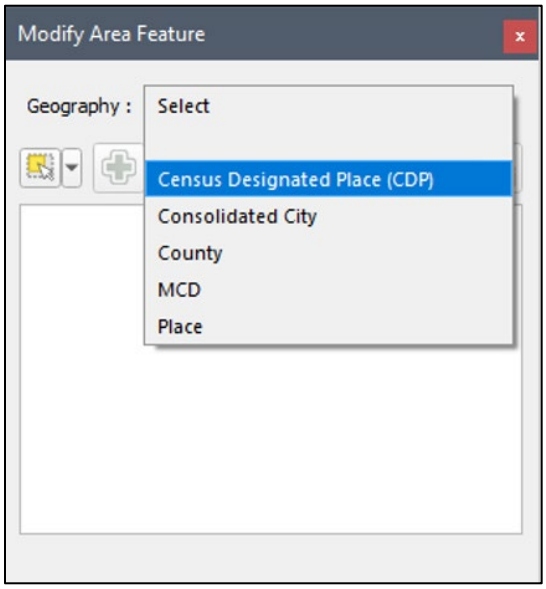


Figure 36: Modify Area Feature tool with Census Designated Place (CDP) selected

3.6.2 Adding Area to a CDP

1. Select the entity to modify in the **Info** list.
2. Select the **Select Features** tool, the yellow square and cursor icon, in the **Modify Area Feature** toolbar to activate the select tool.
3. Select the faces to add.
4. Select the **Add Area** tool to add the faces to the selected entity.

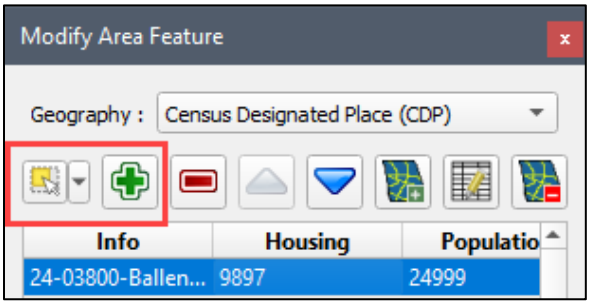


Figure 37: Select Features and Add Area tools in the Modify Area Feature toolbar

3.6.3 Removing Area from a CDP

1. Select the entity to modify in the **Info** list.
2. Select the **Select Features** tool, the yellow square and cursor icon, in the **Modify Area Feature** toolbar to activate the select tool.
3. Select the faces to remove.
4. Select the **Remove Area** tool to add the faces to the selected entity.

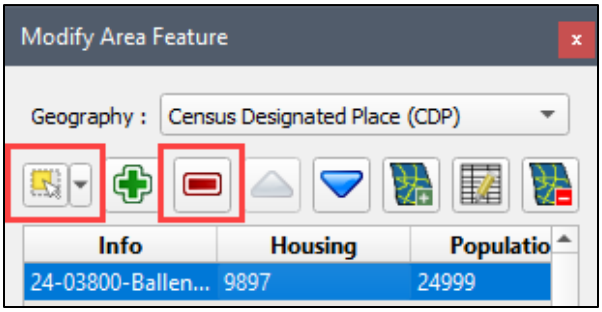


Figure 38: Select Features and Remove Area tools in the Modify Area Feature toolbar

3.6.4 Creating a New CDP

1. Select the **Select Features** tool, the yellow square and cursor icon, in the **Modify Area Feature** toolbar to activate the select tool.
2. Select faces on the map to create the area of the new CDP.
3. Select the **Add Entity** tool in the Modify Area Features window.

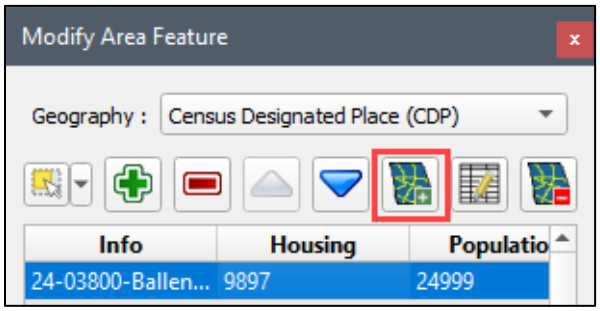


Figure 39: Add Entity tool in the Modify Area Feature toolbar

4. A dialog window opens if the area selected does not meet minimum requirements for a CDP. If this occurs, users can continue to create the CDP by selecting "**Yes**" or cancel the action by selecting "**No**".

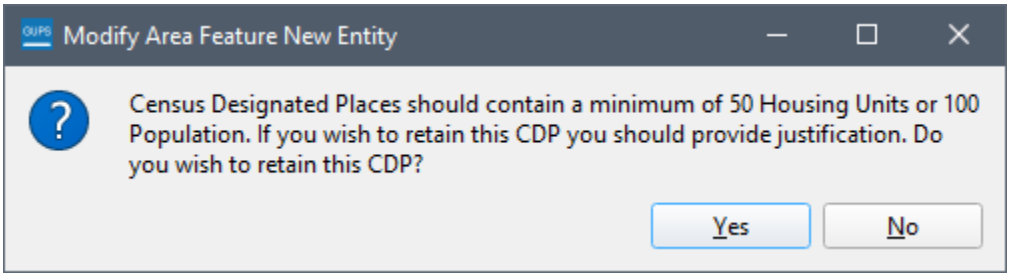


Figure 40: Modify Area Feature New Entity dialog window for a CDP not meeting criteria

5. If the user selects Yes to continue, or does not receive the popup, a new **Modify Area Feature** window opens (**Figure 41**). Complete the following fields:
   a. **NAME**: Name of the CDP.
   b. **LSAD**: The Legal/Statistical Area Description for CDPs will always be CDP.
   c. **JUSTIFY**: Select from the dropdown a justification for a CDP that may not meet minimum population or housing unit criteria.

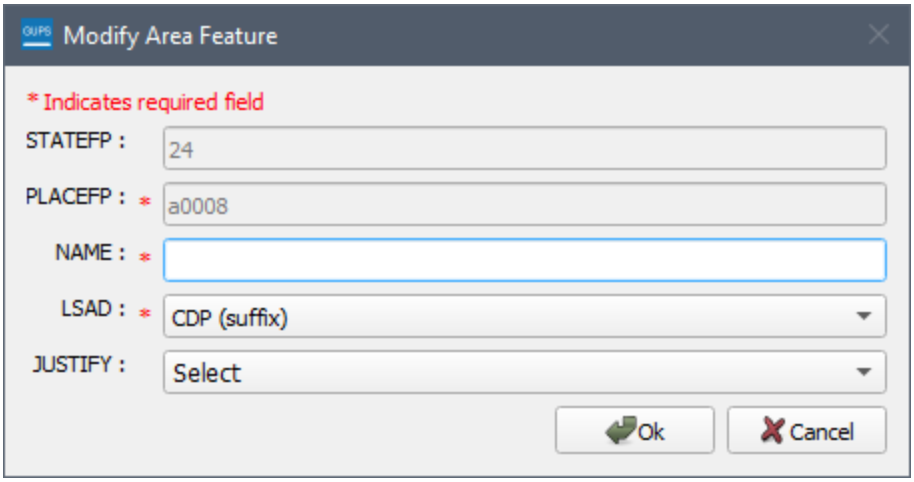


Figure 41: Modify Area Feature window for a new CDP

6. Add or remove faces as needed to create the new CDP. The new CDP appears in the **Info** list in the **Modify Area Feature** window.
7. Save the project.
8. Run the **BAS Criteria Review** tool.

Figure 42: BAS Criteria Review tool on the BAS toolbar

9. The **BAS Criteria Review** window opens if there are any CDPs that may not meet the minimum criteria.

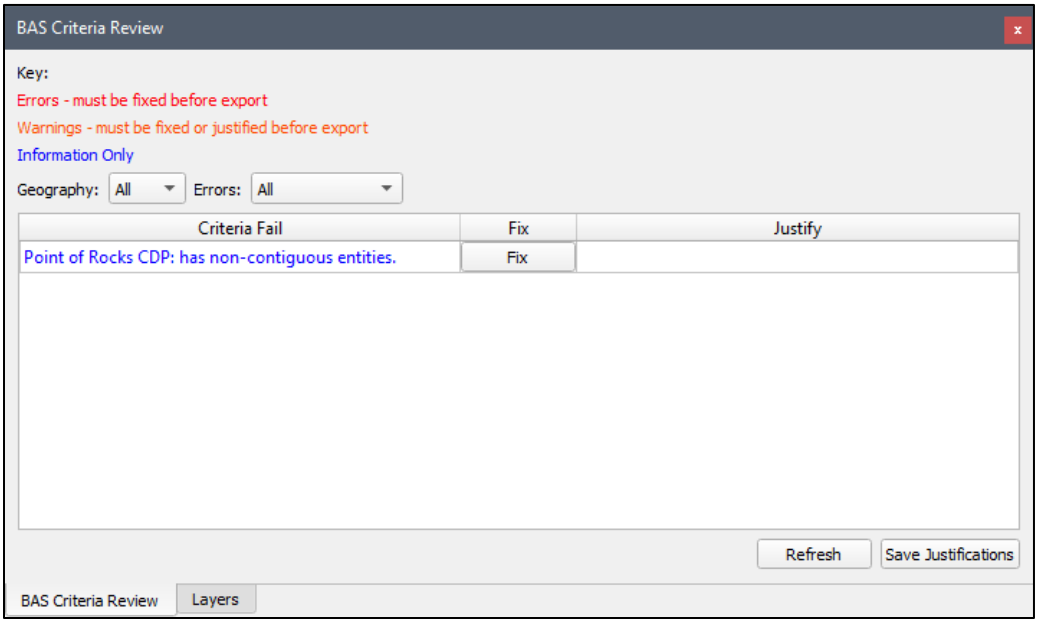


Figure 43: BAS Criteria Review window shows CDPs that may not meet minimum criteria

10. Select **Fix** to address the issue in the map or select a Justification for an exception. Errors that appear in red must be addressed before the export. The errors in orange must be fixed or justified before export and the blue errors are informational only and do not need to be addressed before export.
11. Once the issues have been addressed, or if no issues were found, the BAS Criteria Review tool will open a confirmation window.

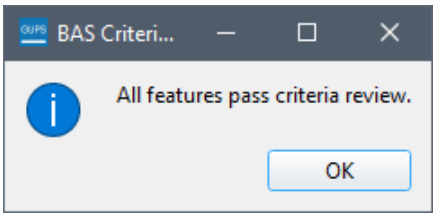


Figure 44: Confirmation window for CDP criteria

3.6.5 Deleting an Existing CDP

1. With the **Modify Area Feature** tool with **Census Designated Place (CDP)** selection open, select the CDP to delete in the **Info** list.
2. Select the **Delete Area Feature** tool.

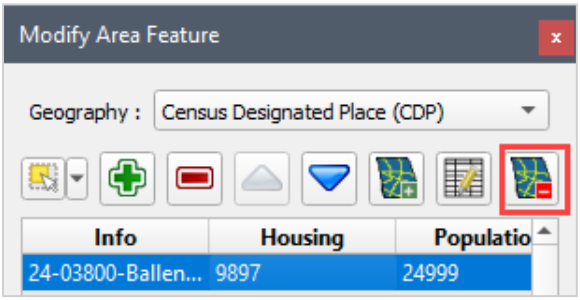


Figure 45: Delete Area Feature tool in the Modify Area Feature toolbar

3. A confirmation window opens. Select **OK** to delete the CDP or **Cancel** to return to the previous menu. Upon deletion the CDP appears in gray on the map.

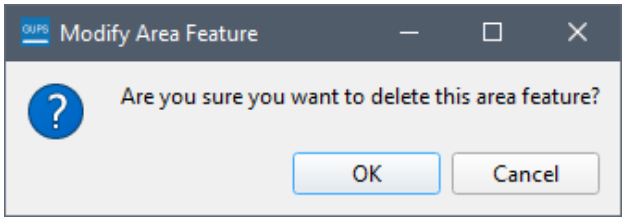


Figure 46: Confirmation window for the Deletion of a CDP

3.7 Quality Checks

GUPS features two built-in quality control checks that must be run before exporting the file, the **Small Area Check** tool, and the **Find Holes** tool. An error message appears if the user attempts to export the file without running these checks.

1. Save the project.
2. Select the Review Change Polygons tool on the BAS toolbar.

Figure 47: Review Change Polygons tool on the BAS toolbar

3. The Review Change Polygon tool opens.
4. From the Review Change Polygons dialog window, select the **Small Area Check** button. The **Display All Changes** button in **Figure 48** is the **Small Area Check** button when the dialog window initially opens.
   a. The tool finds small changes that may not meet the 30-foot minimum guideline.
   b. Choose the results record and zoom to the identified issue. Correct the issue by using the tools on the **BAS toolbar**. Users can either remove, modify, or accept the change.

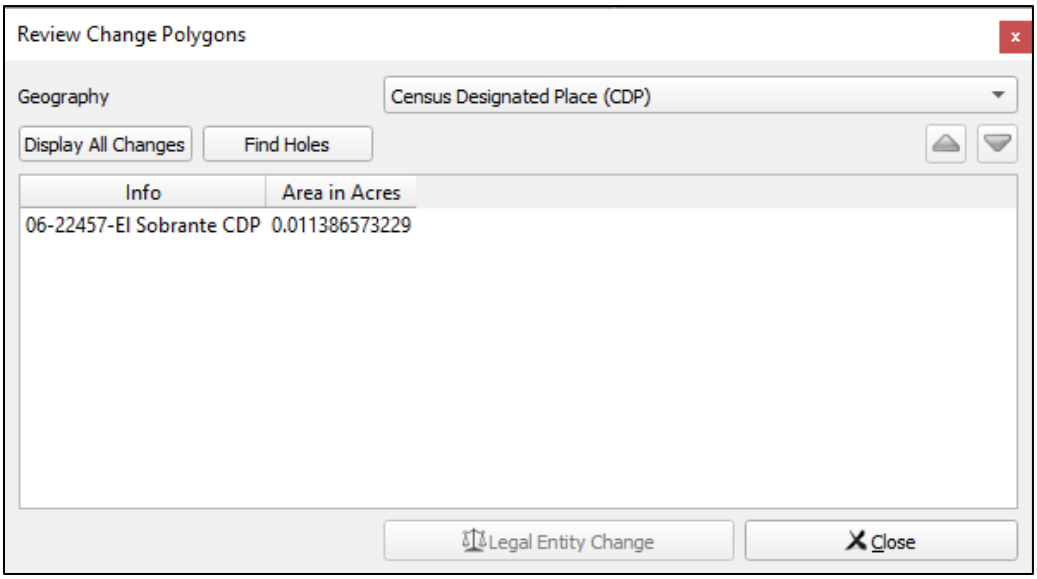


Figure 48: Example of the Small Area Check in the Review Change Polygons tool

5. From the Review Change Polygons dialog window, select the **Find Holes** button.
   a. The tool finds faces that may have been missed when adding or modifying an area feature.
   b. Choose on the results record and zoom to the identified issue. Correct the issue by filling the hole using the **Fix** button.

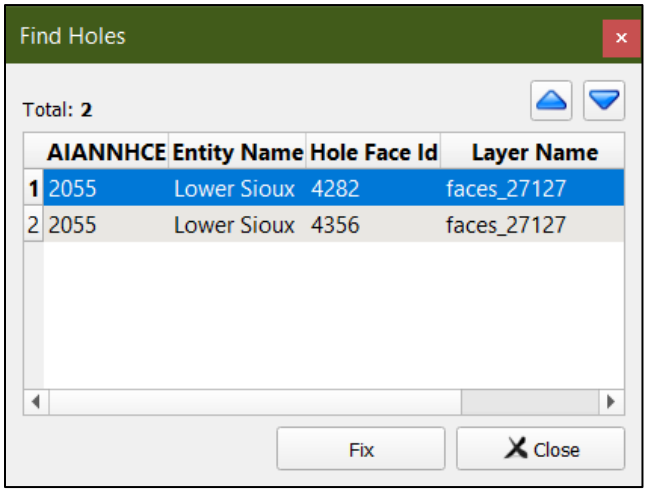


Figure 49: Example of the Find Holes check in the Tribal BAS module

6. If there are no issues found during the quality checks, users are ready to export the files.

3.8 Exporting Changes to Zip

Once the files are created and the review of changes is complete, there are two options to export the changes. The Share with Another Participant option creates a zipped data directory file to share with another user so they can see the project. The Export for Census option creates a zipped return file to submit to the Census Bureau. In either case, GUPS automatically names the output zip file. This tool packages all the files required by the Census Bureau (including any documentation uploaded) into the zip file and saves it in a preset location created on the computer during the installation process.

To create zipped return files:

1. Select the **Export to Zip** icon on the **BAS toolbar**.

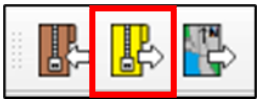


Figure 50: Export to Zip tool on the BAS toolbar

2. A dialog window opens with the last time the **Review Change Polygons** tool ran in the project. If users have not performed the quality checks with the **Review Change Polygons** tool (**Figure 47**) , an error message appears. Select **OK** and run the quality checks, explained in section **3.7**, before exporting the file.
3. From the **Select Output Type** dialog window, select the **Export for Census** radio button to create a file to return to the Census Bureau.

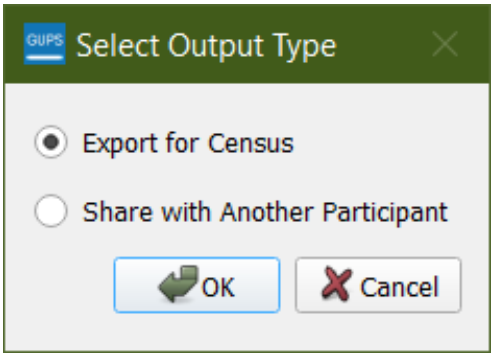


Figure 51: Select Output Type dialog window

4. When using this option, a window will open for the BAS contact information. Complete the **GUPS User Contact Information** form.

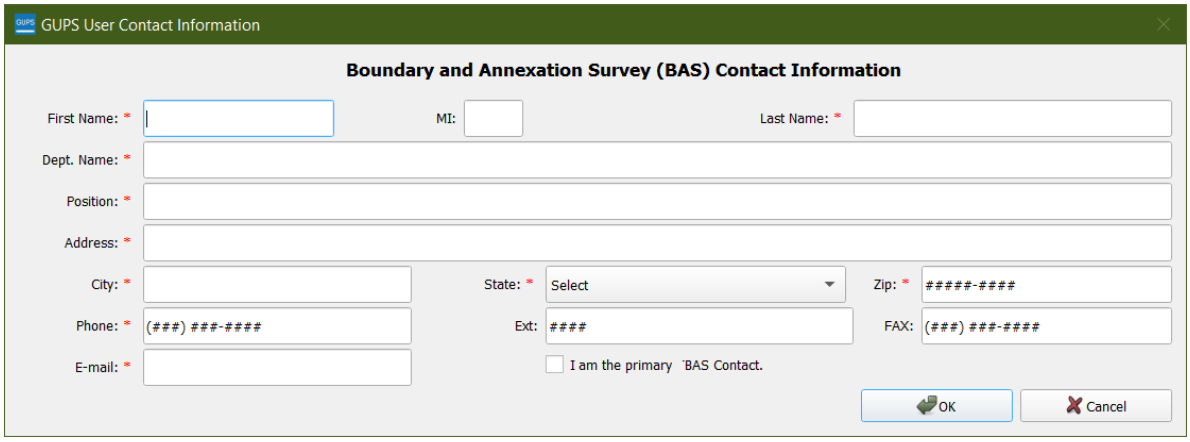


Figure 52: GUPS User Contact Information Form

5. Select **OK**.
6. A window opens showing the location of the output file on the local system. This is the file to return to the Census Bureau through the Secure Web Incoming Module (SWIM) in the next section.

CHAPTER 4 SUBMIT CHANGES TO THE CENSUS BUREAU

All participants must use the Secure Web Incoming Module (SWIM) to submit their changes to the Census Bureau. Due to security requirements, the Census Bureau cannot accept submissions through File Transfer Protocol, email, or any protocol other than the SWIM site.

To upload and transmit update files to the Census Bureau, first access the SWIM user account.

0. Open a web browser window and enter the SWIM URL: <https://respond.census.gov/swim/>. SWIM runs on the two most recent versions of each of these major browsers:
   - Microsoft Edge®
   - Google Chrome®
   - Mozilla Firefox®
   - Apple Safari®
1. Users who already have a SWIM account should proceed to step 4 to log in.
2. Users who do not have a SWIM account should choose "Register Account:"
   a. Enter the 12-digit token provided by the Census Bureau. This token is sent 5 days after responding to the Online Response Form.
   b. Create a password following the criteria below:
      i. Username and password are case sensitive.
      ii. It must be at least eight characters in length.
      iii. It must have at least one upper case character.
      iv. It must have at least one lower case character.
      v. It must have at least one number.
      vi. It must have at least one special character (valid characters are: #, !, $, &, ?, ~).
   c. Complete the registration information form.
3. Log in to SWIM using the user's email address and password.
4. Upload a BAS submission:
   a. Select the "Start New Upload" button.
   b. Select the "BAS" radio button.
   c. Select the "Entity" type (State, Place, County, MCD, Tribal Area, or Consolidated City).
   d. Select the State and County.
   e. Select the "+ Add File" button.
   f. Select the .zip file to upload.
   g. Double-click on the .zip file to upload. Add additional .zip files in the same manner.
   h. Add any additional information to the "Comments" field.
5. Choose "Next". A "Thank You" screen appears.
6. Logout of SWIM.

4.1 Troubleshooting SWIM

For those having trouble accessing their SWIM account, here are some tips:

- SWIM email addresses and passwords are case-sensitive.

- Users who have forgotten their password may reset it by using the “Forgot your password?” link on the login page. Follow the prompts to enter the case-sensitive email address and provide the security answer. If the security answer is correct, SWIM sends a password reset link to the email account to use to reset the password. Once logged into SWIM, users can modify their password and security answer by selecting the “Change Security” link at the top, right-hand side of the page.

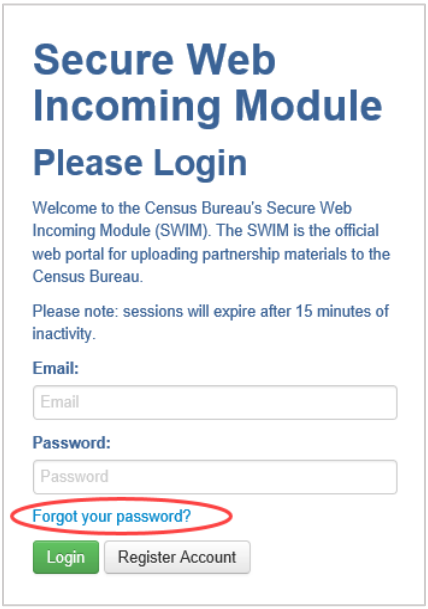


Figure 53: SWIM Login Screen and Password Reset Link

- Users that cannot recover their password through the “Forgot your Password?” link should email <geo.bas@census.gov> with the subject line “SWIM Account Assistance” with a brief description of the issue.
- SWIM accounts are specific to the user, not to the government so do not share a SWIM account between multiple users. Governments may always request another account for a new BAS contact.
- If a user has an existing SWIM account through another geographic partnership program such as the Local Update of Census Addresses (LUCA) operation or the Participant Statistical Areas Program (PSAP), they may use the same account for BAS. There is no need to create another account.

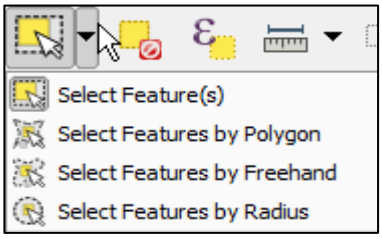
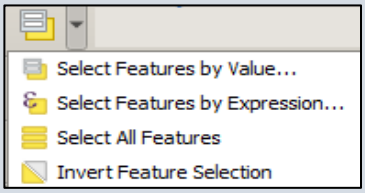
APPENDICES

APPENDIX A GUPS MAPPING TOOLS

A1 Standard Toolbar

Table 2: Standard Toolbar Tool Names and Descriptions

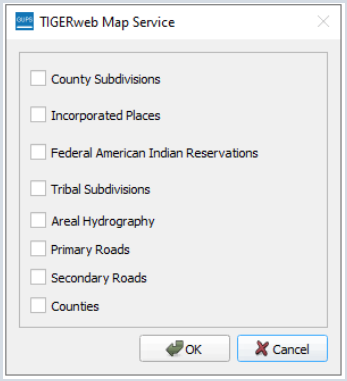
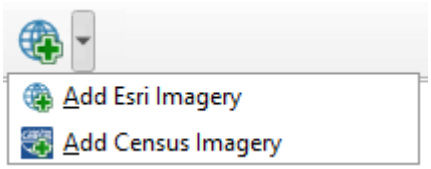
Tool	Name	Description
	Save	Saves the current GUPS project, including any user changes to layer properties, projection, last viewed extent, and layers added.
	Style Manager	Allows customization of map symbology.
	Map Management	Chooses a geographic participant program in GUPS and access the automatically loaded default map display layers based on the program chosen.
	GUPS Data Settings	**Warning! This tool deletes files and folders permanently!** Change GUPSGIS data working directory and clean GUPS project data.
	Search	Searches the map by place, landmark, or street name and zoom automatically to the feature.
	Pan Map	Shifts the map in Map View without changing the map scale. Select the button, then select a location on the map to re-center the map to the selected 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), select 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. Select the button, then select on the map at the location to be zoomed to.
	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, select the button to view the feature(s) at a larger map scale.
	Zoom to Layer	Zooms the Map View to the layer selected in the Layers Panel. After selecting the layer, select the button to zoom to the layer's extent.
	Zoom Last	Zooms the Map View to the previous map extent.

Tool	Name	Description
	Zoom Next	Zooms the Map View forward to the next map extent (only if a previous extent is available).
	New Bookmark	Creates and names a spatial bookmark of the current map view.
	Show Bookmarks	Displays all bookmarks created by the user.
	Refresh	Displays Map View to initial full display.
	Identify Features	Identifies geographic features. Select the button, then select on a feature on the map to identify the feature at the location.
	Select Features by Area or Single Click	Allows the user to select layer features in the map window with a single-click of the mouse, by dragging the cursor, or by drawing graphics on the screen. 
	Select Features by Value	Allows selection of features by value or expression. 
	Deselect Features from All Layers	Deselects selected features from all layers.
	Processing Toolbox	Displays list of processing tools available.
	Measure	Provides options to measure linear distance, area, and angles on the map.

A2 BAS Toolbar

Table 3: BAS Toolbar Tool Names and Descriptions

Tool	Name	Description
	Add Linear Feature	Add a new linear feature.
	Delete/Restore Linear Feature	Delete an existing linear feature.
	Split Linear Feature	Split a linear feature. One may need to split a linear feature to accurately reflect an entity's location. This feature "splits" the original into two.
	Display All Names	Displays all names for a street with multiple names assigned in the Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) System.
	Modify Linear Feature Attributes	Edit attributes of a selected linear feature.
	Modify Area Feature	Make updates to legal area (annexations, deannexations, boundary corrections, etc.).
	Show/Hide Legend	Shows or hides the Layers tab.
	Geography Review Tool	Review the attribute table for a layer.
	Review Change Polygons	Review change polygons in a layer and make corrections (reviews change polygons for holes and minimum size).
	Import County Zip	Import zipped GUPS project shared by another GUPS user.
	Export to Zip	Create the ZIP file containing all required data and shapefiles to be submitted to the Census Bureau or to share with another GUPS user.
	Print Map to File	Export a printable map in *.pdf, *.png, *.tif, or *.jpeg format.
	Internet Map Service	Displays the chosen map location in an internet mapping service, such as Google or Bing Maps.

Tool	Name	Description
	TIGERweb Map Service	Displays the chosen map layers using the TIGERweb mapping service. 
	Add Esri Imagery	Displays satellite imagery overlaid on the QGIS map. 

A3 Add Data Toolbar

Table 4: Add Data Toolbar Tool Names and Descriptions

Tool	Name	Description
	Add Vector Layer	Add vector-based shapefile and geodatabase files.
	Add Raster Layer	Add raster-based shapefile and geodatabase files.
	Add Mesh Dataset	Add Mesh Dataset.
	Add SpatialLite Layer	Add data from a SpatialLite database.
	Add/Edit Virtual Layer	Add or Edit Virtual Layers.
	Add PostGIS Layer	Add PostGIS layer.
	Add WMS/WMTS Layer	Add Web Mapping Services (WMS) and Web Mapping Tile Services (WMTS). Publicly accessible and secured WMS services are supported.

Tool	Name	Description
	Add WCS Layer	Add Web Coverage Services (WCS), which provide access to raster data useful for client-side map rendering.
	Add WFS Layer	Add Web Feature Services (WFS).
	New Shapefile Layer	Add a new shapefile layer or new temporary scratch layer.