

# Voting District Project GUPS User's Guide

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*Instructions for Using the  
Geographic Update Partnership Software (GUPS)*



U.S. Department of Commerce  
Economic and Statistics Administration  
U.S. CENSUS BUREAU  
***census.gov***

Voting District Project GUPS User's Guide

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# Table of Contents

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|   |             |
|---|-------------|
| <b>Tables .....</b>   | <b>vi</b>   |
| <b>Figures.....</b>   | <b>viii</b> |
| <b>Paperwork Reduction Act Statement .....</b>                            | <b>ix</b>   |
| <b>Section 1. Introduction .....</b>                                      | <b>1</b>    |
| 1.1 Background .....  | 1           |
| 1.2 Purpose .....   | 1           |
| 1.3 Document Structure.....   | 1           |
| <b>Part 1. VTDP Overview.....</b>   | <b>3</b>    |
| <b>Section 2. Suggested Workflow .....</b>                                | <b>3</b>    |
| 2.1. Voting District Boundary Updates.....                                | 4           |
| 2.2. Linear Feature Review.....   | 4           |
| 2.3. Area Landmark and Area Hydrography Review .....                      | 5           |
| 2.4. Legal Boundary Review and Update .....                               | 5           |
| 2.5. Congressional and State Legislative District Review .....            | 6           |
| 2.6. VTD Criteria Review .....  | 6           |
| 2.7. Review Change Polygons.....  | 6           |
| 2.8. Work Delegated? .....  | 6           |
| <b>Section 3. New Tools in GUPS .....</b>                                 | <b>8</b>    |
| 3.1 Split Linear Feature .....  | 8           |
| 3.2 Switch to BBSP Style.....   | 8           |
| 3.3 Export Tabular Equivalency File .....                                 | 8           |
| 3.4 GUPS Data Settings.....   | 8           |
| 3.5 Updating Congressional and State Legislative Districts.....           | 9           |
| 3.6 Ability to replace VTD current layer at any time.....                 | 9           |
| 3.7 Ability to Lock/Unlock multiple VTDs at one time.....                 | 9           |
| 3.8 New QGIS Platform.....  | 9           |
| 3.9 Opening Google Map or BING Imagery.....                               | 10          |
| <b>Section 4. File Submission through Secure Web Incoming Module.....</b> | <b>11</b>   |

|                   |  |           |
|-------------------|--|-----------|
| <b>Part 2.</b>    | <b>Participating in VTDP Using GUPS</b>                    | <b>12</b> |
| <b>Section 5.</b> | <b>Getting Started</b>                                     | <b>12</b> |
| 5.1               | GUPS Hardware and System Requirements                      | 13        |
| 5.2               | Installing GUPS and Census Bureau Spatial Data             | 14        |
| 5.3               | Downloading Partnership Shapefiles                         | 18        |
| <b>Section 6.</b> | <b>GUPS Basics and Map Management</b>                      | <b>22</b> |
| 6.1               | Starting GUPS  | 22        |
| 6.2               | VTD Page Layout  | 29        |
| <b>Section 7.</b> | <b>Starting a VTD Project</b>                              | <b>49</b> |
| 7.1               | Create New Blank VTD Layer                                 | 51        |
| 7.2               | Import Tabular Equivalency File                            | 52        |
| 7.3               | Import VTD Shapefile                                       | 55        |
| <b>Section 8.</b> | <b>VTD Update Activities in GUPS</b>                       | <b>58</b> |
| 8.1               | Using the Modify Area Feature Tool to Update Area Features | 58        |
| 8.2               | Updating VTDs  | 63        |
| 8.2.1             | Adding Area to Existing VTDs                               | 63        |
| 8.2.2             | Locking VTDs   | 65        |
| 8.2.3             | Creating New VTDs  | 68        |
| 8.2.4             | Modifying VTD Attributes                                   | 71        |
| 8.2.5             | Deleting VTDs  | 74        |
| 8.3               | Updating Linear Features                                   | 76        |
| 8.3.1             | Adding a Linear Feature                                    | 76        |
| 8.3.2             | Splitting a Linear Feature                                 | 78        |
| 8.3.3             | Deleting a Linear Feature                                  | 82        |
| 8.3.4             | Restoring Deleted Linear Features                          | 84        |
| 8.3.5             | Editing Linear Feature Attributes                          | 85        |
| 8.4               | Reviewing and Updating Area Landmarks                      | 88        |
| 8.5               | Legal Boundary Updates                                     | 100       |
| 8.6               | Congressional and State Legislative District Updates       | 108       |
| 8.7               | VTD Criteria Check and Change Polygon Review               | 109       |
| 8.8               | Managing Data Files and Sharing Projects and Work          | 125       |

|                   |  |            |
|-------------------|--|------------|
| <b>Section 9.</b> | <b>File Submission through SWIM.....</b> | <b>142</b> |
| 9.1               | Login Page .....                         | 142        |
| 9.2               | Welcome Page .....                       | 143        |
| 9.3               | Geographic Program Page .....            | 144        |
| 9.4               | Select a State .....                     | 145        |
| 9.5               | Select a Zip File to Upload.....         | 145        |
| 9.6               | Thank You Page.....                      | 146        |
| <b>Appendices</b> | <b>.....</b>                             | <b>147</b> |
| <b>APPENDIX A</b> | <b>Updates Allowed by MTFCC.....</b>     | <b>A-1</b> |
| <b>APPENDIX B</b> | <b>Street Type Abbreviations.....</b>    | <b>B-1</b> |
| <b>APPENDIX C</b> | <b>MTFCC Descriptions .....</b>          | <b>C-1</b> |
| <b>APPENDIX D</b> | <b>Shapefile Data Dictionary .....</b>   | <b>D-1</b> |
| <b>APPENDIX E</b> | <b>Acronyms.....</b>                     | <b>E-1</b> |
| <b>APPENDIX F</b> | <b>VTD Participation Support.....</b>    | <b>F-1</b> |
| <b>APPENDIX G</b> | <b>Switch to BBSP Style Button .....</b> | <b>G-1</b> |

# Tables

---

|  |     |
|--|-----|
| TABLE 1: GUPS HARDWARE AND SOFTWARE REQUIREMENTS .....                                 | 13  |
| TABLE 2: HOW TO INSTALL THE GUPS APPLICATION .....                                     | 15  |
| TABLE 3: DOWNLOAD PARTNERSHIP SHAPEFILES FROM FTP SITE.....                            | 19  |
| TABLE 4: DOWNLOAD BLOCK SIZE SHAPEFILES FROM FTP SITE.....                             | 21  |
| TABLE 5: OPEN GUPS AND START A NEW PROJECT.....  | 22  |
| TABLE 6: HOW TO START A GUPS PROJECT .....   | 24  |
| TABLE 7: OPENING AN EXISTING PROJECT IN GUPS.....                                      | 26  |
| TABLE 8: IMPORTING A GUPS PROJECT SOMEONE IS SHARING WITH YOU FOR REVIEW IN GUPS ..... | 27  |
| TABLE 9: GUPSMENU BAR .....  | 30  |
| TABLE 10: STANDARDTOOLBAR GROUPING.....  | 33  |
| TABLE 11: VTD TOOLBAR BUTTONS, NAMES, AND FUNCTIONS .....                              | 36  |
| TABLE 12: ADD DATA TOOLBAR BUTTONS, NAMES, AND FUNCTIONS.....                          | 38  |
| TABLE 13: ADDING A SHAPEFILE (VECTOR DATA) .....                                       | 39  |
| TABLE 14: ADDING A WEB MAPPING SERVICE .....   | 41  |
| TABLE 15: TABLE OF CONTENTS TOOLBAR BUTTONS, NAMES, AND FUNCTIONS .....                | 44  |
| TABLE 16: ORGANIZE LAYERS IN THE TABLE OF CONTENTS.....                                | 45  |
| TABLE 17: STATUS BAR ELEMENT AND FUNCTION/DESCRIPTION .....                            | 48  |
| TABLE 18. THREE TYPES OF TABULAR EQUIVALENCY FILES .....                               | 50  |
| TABLE 19: CREATE NEW BLANK VTD LAYER .....   | 51  |
| TABLE 20: IMPORT TABULAR EQUIVALENCY FILE.....   | 52  |
| TABLE 21: IMPORT VTD SHAPEFILE .....   | 55  |
| TABLE 22: MODIFY AREA FEATURE TOOL BUTTONS AND FUNCTIONS .....                         | 58  |
| TABLE 23: USING THE MODIFY AREA FEATURE TOOL TO UPDATE AREA FEATURES .....             | 59  |
| TABLE 24: ADDING TO EXISTING VTDS.....   | 63  |
| TABLE 25: ADDING TO A VTD WHILE LOCKING SURROUNDING VTDS .....                         | 65  |
| TABLE 26: CREATING NEW VTDS .....  | 68  |
| TABLE 27: MODIFYING VTD ATTRIBUTES.....  | 72  |
| TABLE 28: DELETING A VTD .....   | 74  |
| TABLE 29: ADDING A LINEAR FEATURE .....  | 76  |
| TABLE 30: SPLIT/EDIT A LINEAR FEATURE .....  | 79  |
| TABLE 31: DELETE A LINEAR FEATURE.....   | 83  |
| TABLE 32: RESTORE A LINEAR FEATURE .....   | 84  |
| TABLE 33: EDIT A LINEAR FEATURE ATTRIBUTION .....                                      | 85  |
| TABLE 34: REVIEW AREA LANDMARKS.....   | 89  |
| TABLE 35: ADD AREA TO AN AREA LANDMARK .....   | 90  |
| TABLE 36: REMOVE AREA FROM AREA LANDMARK/AREA HYDROGRAPHY .....                        | 92  |
| TABLE 37: CREATE A NEW AREA LANDMARK.....  | 94  |
| TABLE 38: MODIFYING AREA LANDMARK.....   | 97  |
| TABLE 39: DELETING AREA LANDMARKS .....  | 99  |
| TABLE 40: BOUNDARY CHANGES .....   | 101 |
| TABLE 41: SUBMIT LEGAL CHANGES .....   | 102 |
| TABLE 42: SUBMIT A BOUNDARY CORRECTION .....   | 104 |
| TABLE 43: ADD A NEW LEGAL ENTITY.....  | 105 |
| TABLE 44: DELETE A NEW LEGAL ENTITY.....   | 107 |
| TABLE 45: VTD CRITERIA REVIEW TOOL ERROR AND WARNING MESSAGES.....                     | 109 |
| TABLE 46: THE VTD CRITERIA REVIEW TOOL.....  | 110 |
| TABLE 47: UNASSIGNED FACES .....   | 111 |
| TABLE 48: ADDRESSING NON-CONTIGUOUS VTDS .....   | 114 |
| TABLE 49: REVIEW CHANGE POLYGONS .....   | 120 |

|  |      |
|--|------|
| TABLE 50: CONDUCTING THE SMALL AREA CHECK.....   | 121  |
| TABLE 51: CONDUCTING THE FIND HOLES CHECK .....  | 123  |
| TABLE 52: CHANGING YOUR GUPS WORKING DIRECTORY .....   | 125  |
| TABLE 53: CLEANING GUPS DATA BY PROJECT (DELETING ALL GUPS DATA ASSOCIATED WITH A PROJECT) ..... | 129  |
| TABLE 54: CLEANING GUPS DATA BY PROGRAM .....  | 131  |
| TABLE 55: CLEANING ALL GUPS DATA .....   | 133  |
| TABLE 56: OPENING GUPS WITH THE EXPLORER BUTTON.....   | 135  |
| TABLE 57: TEFVERSION AND EXAMPLE FORMATS.....  | 137  |
| TABLE 58: EXPORT TO TABULAR EQUIVALENCY FILE .....   | 137  |
| TABLE 59: EXPORTING A ZIP FILE TO SHARE WITH ANOTHER PARTICIPANT.....                            | 138  |
| TABLE 60: CREATING VTD SUBMISSION FOR THE CENSUS BUREAU.....                                     | 139  |
| TABLE 61: AREA LANDMARK UPDATES PERMITTED.....   | A-1  |
| TABLE 62: LINEAR FEATURE UPDATES PERMITTED .....   | A-2  |
| TABLE 63: STREET TYPE ABBREVIATIONS.....   | B-1  |
| TABLE 64: COMPLETE LIST OF MTFCC DESCRIPTIONS.....   | C-1  |
| TABLE 65: SHAPEFILE LAYER NAMES/TABLES.....  | D-1  |
| TABLE 66: AMERICAN INDIAN AREAS - LEGAL .....  | D-2  |
| TABLE 67: AMERICAN INDIAN /ALASKA NATIVE AREAS - STATISTICAL.....                                | D-3  |
| TABLE 68: AMERICAN INDIAN TRIBAL SUBDIVISIONS - LEGAL .....                                      | D-4  |
| TABLE 69: AMERICAN INDIAN TRIBAL SUBDIVISIONS - STATISTICAL .....                                | D-5  |
| TABLE 70: ALASKA NATIVE REGIONAL CORPORATIONS .....  | D-5  |
| TABLE 71: BLOCK SIZE INDICATOR .....   | D-6  |
| TABLE 72: CONGRESSIONAL DISTRICTS .....  | D-7  |
| TABLE 73: HAWAIIAN HOMELANDS .....   | D-8  |
| TABLE 74: SCHOOL DISTRICTS.....  | D-9  |
| TABLE 75: STATE LEGISLATIVE DISTRICTS (UPPER/SENATE) .....                                       | D-9  |
| TABLE 76: STATE LEGISLATIVE DISTRICTS (LOWER/HOUSE) .....  | D-10 |
| TABLE 77: URBAN GROWTH AREAS .....   | D-11 |
| TABLE 78: CENSUS BLOCK GROUPS .....  | D-12 |
| TABLE 79: CENSUS BLOCKS - CURRENT.....   | D-12 |
| TABLE 80: CENSUS BLOCKS - CENSUS 2010 .....  | D-12 |
| TABLE 81: CENSUS TRACTS .....  | D-13 |
| TABLE 82: CENSUS DESIGNATED PLACES.....  | D-13 |
| TABLE 83: CONSOLIDATED CITY .....  | D-14 |
| TABLE 84: COUNTY AND EQUIVALENT AREAS.....   | D-15 |
| TABLE 85: COUNTY SUBDIVISIONS - LEGAL (MCD) .....  | D-15 |
| TABLE 86: COUNTY SUBDIVISIONS - STATISTICAL (CCD) .....  | D-16 |
| TABLE 87: INCORPORATED PLACE.....  | D-16 |
| TABLE 88: STATES AND EQUIVALENT AREAS .....  | D-17 |
| TABLE 89: SUBARRIOS.....   | D-17 |
| TABLE 90: EDGES (ALL LINES).....   | D-18 |
| TABLE 91: AREA LANDMARK .....  | D-19 |
| TABLE 92: HYDROGRAPHY AREA .....   | D-19 |
| TABLE 93: POINT LANDMARKS.....   | D-20 |
| TABLE 94: TOPOLOGICAL FACES - GEOGRAPHIC ENTITY RELATIONSHIPS.....                               | D-20 |
| TABLE 95: TOPOLOGICAL FACES - AREA LANDMARK RELATIONSHIPS .....                                  | D-21 |
| TABLE 96: TOPOLOGICAL FACES - HYDROGRAPHY AREA RELATIONSHIPS .....                               | D-22 |
| TABLE 97: ADDRESS RANGES.....  | D-22 |
| TABLE 98: LINEAR FEATURE NAMES.....  | D-22 |
| TABLE 99: VOTING DISTRICTS.....  | D-23 |
| TABLE 100: ACRONYMS .....  | E-1  |
| TABLE 101: SWITCH TO BBSP STYLE .....  | G-1  |

# Figures

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|   |     |
|---|-----|
| FIGURE 1. GUPSPAGE LAYOUT.....  | 28  |
| FIGURE 2. GUPSMENU AND TOOLBARS .....                                   | 28  |
| FIGURE 3. GUPS TOOLBARS .....   | 31  |
| FIGURE 4. STANDARD TOOLBAR .....  | 31  |
| FIGURE 5. TOOLBAR GROUPINGS .....                                       | 32  |
| FIGURE 6. MAPVIEW BOOKMARK .....  | 34  |
| FIGURE 7. VTD TOOLBAR.....  | 34  |
| FIGURE 8. GUPS TABLE OF CONTENTS.....                                   | 41  |
| FIGURE 9. GUPS TABLE OF CONTENTS, EXPANDED EDGES LAYER MENU .....       | 42  |
| FIGURE 10. TABLE OF CONTENTS TOOLBAR.....                               | 42  |
| FIGURE 11. ADDPRESET LAYER.....   | 44  |
| FIGURE 12. VISIBILITY PRESETS POP-UP SCREEN .....                       | 45  |
| FIGURE 13. STATUS BAR.....  | 45  |
| FIGURE 14. FACES SELECTED FOR ADDITION TO 09375 VOTING DISTRICT.....    | 67  |
| FIGURE 15. FACES NOT LOCKED ADDED TO 09365 VOTING DISTRICT .....        | 68  |
| FIGURE 16. LOCKEDVTD WARNING .....                                      | 68  |
| FIGURE 17. LINEARFEATURE TO SPLIT/EDIT .....                            | 78  |
| FIGURE 18. AREA LANDMARK SYMBOLOGY.....                                 | 88  |
| FIGURE 19. GUPSDATA SETTINGS TOOL.....                                  | 123 |
| FIGURE 20. GUPS DATA SETTING TOOL LOCATED ON THE STANDARD TOOL BAR..... | 126 |
| FIGURE 21. GUPSDATA SETTINGS WINDOW.....                                | 127 |
| FIGURE 22. SWIM LOGIN SCREEN .....                                      | 140 |
| FIGURE 23. SWIMACCOUNT REGISTRATION SCREEN.....                         | 141 |
| FIGURE 24. SWIM WELCOME PAGE (NO PREVIOUS FILES UPLOADED) .....         | 142 |
| FIGURE 25. SWIM WELCOME PAGE (FILES PREVIOUSLY UPLOADED) .....          | 142 |
| FIGURE 26. SWIM GEOGRAPHIC PROGRAM PAGE .....                           | 142 |
| FIGURE 27. SWIM SELECT A STATE PAGE (FOR BBSP-VTD) .....                | 143 |
| FIGURE 28. SWIM SELECT A ZIP FILE TO UPLOAD PAGE .....                  | 143 |
| FIGURE 29. SWIM THANK YOU PAGE.....                                     | 144 |



## Paperwork Reduction Act Statement

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We estimate that the Voting District Project (VTDP) verification process will take a total of 217 hours on average per participant. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to [rdo@census.gov](mailto:rdo@census.gov). This collection has been approved by the Office of Management and Budget (OMB). The eight digit OMB approval number that appears at the upper left of this document confirms this approval. If this number were not displayed, we could not conduct this survey. This collection is voluntary. The Census Bureau conducts this program under the legal authority of the Title 13 United States Code (U.S.C.), Sections 16, 141, and 193.

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.

# Section 1. Introduction

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## 1.1 Background

Public Law (P.L.) 94-171 stipulates that the U.S. Census Bureau work in a nonpartisan manner with the states to identify and provide the small-area population counts necessary for legislative redistricting. The Census Bureau is required to provide these counts within one year of Census Day, to the governor and the officers or public bodies responsible for redistricting in each state. For the 2020 Census, the Census Bureau must deliver the counts by April 1, 2021.

The Census Redistricting & Voting Rights Data Office (CRVRDO) implements the requirements of P.L. 94-171 through five phases of the 2020 Redistricting Data Program (RDP):

Phase 1: Block Boundary Suggestion Project (BBSP)

Phase 2: Voting District Project (VTDP)

Phase 3: Delivery of the 2020 P.L. 94-171 Redistricting Data Files

Phase 4: Collection of Post-2020 Redistricting Plans

Phase 5: Review of 2020 Census Redistricting Data Program and Recommendations for Census 2030

## 1.2 Purpose

This document addresses Phase 2: Voting District Project (VTDP) of the RDP. Through the VTDP, liaisons designated by the legislative leadership in each state, the District of Columbia, and Puerto Rico, have the opportunity to submit their voting district boundaries (e.g. precincts, wards), codes, and names to the Census Bureau as well as suggest additional updates to other geographic areas as they did in the Block Boundary Suggestion Project (BBSP). This guide is intended for state participants using the Census Bureau's Geographic Update Partnership Software (GUPS) tool to participate in the program.

## 1.3 Document Structure

**Part 1. VTDP Overview** of the document provides the conceptual overview of the 2020 VTDP, including:

- Update activities,
- Quality control activities, and
- New Features of GUPS

**Part 2. Participating in VTDP Using GUPS** contains the technical directions for using the GUPS to accomplish updates as outlined in Part 1. Part 2 contains step-by-step instructions on using the GUPS tools.

We suggest reviewing **Part 1** to determine the types of updates you wish to make, and then referring to those sections of **Part 2** that describe how to make those updates.

## Part 1. VTDP Overview

### Section 2. Suggested Workflow

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The VTDP participant is not required to perform all the update activities permitted. Work is performed at a county level and should be submitted to the Census Bureau on a flow basis, as each county is completed. Submitting work on a flow basis permits the CRVRDO and the Census Bureau to review the files early in the process and provide feedback as necessary. GUPS contains validation tools to ensure VTDP updates meet the established criteria and submission files meet Census Bureau processing requirements.

When you begin a GUPS VTD project, the software will offer you three ways to get started:

- Creating a new VTD layer– A good option if you do not have a shapefile or tabularequivalency file defining your current VTDs.
- Importing a tabular equivalency file – A good option if you have a text file that defines what 2010 Census blocks comprise your current VTDs. Be aware that 2010 Census block boundaries may have been reshaped in an effort to improve spatial accuracy and may not appear exactly as they did in 2010 Census data products. Therefore, you should review the depiction of your VTDs in GUPS after you import the tabular equivalency file, to ensure your VTDs appear as expected.
- Importing your own VTD shapefile – A good option if you have a shapefile that depicts your current VTDs. Note that GUPS may conflate your VTD shapefile to align with Census geography – particularly current county boundaries – so you should review the depiction of your VTDs in GUPS after you import the shapefile, to ensure it appears as expected.

During our initial cycle of VTDP, you also had the option of starting your project with a Census 2010 VTD shapefile. However, these 2010 VTDs were replaced with those submitted during the initial cycle of VTDP. Therefore, the Census Bureau can no longer provide the option to start your project with 2010 VTDs.

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**Note:** If you have a statewide VTD tabular equivalency file for your state, please contact us at [rdo@census.gov](mailto:rdo@census.gov) or 301-763-4039 for other submission options.

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See **Section 7** to review the GUPS technical instructions for Starting a VTD Project.

Once you have started your project, there are various type of updates you can make, and the order you wish to make them will depend on your situation. For example, you may want to update or add linear features or incorporated place boundaries before updating your VTDs, if you plan to use those incorporated place boundaries or linear features as VTD boundaries. Updates allowed in the VTDP are listed below.

## 2.1. Voting District Boundary Updates

Once you begin your GUPS project using one of the three options described above you can modify or create new VTDs by adding area to them. Because VTDs cannot overlap and must cover the entire county, you can only remove area from one VTD by adding it to another. VTDs can also be deleted in their entirety. You can also add or modify VTD names and/or codes.

See **Section 8** to review the GUPS technical instructions for VTD Updates.

## 2.2. Linear Feature Review

You may want to review the Census Bureau's linear features (edges layer) to determine whether there are features to be added or deleted. Pay particular attention to any areas that have experienced population growth, where there may be new housing or subdivisions not reflected in the Census Bureau's geospatial data. The Census Bureau will also accept attribute updates (name, classification code, and address ranges) for selected features. Added road features with MAF/TIGER Feature Class Code (MTFCC) values of S1100-Primary Road, or S1200-Secondary Road, require a feature name. GUPS will allow you to import street centerline, hydrographic, imagery and other user-provided geospatial data for reference and comparison against the Census Bureau data.

Please be aware that the Census Bureau:

1. Will not process the wholesale spatial realignment of features to enhance spatial accuracy. If a feature is in the incorrect location in the Census Bureau's feature network, delete the feature and add it in the correct location. Take this action only if the feature is more than 7.6 meters off or interferes with relationships to other features.
2. Will only accept new nonvisible edges, parcel lines, pipelines, and power lines when they are being used to define a boundary. See **Section 8.3** to review the GUPS technical instructions for Linear Feature Review.

See **Section 8.3** to review the GUPS technical instructions for Updating Linear Features.

**Appendix A, Table 62: Linear Feature Updates Permitted** lists the feature updates the Census Bureau will accept.

### 2.3. Area Landmark and Area Hydrography Review

The Census Bureau accepts updates to area landmarks and area hydrography as part of the VTDP.

Allowable updates include:

- Boundary corrections (adding and removing area);
- Creating a new area landmark or hydrographic area;
- Removing an area landmark or hydrographic area; and
- Changing or adding a name.

If your state plans to reallocate prisoners during redistricting, you may wish to review the existing area landmarks with MTFCCs K1235, K1236, K1237, and K1238, which represent areas with prison populations.

See **Section 8.4** to review the GUPS technical instructions for Area Landmark Review (including hydrographic areas).

**Appendix A, Table 61: Area Landmark Updates Permitted** lists the feature updates the Census Bureau will accept.

### 2.4. Legal Boundary Review and Update

At the recommendation of many states, the Census Bureau introduced a Boundary and Annexation Survey (BAS) review as part of Phase 1 (BBSP) and Phase 2 (VTDP) of the Redistricting Data Program. State Redistricting Liaisons may provide boundary corrections and other legal updates (annexations, deannexations, incorporations and disincorporations), and supporting documentation. The Census Bureau will assume the responsibility for reconciling the updates with the appropriate local governments as part of our Boundary and Annexation Surveys.

You may submit legal boundary updates for counties, minor civil divisions, incorporated places, and consolidated cities. Although legal documentation (effective date, authority type, and documentation number) is not required for boundary updates submitted through the VTDP, we strongly encourage you to submit the documentation to expedite our ability to reconcile and process any legal updates reported. You should submit annexations, deannexations, incorporations and disincorporations without supporting documentation as boundary corrections.

See **Section 8.5** to review the GUPS technical instructions for Legal Boundary Updates.

## 2.5. Congressional and State Legislative District Review

When making changes to voting district or legal geography, you may need to correct the congressional or state legislative district boundaries to maintain spatial relationships, or if the spatial representation of the CD or SLD boundary is incorrect. Larger changes that occur during redistricting are collected in a separate operation conducted by the Census Bureau every two years, in advance of new Congressional Sessions.

## 2.6. VTD Criteria Review

This QC tool checks all VTDs in the county and looks for areas (faces) not assigned to any VTD, as well as non-contiguous VTDs, CDs, and SLDs. Unassigned faces must be addressed. Non-contiguous entities may be ignored if the VTD, CD, or SLD is actually non- contiguous.

See **Section 8.7.1 VTD Criteria Review Tool** to review the GUPS technical instructions for running the VTD Criteria Review.

## 2.7. Review Change Polygons

GUPS provides a change polygon review if you made boundary updates. Under the Review Change Polygons button there are two checks: Small Area Check and Find Holes. These checks ensure that you do not submit area changes that are too small to process or that there are no “holes” in areas due to potential delineation errors. The tools also provide the ability to make changes to legal boundary updates as you review your original updates.

See **Section 8.7.2** to review the GUPS technical instructions for Reviewing Change Polygons.

## 2.8. Work Delegated?

The Census Bureau works with the State Redistricting Data Program nonpartisan liaison, designated by the governor and legislative leadership of the state. To maintain this nonpartisan relationship, the Census Bureau only accepts completed work from the designated State Restricting Data Program Liaison.

### **YES, State’s designee performed the work (not the State RDP Liaison)**

Any work performed on behalf of the State Redistricting Data Program Liaison, such as by a county or a contractor, must be submitted to the State Liaison(s) for review and approval. The State RDP Liaison will submit the work to the Census Bureau if they approve the work. If the State RDP Liaison determines that VTDP work completed by a designee requires changes or additional work, it is the State Liaison’s responsibility to decide whether to make the changes or return the project to their designee for further updates.

**NO, State RDP Liaison performed the work**

The State RDP Liaison submits completed, county-level files on flow basis to the Census Bureau through the Secure Web Incoming Module (SWIM). Do not hold files to submit all at once. Submit files as you complete them, especially at the beginning of the update period, so that the Census Bureau can provide feedback if there are errors, omissions, or other concerns.

See **Section 8.8.3** to review the instructions for creating export files for submission to the RDP Liaison or **Section 8.8.4** to review the instructions for creating export files for submission to the Census Bureau.



## Section 3. New Tools in GUPS

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If you participated in Phase 1: Block Boundary Suggestion Program (BBSP or BBSPV) and used GUPS, you might be interested in enhancements we have made to the software and some new features introduced specifically for VTDP.

### 3.1 Split Linear Feature

This tool allows you to split any linear feature if you need to delete or make attribute changes to only part of the line. The tool allows you to split the line at a specific location, forming two segments, and update attributes or delete the appropriate segment.

See **Section 8.3.2**, to review the GUPS technical instructions for using the split linear feature tool.

### 3.2 Switch to BBSP Style

If you participated in BBSP or BBSPV and are accustomed to the symbology style used then, or wish to verify your BBSP updates, this tool allows you to switch between the symbology styles of VTDP to the symbology style of BBSP.

See **Appendix G Switch to BBSP Style Button** to review the GUPS technical instructions for using the Switch to BBSP Style tool.

### 3.3 Export Tabular Equivalency File

This export option allows you to export your current VTD layer as a tabular equivalency file.

See **Section 8.8.2** to review the GUPS technical instructions for exporting a tabular equivalency file.

### 3.4 GUPS Data Settings

The GUPS Cleanup Tool has been renamed to the **GUPS Data Setting** Tool. It retains the same functionality of deleting project files, but has been modified to include additional data management options:

1. Allows you to change the location on your computer where your GUPS data folder is stored.
2. Allows you to view the directory where your data are being stored.

### **3.5 Updating Congressional and State Legislative Districts**

GUPS now includes the ability to update boundaries of congressional and state legislative districts using the Modify Area Feature tool. See **Section 8.6** for more information. You can also perform QC checks on these updates using the Review Change Polygons tool. See **Section 8.7**.

### **3.6 Ability to replace VTD current layer at any time**

In previous versions of GUPS, you had the option of importing your own VTD TEF or shapefile when you were creating the project. GUPS would create a *VTDCurrent* layer by aligning your VTD shapefile with Census geography. You could not import a VTD layer after you had begun your project. So, if you started with a blank VTD layer, made some linear feature or other updates, and then wanted to import your VTD layer as a starting point for making updates, you had to start the project over completely, losing your linear feature or other updates. GUPS will now allow you to import your shapefile to create a new VTD Current layer at any time, without losing any other updates you may have made to any other geographies other than VTDs. It will replace the *VTDCurrent* layer, so any updates you made to that layer prior to the import will be lost.

### **3.7 Ability to Lock/Unlock Multiple VTDs at One Time**

The locking tool on the Modify Area Features toolbox has been enhanced to allow you to lock/unlock multiple VTDs at the same time. You may want to lock a VTD to prevent area from being inadvertently removed from it when updating neighboring VTDs. Previously, you could only lock VTDs one at a time. See Section 8.2.2 for more information.

### **3.8 New QGIS Platform**

GUPS is based on QGIS, a free and open-source desktop geographic information system application. You can learn more about QGIS at <http://www.qgis.org/en/site/>. As of fall 2018, GUPS upgraded to work with a new version of QGIS, 2.18.15. The GUPS application is still developed for use in a desktop PC, but no longer supports Windows XP or Windows Vista. The default installation location is now C:\QGISGUPS. The QGIS 2.18.15 install also includes other open source tools that will add icons to the desktop. These include OSGEO4W Shell, GRASS GIS 7.2.2,

MYSYS, QGIS Desktop 2.18.15, QGIS Browser 2.18.15, and SAGA GIS (2.1.2).

### **3.9 Opening Google Map or Bing Imagery**

A new tool has been added to the VTD Toolbar that will open, in a separate window, Google Map or Bing imagery for the area you click on in the map view.

## Section 4. File Submission through Secure Web Incoming Module

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The Secure Web Incoming Module (SWIM) is a tool utilized by U.S. Census Bureau partners to send their VTDP submissions to a secure Census Bureau server. For security reasons, we cannot accept files sent via email or through our former FTP site.

The Census Bureau provides each State RDP Liaison a SWIM token to establish a personal account. Once registered, you no longer need the token to log into the system. Use your SWIM account to submit updates for all phases of the 2020 RDP.

If you have submitted files for BBSP or BBSPV, use the same SWIM account.

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**Note:** The Census Bureau only accepts files submitted by the State RDP Liaison. If a county, agency, or contractor performs work on behalf of the state, the files must be sent to the State RDP Liaison for review, approval, and submission.

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See **Section 9** to review the technical instructions for submitting files through the SWIM.

## **Part 2. Participating in VTDP Using GUPS**

### **Section 5. Getting Started**

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This part of the guide includes information needed to use GUPS and submit your file returns. It offers a description of the GUPS application and gives specific instructions (in the form of step-action tables) for how to use GUPS to make VTDP updates. The five sections of Part 2 are described below.

#### **Section 5. Getting Started:**

- Lists the hardware and software requirements for GUPS and SWIM;
- Provides instructions for installing the GUPS application; and
- Details accessing partnership shapefiles.

#### **Section 6. GUPS Basics and Map Management:**

- Provides instructions to open GUPS and start a project;
- Details how to load shapefiles;
- Explains the GUPS interface (including the Menu, Toolbars, Table of Contents or Map Legend, and the Map View area); and
- Offers instructions for using the tools available through the menu and toolbars.

#### **Section 7. Starting a VTD Project**

- Provides instructions for starting a VTD Project using one of the following methods:
  - Creating new blank VTD layers;
  - Importing tabular equivalency files; and
  - Importing VTD shapefiles.

#### **Section 8. VTD Update Activities in GUPS and Creating Submission Files:**

- Creating and Updating VTDs;
- Updating Linear Features;
- Updating Area Landmarks;
- Updating Legal Boundaries;
- Updating Congressional and State Legislative Districts
- Conducting Quality Control Checks and Criteria Reviews; and
- Creating Submission Files.

#### **Section 9. File Submission through SWIM:**

- Provides instructions for submitting files to the Census Bureau through SWIM.

VTDP participants are not required to perform all update activities. Linear feature, area landmark, congressional and state legislative and legal boundary reviews, are all optional. We suggest that you make the decision whether to perform each of these review/update activities based on your state’s redistricting requirements and available resources.

States with laws that require the re-allocation of prison populations for the purposes of redistricting may wish to review the area landmarks with the MTFCCs that represent prisons (K1235, K1236, K1237, and K1238).

States with strong relationships between VTDs and other legal geographies may wish to review the legal boundaries as reflected in the Census Bureau data to ensure they are accurate as of the review date.

GUPS contains several required quality control checks to ensure that VTDP updates meet the established criteria, and that the submission files meet Census Bureau processing requirements.

## 5.1 GUPS Hardware and System Requirements

GUPS is based on QGIS a free and open-source desktop geographic information system application. You can learn more about QGIS at <http://www.qgis.org/en/site/>. The GUPS application was developed for use in a desktop PC.

**Table 1** lists the hardware and software requirements to install and run GUPS, and submit files through the SWIM website.

**Table 1: GUPS Hardware and Software Requirements**

| Hardware   | Operating System  | Browser  |
|--|---|--|
| <p><b>Required Disk Space:</b></p> <p><b>For GUPS application:</b></p> <p>~2.0 GB of disk space.</p> <p>Shapefiles: Vary by State/County</p> <p><b>RAM:</b></p> <p>4 GB recommended minimum; 8GB recommended for optimal performance</p> | <p><b>Windows:</b></p> <p>To run the GUPS, you will need one of the following Windows operating systems:</p> <p>Windows 7, Windows 8, Windows 10</p> <p><b>Apple Mac OS X:</b></p> <p>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: <a href="https://support.apple.com/en-us/HT201468">https://support.apple.com/en-us/HT201468</a></p> <p><b>Note:</b> 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.</p> | <p><b>Minimum Browser Versions for SWIM:</b></p> <p>Current and the last, previous versions of:</p> <p>Internet Explorer</p> <p>Google Chrome</p> <p>Mozilla Firefox</p> <p>Apple Safari</p> |

## 5.2 Installing GUPS and Census Bureau Spatial Data

The Census Bureau provides two DVDs for utilizing GUPS:

1. The first DVD contains the software installer and a readme file with installation instructions.
2. The second DVD contains the respondent guides, partnership shapefiles, and block size shapefiles for the counties in your state.

Please be aware that the VTDP GUPS software, shapefiles, and guides are available for download from the 2020 Census Programs Phases page at the CRVRDO's website <<https://www.census.gov/rdo>>.

### 5.2.1. Installing the GUPS Application

If you have worked on BBSP/BBSPV, VTDP, or another Census geographic update program, you will likely have GUPS already installed on your computer. New functionality and enhancements have been made to the GUPS software, so we recommend updating your existing GUPS installation. When you install the new version of GUPS from the DVD or from the RDP webpage, you will be given the option to uninstall your current version of QGIS/GUPS. GUPS was updated to work on a new version of QGIS (2.18.15) in Fall 2018. If you worked on geographic programs using GUPS prior to Fall 2018, and you want to retain the ability to open up those GUPS projects, we recommend keeping the previous version of GUPS, built on QGIS 2.8.3.

Prior to updating, it is also suggested that you make a backup of your existing GUPSGIS data folder in case you have projects from BBSP/BBSPV or other Census geographic programs that you would like to keep and continue to use with GUPS. You can simply make a copy of this folder and place it in another location on your computer. The GUPS installer and software is designed to keep the existing GUPSGIS data folder, with all project data, intact if one already exists, however, it is good practice to make a backup of your existing GUPSGIS data folder before updating to a newer version of GUPS.

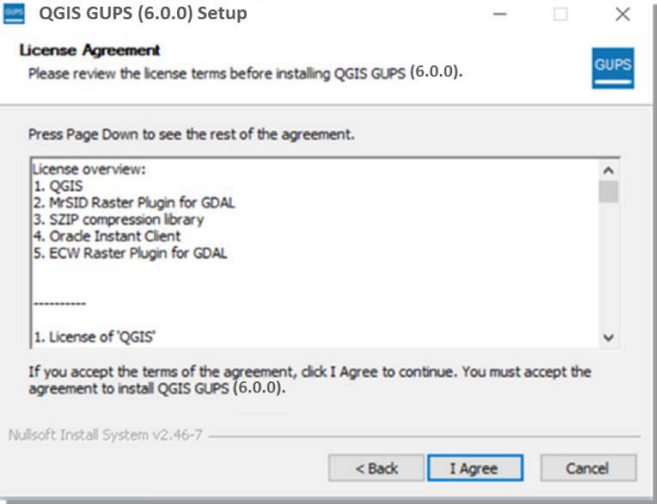
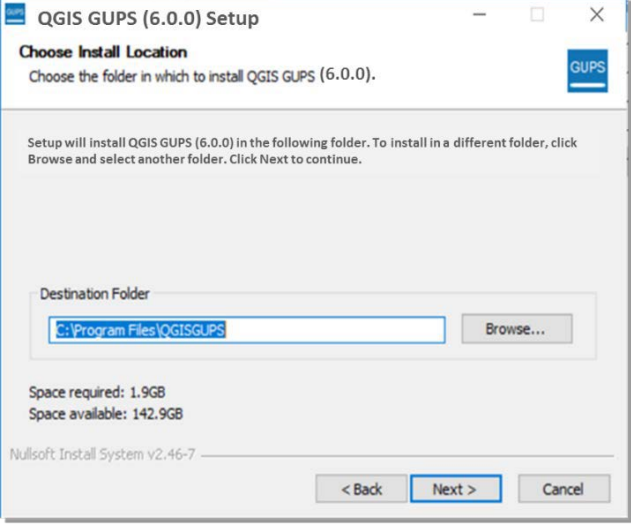
To complete the installation, follow the steps in **Table 2**.

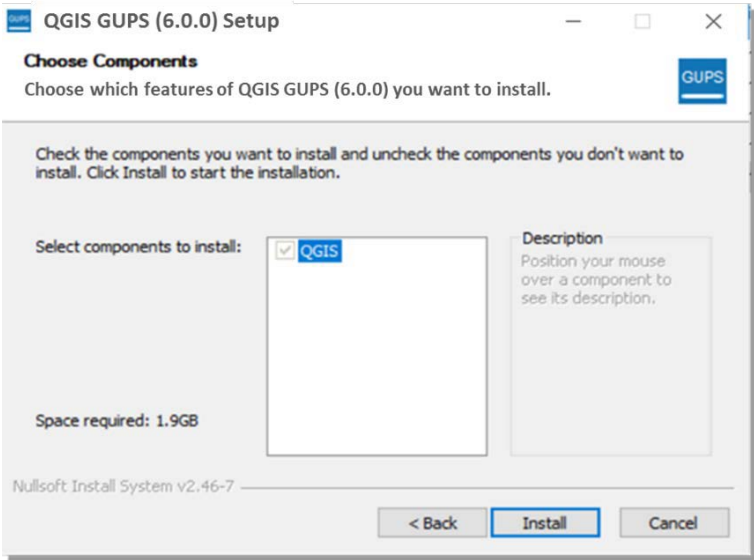


Depending on the Windows OS version, the GUPS dialog boxes may have a different appearance than the screenshots contained in the user guide, although the content is the same.

**Table 2: How to Install the GUPS Application**

| Step                 | Action and <i>Result</i>   |
|----------------------|--|
| <p><b>Step 1</b></p> | <p><b>NOTE: The screenshots below depict an installation of GUPS version 6.0.0. The version you install will be more recent and have a different version number from what is shown below.</b></p> <p>Place the installation DVD into your computer's DVD drive. <i>For some users, a <b>Windows protected your PC</b> pop-up box may appear.</i></p> <div data-bbox="610 491 1333 737" data-label="Image"> </div> <p>To continue, click 'More info', then select 'Run anyway?'</p>                 |
| <p><b>Step 2</b></p> | <p>Other users may 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. See an example below.</p> <div data-bbox="630 905 1312 1339" data-label="Image"> </div> <p>If you receive such a pop-up, click '<b>Run</b>', '<b>Yes</b>', '<b>Allow</b>', or an option that allows you to proceed. <i>The software runs automatically.</i></p> |
| <p><b>Step 3</b></p> | <p>If the software does not run automatically, open Windows Explorer, navigate to your DVD drive, and double-click on the file named <b>Setup-6.0.0-x.bat</b>. <b>Note:</b> The name of this file may vary slightly, but it will be the only setup <b>.bat</b> file available.</p> <p>If the software still does not run properly, contact your System Administrator for assistance.</p>   |
| <p><b>Step 4</b></p> | <p><i>When the installer opens, the <b>Welcome to the QGIS GUPS Setup Wizard</b> screen appears.</i></p>   |



| Step                 | Action and Result  |
|----------------------|--|
|                      | <p>Before proceeding, close all other programs or applications you have open. Once other programs and applications are closed, click the <b>Next</b> button.</p>   |
| <p><b>Step 5</b></p> | <p><i>The <b>License Agreement</b> screen appears.</i></p>  <p>Read the <b>License Agreement</b> and click the <b>I Agree</b> button to continue.</p>  |
| <p><b>Step 6</b></p> | <p><i>The <b>Choose Install Location</b> screen opens. The <b>Browse</b> button on this screen allows you to browse your computer for installation location. We recommend that you install the application at the default location shown: (C:\Program files\QGISGUPS).</i></p>  <p>To begin the installation, click <b>Next</b> to continue.</p> |

|   |   |
|---|---|
| <p><b>Step 7</b></p>  | <p>The <b>Choose Components</b> screen opens.</p>  <p>'<input checked="" type="checkbox"/> QGIS' in the <b>Select components to install</b> field is grayed out since it is the default. You do not need to select it, simply click <b>Install</b> to continue.</p> |
|  | <p>If you want to review a previous screen or reread the license agreement, click the <b>Back</b> button (each screen contains this button).</p>  |
| <p><b>Step 8</b></p>  | <p>The software should take between 5 and 10 minutes to install. <i>When it is finished, the <b>Completing the QGIS GUPS Setup Wizard</b> screen opens indicating the install has completed.</i></p> <p>Click the Finish button. If the '<i>Reboot now</i>' appears, select it and then click Finish.</p>   |
| <p><b>Step 9</b></p>  |  <p>A GUPS icon appears on your desktop. It may look different from what is depicted here.</p>   |

### 5.2.2. Accessing the Census Bureau Partnership Shapefiles

There are two types of shapefiles available to support the VTDP update activities: **partnership shapefiles** and **block size** (also known as prototype block) **shapefiles**.

- **Partnership Shapefiles:** The Partnership Shapefiles are used in Census Bureau partner programs to share data with and capture data from our partners. They are a direct snapshot of TIGER, the Census Bureau’s geographic database. Specific geographic programs may use different versions of the partnership shapefiles.
- **Block Size Shapefiles:** The Block Size Shapefiles show what the 2020 tabulation blocks would look like based on current geography, and include an estimate, based on 2010 Census data, of the number of housing units contained

within each block. Actual 2020 tabulation blocks will be delineated in 2020 based on the geography that exists at that time.

There are three ways to add the shapefiles to your project in GUPS:

1. **Census Web (recommended):** GUPS will download the shapefiles from the Census Bureau's website into your home directory. You do not need to take any further action.
2. **CD/DVD:** GUPS will download the files to your home directory from the inserted DVD. You do not need to take any further action.
3. **My Computer:** GUPS will automatically load the shapefiles from a location on your computer into your project, but you must first manually download the shapefiles to that location from the Census Bureau's FTP site. (See Section 5.3). GUPS stores the files in your home directory at C:\Users\GUPS Data Settings Tool. For the purposes of this guide, we assume the home directory is C:\Users\

See **Section 6 GUPS Basics and Map Management** for the technical instructions on how to load the partnership shapefiles using Map Management in the GUPS.

See **Section 6.2.7.1** for the technical instructions on manually loading the block size shapefiles using the **Add Vector Layer** button on the **Add Data** toolbar.

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**Caution:** Please only use the **GUPS Data Settings** tool to change your GUPS folder location. Do not change any shapefile name or folder location outside of this tool. The shapefiles and folders must have the exact, given names and locations for the GUPS application to recognize them.

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## 5.3 Downloading Partnership Shapefiles

State-level users may download partnership shapefiles and the block size shapefiles for all the counties in their state. Both sets of shapefiles are available from the Census Bureau's FTP site. The block size shapefiles are located in a different directory than the partnership shapefiles, so they require a separate download.

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**Note:** We strongly suggest that you use the Census Web or DVD option that is contained within GUPS to download the partnership shapefiles. We are providing information on downloading files from the FTP site in this section as a courtesy, in the event a state or their designee may need to obtain the files from the sites directly.


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### 5.3.1 Download the Partnership Shapefiles from FTP Site

Follow the steps in **Table 3** to download the files from the FTP site to your hard drive.

**Table 3: Download Partnership Shapefiles from FTP Site**


| Step  | Action and Result  |
|---|--|
| <p><b>Step 1</b></p>  | <p>Using Internet Explorer (IE) or a web browser of your choice navigate to <a href="ftp://ftp2.census.gov/">&lt;ftp://ftp2.census.gov/&gt;</a>. <b>Note:</b> This page may appear differently depending on your browser.</p> <div data-bbox="667 422 1247 961" style="border: 1px solid black; padding: 5px;"> <p><b>FTP root at ftp2.census.gov</b></p> <p>To view this FTP site in File Explorer: press Alt, click View, and then click <b>Open FTP Site in File Explorer.</b></p> <p>Server: ftp2.census.gov</p> <p>Personal Identifiable Information (PII) shall not be placed on the FTP server without prior special arrangement and in conjunction with ITSO.</p> <p><b>NOTE:</b> The data available for anonymous FTP download on this FTP server are also available over the Web:<br/><a href="http://www2.census.gov">http://www2.census.gov</a></p> <hr/> <pre> 01/24/2014 12:00AM      17  ACA 01/24/2014 12:00AM      28  CTP 2006 2010 04/04/2015 12:00AM    Directory 800 2006 2010 06/09/2015 12:00AM    Directory 800 Disability_2008-2010 04/27/2011 12:00AM    Directory Econ2001 And Earlier 01/24/2014 12:00AM      17  HUD 06/05/2017 06:18AM    Directory about 05/24/2015 12:00AM    Directory acs 09/29/2009 12:00AM    Directory acs2002 10/04/2004 12:00AM    Directory acs2003 02/02/2006 12:00AM    Directory acs2004 06/29/2015 12:00AM    Directory acs2005 01/24/2014 12:00AM      11  acs2005 2005 3yr 01/24/2014 12:00AM      11  acs2005 2005 5yr 08/28/2015 12:00AM    Directory acs2006 01/24/2014 12:00AM      11  acs2006 2005 3yr 08/29/2015 12:00AM    Directory acs2007 3yr 01/24/2014 12:00AM      12  acs2007 2005 3yr 09/29/2015 12:00AM    Directory acs2007 5yr 09/29/2015 12:00AM    Directory acs2008 3yr 09/29/2015 12:00AM    Directory acs2009 3yr 09/29/2015 12:00AM    Directory acs2009 5yr 09/29/2015 12:00AM    Directory acs2009 3yr 09/29/2015 12:00AM    Directory acs2009 5yr 09/29/2015 12:00AM    Directory acs2010 3yr 09/29/2015 12:00AM    Directory acs2010 5yr 04/04/2012 12:00AM    Directory acs2010 SPT ATAN 09/24/2015 12:00AM    Directory acs2011 3yr 09/24/2015 12:00AM    Directory acs2011 5yr </pre> </div> |
|  | <p>If you have an FTP client software such as WinSCP or FileZilla (or other) you may connect to <a href="ftp://ftp2.census.gov/">&lt;ftp2.census.gov&gt;</a> without a password. If prompted for a user name and password, enter 'anonymous' as your user name and enter your email address in place of a password.</p>  |
| <p><b>Step 2</b></p>  | <p>After the Census Bureau ftp site has been opened, click the <b>geo</b> folder.</p> <div data-bbox="667 1241 1247 1625" style="border: 1px solid black; padding: 5px;"> <p><b>FTP root at ftp2.census.gov</b></p> <p>To view this FTP site in File Explorer: press Alt, click View, and then click <b>Open FTP Site in File Explorer.</b></p> <p>Server: ftp2.census.gov</p> <p>Personal Identifiable Information (PII) shall not be placed on the FTP server without prior special arrangement and in conjunction with ITSO.</p> <p><b>NOTE:</b> The data available for anonymous FTP download on this FTP server are also available over the Web:<br/><a href="http://www2.census.gov">http://www2.census.gov</a></p> <hr/> <pre> 06/23/2010 12:00AM    Directory econ2008 06/09/2011 12:00AM    Directory econ2009 09/29/2012 12:00AM    Directory econ2010 09/29/2012 12:00AM    Directory econ2011 09/29/2012 12:00AM    Directory econ2012 09/22/2016 02:55PM    Directory econ2013 09/22/2016 02:55PM    Directory econ2014 09/22/2016 02:54PM    Directory econ2015 01/27/2014 12:00AM    Directory ex15 05/15/2001 12:00AM      318  Favicon.ico 02/27/2015 12:00AM    Directory fola 10/29/2015 12:00AM    Directory gao 08/23/2016 09:47AM    Directory gvs 10/09/2014 12:00AM    Directory hba 01/24/2014 12:00AM      12  inc 01/24/2014 12:00AM      12  inc </pre> </div>   |
| <p><b>Step 3</b></p>  | <p>Within the <b>geo</b> folder, click the <b>pvs</b> folder.</p>  |

| Step                 | Action and Result  |
|----------------------|--|
|                      | <p style="text-align: center;"><a href="#">Up to higher level directory</a></p> <pre> 02/08/2016 12:00AM   Directory <a href="#">docs</a> 03/04/2015 12:00AM   Directory <a href="#">img</a> 03/23/2011 12:00AM   Directory <a href="#">lost+found</a> 12/05/2016 12:00AM   Directory <a href="#">maps</a> 08/29/2017 02:47PM   0 <a href="#">mytouch</a> 01/12/2015 12:00AM   Directory <a href="#">pdfs</a> 04/27/2017 09:57AM   Directory <a href="#">pvs</a> 01/10/2017 12:00AM   Directory <a href="#">relfiles</a> 08/14/2017 01:07PM   Directory <a href="#">tiger</a> </pre>   |
| <p><b>Step 4</b></p> | <p>Click the state folder that contains the county(s) for which you are downloading data. The state folders are represented using two-digit state FIPS codes.</p> <p style="text-align: center;"><a href="#">Up to higher level directory</a></p> <pre> 07/13/2017 07:21AM   Directory <a href="#">01</a> 07/12/2017 02:47PM   Directory <a href="#">02</a> 07/14/2017 09:58AM   Directory <a href="#">04</a> 07/12/2017 02:50PM   Directory <a href="#">05</a> 07/12/2017 03:00PM   Directory <a href="#">06</a> 07/13/2017 07:24AM   Directory <a href="#">08</a> 07/12/2017 03:00PM   Directory <a href="#">09</a> 07/12/2017 01:51PM   Directory <a href="#">10</a> 07/12/2017 03:00PM   Directory <a href="#">11</a> 07/12/2017 03:05PM   Directory <a href="#">12</a> 07/12/2017 03:52PM   Directory <a href="#">13</a> 07/12/2017 03:52PM   Directory <a href="#">15</a> 07/12/2017 03:55PM   Directory <a href="#">16</a> 07/13/2017 07:27AM   Directory <a href="#">17</a> 07/12/2017 03:58PM   Directory <a href="#">18</a> 07/12/2017 04:01PM   Directory <a href="#">19</a> 07/12/2017 04:05PM   Directory <a href="#">20</a> 07/12/2017 04:10PM   Directory <a href="#">21</a> 07/12/2017 04:14PM   Directory <a href="#">22</a> 07/12/2017 04:15PM   Directory <a href="#">23</a> 07/12/2017 04:17PM   Directory <a href="#">24</a> 07/13/2017 07:29AM   Directory <a href="#">25</a> 07/12/2017 04:22PM   Directory <a href="#">26</a> 07/12/2017 04:27PM   Directory <a href="#">27</a> 07/12/2017 04:30PM   Directory <a href="#">28</a> </pre> |
| <p><b>Step 5</b></p> | <p>There are several sets of shapefiles within each state directory. For the VTDP, you will want to download the most recent partnership shapefiles. These shapefiles are contained within a zip file named <b>partnership_shapefiles_&lt;18&gt;v2_scccc.zip</b> or <b>partnership_shapefiles_19v2_scccc.zip</b>, where &lt;ssccc&gt; represents the FIPS state and county code (e.g., 55025). <b>Files ending in 19v2 will be the most recent when they are released in December 2019/January 2020. Until then, use the files ending in 18v2. Make sure to choose the filename with "18v2" or "19v2" because the "v1" files, which are different, are sometimes also available in the folders.</b></p>  |
| <p><b>Step 6</b></p> | <p>Click on your county zip file to download the data to a folder on your computer. Select the county or counties that you intend to download to your computer. When you start a new project in GUPS and after you select the state and county you want to work on, GUPS will ask you where to find the data to start your project. To access the data you have downloaded, select the My Computer option. GUPS will ask you to navigate to the location where you have downloaded and saved your data.</p> <p>GUPS will load the data into the application and move the data to a directory folder established during the GUPS installation.</p>  |

### 5.3.2 Download the Block Size Shapefiles from the FTP Site:

Follow the steps in **Table 4** to download the block size shapefiles from the FTP site to your hard drive. **Note these files will not be available for the second round of VTD Verification, which begins in December 2019/January 2020.**

**Table 4: Download Block Size Shapefiles from FTP Site**

| Step  | Action and Result   |   |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
|---|---|---|-------------|---|--------------------|------------|---|--------------------|-------------|---|--------------------|-------------|---|--------------------|-------------|---|--------------------|-------------|---|--------------------|------------|---|--------------------|------------|---|--------------------|-----------|---|--------------------|-------------|---|--------------------|-------------|---|--------------------|------------|---|
| <p><b>Step 1</b></p>  | <p>Using Internet Explorer (IE) or a web browser of your choice navigate to <a href="ftp://ftp2.census.gov/">&lt;ftp://ftp2.census.gov/&gt;</a>. The <b>FTP root at ftp2.census.gov main page opens.</b></p> <div data-bbox="532 390 1265 632" style="border: 1px solid black; padding: 5px;"> <p><b>FTP root at ftp2.census.gov</b></p> <p>To view this FTP site in File Explorer: press Alt, click View, and then click <b>Open FTP Site in File Explorer.</b></p> <p>Server: ftp2.census.gov</p> <p>Personal Identifiable Information (PII) shall not be placed on the FTP server without prior special arrangement and in conjunction with ITSO.</p> <p>NOTE: The data available for anonymous FTP download on this FTP server are also available over the Web:<br/> <a href="http://www2.census.gov">http://www2.census.gov</a></p> </div>   |   |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
|  | <p>If you are using an FTP client software such as WinSCP or FileZilla (or other), you can connect to <a href="ftp://ftp2.census.gov/">&lt;ftp2.census.gov&gt;</a> without a password. If prompted for a user name and password, enter “anonymous” as your username and enter your email address in place of a password.</p>  |   |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| <p><b>Step 2</b></p>  | <p>Click the geo folder, and then within the geo folder, click the pvs folder, then the BBSP folder. The file directory is: <a href="ftp://ftp2.census.gov/geo/pvs/bbsp/">&lt;ftp://ftp2.census.gov/geo/pvs/bbsp/&gt;</a>. Within the BBSP folder, there is a zip file with the 2020 prototype blocks with the naming convention: <code>bbsp_2018_prototype_blocks_st&lt;ss&gt;.zip</code>, where <code>&lt;ss&gt;</code> represents the FIPS state code (e.g., 55).</p>  |   |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| <p><b>Step 3</b></p>  | <div data-bbox="641 1014 1149 1268" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><u><a href="#">Up to higher level directory</a></u></p> <table border="0"> <tr><td>08/31/2017 12:00AM</td><td>141,226,747</td><td><a href="#">bbsp_2017_prototype_blocks_st01.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>79,621,274</td><td><a href="#">bbsp_2017_prototype_blocks_st02.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>111,719,933</td><td><a href="#">bbsp_2017_prototype_blocks_st04.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>123,997,053</td><td><a href="#">bbsp_2017_prototype_blocks_st05.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>362,724,590</td><td><a href="#">bbsp_2017_prototype_blocks_st06.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>125,457,570</td><td><a href="#">bbsp_2017_prototype_blocks_st08.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>34,844,832</td><td><a href="#">bbsp_2017_prototype_blocks_st09.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>11,635,792</td><td><a href="#">bbsp_2017_prototype_blocks_st10.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>2,236,711</td><td><a href="#">bbsp_2017_prototype_blocks_st11.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>179,405,623</td><td><a href="#">bbsp_2017_prototype_blocks_st12.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>160,697,717</td><td><a href="#">bbsp_2017_prototype_blocks_st13.zip</a></td></tr> <tr><td>08/31/2017 12:00AM</td><td>13,708,338</td><td><a href="#">bbsp_2017_prototype_blocks_st14.zip</a></td></tr> </table> </div> <p>Click on your state zip file to copy the data to a folder on your computer. You will need to manually add the data to your project later using the <b>Add Data Toolbar</b>. See <a href="#">Section 6.2.7</a>.</p> | 08/31/2017 12:00AM                                  | 141,226,747 | <a href="#">bbsp_2017_prototype_blocks_st01.zip</a> | 08/31/2017 12:00AM | 79,621,274 | <a href="#">bbsp_2017_prototype_blocks_st02.zip</a> | 08/31/2017 12:00AM | 111,719,933 | <a href="#">bbsp_2017_prototype_blocks_st04.zip</a> | 08/31/2017 12:00AM | 123,997,053 | <a href="#">bbsp_2017_prototype_blocks_st05.zip</a> | 08/31/2017 12:00AM | 362,724,590 | <a href="#">bbsp_2017_prototype_blocks_st06.zip</a> | 08/31/2017 12:00AM | 125,457,570 | <a href="#">bbsp_2017_prototype_blocks_st08.zip</a> | 08/31/2017 12:00AM | 34,844,832 | <a href="#">bbsp_2017_prototype_blocks_st09.zip</a> | 08/31/2017 12:00AM | 11,635,792 | <a href="#">bbsp_2017_prototype_blocks_st10.zip</a> | 08/31/2017 12:00AM | 2,236,711 | <a href="#">bbsp_2017_prototype_blocks_st11.zip</a> | 08/31/2017 12:00AM | 179,405,623 | <a href="#">bbsp_2017_prototype_blocks_st12.zip</a> | 08/31/2017 12:00AM | 160,697,717 | <a href="#">bbsp_2017_prototype_blocks_st13.zip</a> | 08/31/2017 12:00AM | 13,708,338 | <a href="#">bbsp_2017_prototype_blocks_st14.zip</a> |
| 08/31/2017 12:00AM  | 141,226,747   | <a href="#">bbsp_2017_prototype_blocks_st01.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 79,621,274  | <a href="#">bbsp_2017_prototype_blocks_st02.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 111,719,933   | <a href="#">bbsp_2017_prototype_blocks_st04.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 123,997,053   | <a href="#">bbsp_2017_prototype_blocks_st05.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 362,724,590   | <a href="#">bbsp_2017_prototype_blocks_st06.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 125,457,570   | <a href="#">bbsp_2017_prototype_blocks_st08.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 34,844,832  | <a href="#">bbsp_2017_prototype_blocks_st09.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 11,635,792  | <a href="#">bbsp_2017_prototype_blocks_st10.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 2,236,711   | <a href="#">bbsp_2017_prototype_blocks_st11.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 179,405,623   | <a href="#">bbsp_2017_prototype_blocks_st12.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 160,697,717   | <a href="#">bbsp_2017_prototype_blocks_st13.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |
| 08/31/2017 12:00AM  | 13,708,338  | <a href="#">bbsp_2017_prototype_blocks_st14.zip</a> |             |   |                    |            |   |                    |             |   |                    |             |   |                    |             |   |                    |             |   |                    |            |   |                    |            |   |                    |           |   |                    |             |   |                    |             |   |                    |            |   |

## Section 6. GUPS Basics and Map Management

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

### 6.1 Starting GUPS

To open the GUPS application and set up your project, follow the steps in **Table 5** below.


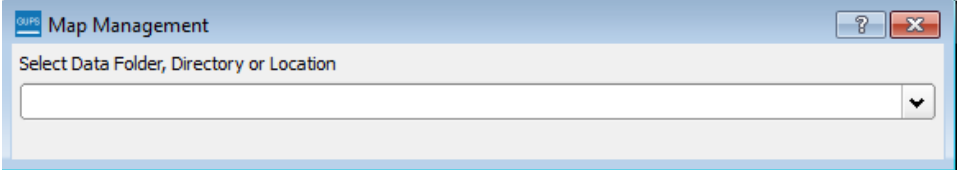

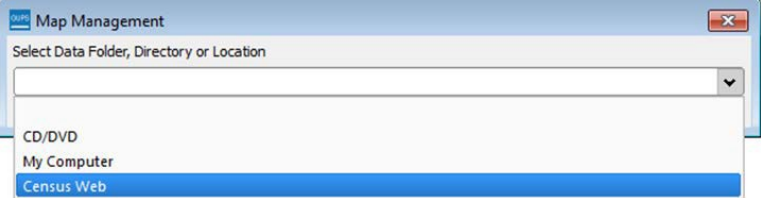
**Table 5: Open GUPS and Start a New Project**

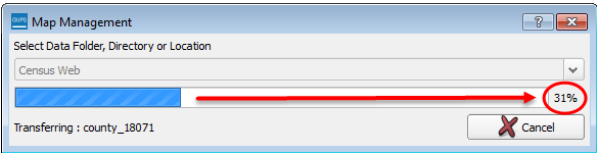
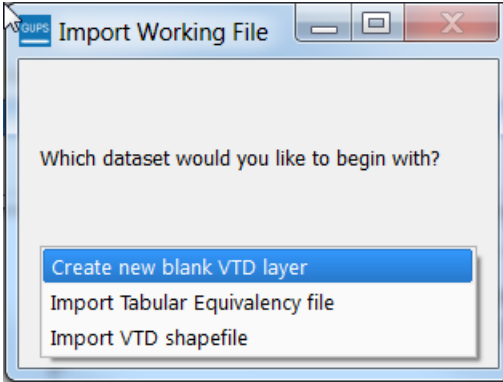
| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 1</b></p> | <p>Double-click the GUPS icon on your desktop. (This icon may look slightly different than what is pictured below.)</p> <div data-bbox="834 732 943 884" data-label="Image"> <p>The image shows a desktop icon for GUPS. The icon is a blue square with the word 'GUPS' in white at the top. Below it is a white arrow pointing right, and at the bottom, the text 'GUPS QGIS Desktop' is written in white.</p> </div> <p>The QGIS splash screen appears. (<b>Note:</b> QGIS is the open-source platform on which GUPS is built.)</p> <div data-bbox="370 957 1252 1377" data-label="Image"> <p>The image is a splash screen for QGIS 2.18. It features a grayscale topographic map of a coastal area. Overlaid on the map is the text 'QGIS 2.18' in a large, light gray font. Below the version number, 'Las Palmas de G.C.' is written in a smaller, teal font. At the bottom center, the text 'Initializing authentication' is visible in a small, light gray font.</p> </div> |
| <p><b>Step 2</b></p> | <p>Wait until the application loads. (This may require a few minutes). When the GUPS application has loaded, the GUPS main page opens and the <b>QGIS Tips!</b> box may appear.</p>  |

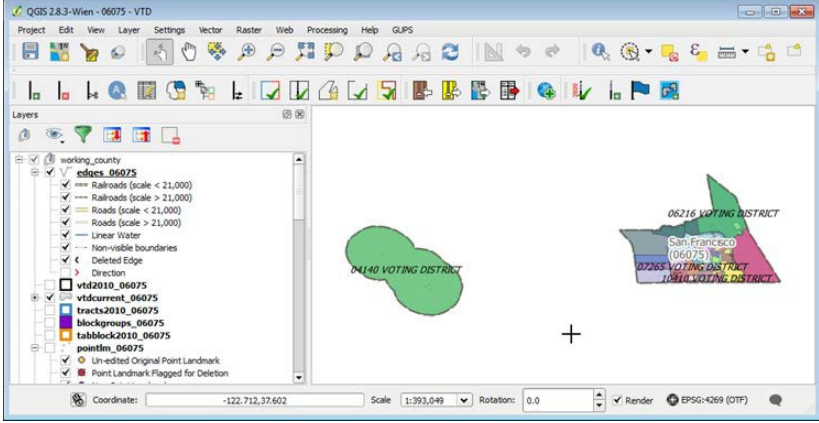
| Step  | Action and Result  |
|---|--|
|   | <div data-bbox="548 258 1230 720" data-label="Image"> </div> <p data-bbox="386 737 1382 800">If you do not wish to see tips again, click the checkbox in the bottom left-hand corner that reads <b>'I've had enough tips, don't show this on start up any more!'</b></p> <p data-bbox="386 814 1300 877"><b>Note:</b> Since GUPS was built on the QGIS open-source platform, you may see references to QGIS in several locations within the GUPS application.</p>  |
| <p data-bbox="264 909 345 940"><b>Step 3</b></p>              | <p data-bbox="386 909 1393 1094">GUPS data are automatically stored in a folder that has been created on your <b>C:\</b> drive. If you would like your data to be stored in a different location, you can set a new location using the <b>GUPS Data Settings</b> tool. Please refer to <b>Section 8.8.1.1</b>. Ideally, you should set the location before you download the GUPS data through Map Management (see <b>Step 4</b> below). If you change the location for your GUPS folder after you have started your project, you may have to restart GUPS.</p> |
| <p data-bbox="264 1125 345 1157"><b>Step 4</b></p>            | <p data-bbox="386 1125 1279 1157">The <b>Map Management</b> dialog box, as shown below, will open automatically.</p> <div data-bbox="574 1171 1206 1675" data-label="Image"> </div>  |
| <div data-bbox="277 1717 358 1791" data-label="Image"> </div> | <p data-bbox="386 1707 1385 1833"><b>Note:</b> <b>Table 6</b> below describes how to proceed if you are starting a new GUPS project, <b>Table 7</b> describes how to proceed if you are going back to continue working on a GUPS project you already started, and <b>Table 8</b> describes how to import or load a project that someone else is sharing with you.</p>  |



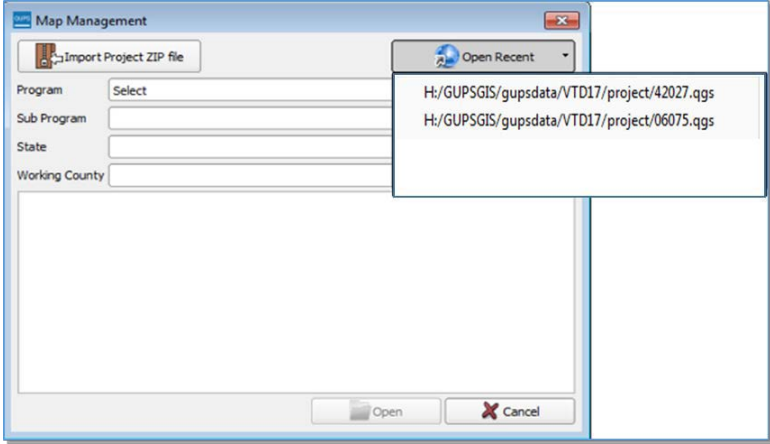
**Table 6: How to Start a GUPS Project**

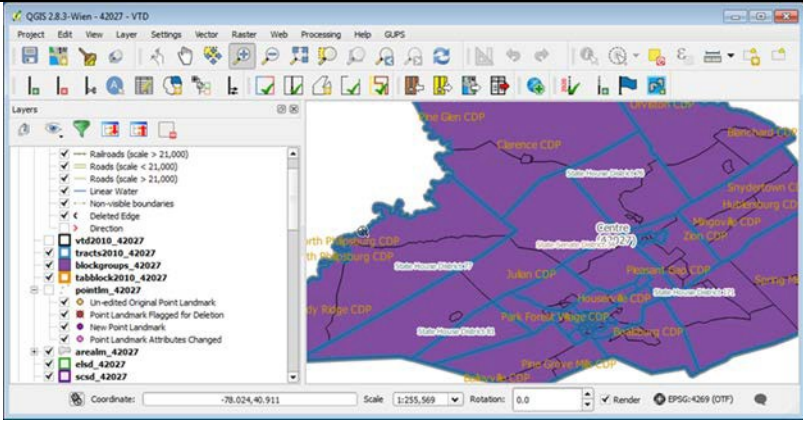
| Step  | Action and <i>Result</i>  |
|---|---|
| <p><b>Step 1</b></p>  | <p>In the <b>Map Management</b> dialog box, use the drop-down menu next to the <b>Program</b> field to select your program, '<b>Voting District Project</b>'. (Note: if you are participating in VTD verification, you should select "Voting District Project Verification" from the dropdown. See VTD Project GUPS User's Guide Addendum.)</p> <p>In the <b>State</b> field, use the drop-down menu to select your state or type the name of the state. The scroll bar to the right allows you to move up and down the list of states. Repeat these steps to choose the <b>County</b> to update.</p> <div data-bbox="418 554 1360 1024">  </div> <p>Click the <b>Open</b> button.</p> |
| <p><b>Step 2</b></p>  | <p>After you select the working county, the GUPS asks you to specify the location from which you want to pull the county's (or county equivalent's) shapefiles. The <b>Select Data Folder, Directory or Location</b> box opens.</p> <div data-bbox="386 1199 1338 1367">  </div>  |
|  | <p>GUPS will only ask you to specify a location <b>the first time</b> you open a county's shapefile. When you come back to work on the same county again, the project will automatically load, even if you made no changes in your first session.</p>   |
| <p><b>Step 3</b></p>  | <p>In the <b>Select Data Folder, Directory or Location</b> box drop-down menu, select the location from which you wish to pull the file. <b>We recommend using the Census Web Option.</b></p> <div data-bbox="516 1633 1273 1829">  </div>  |

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 4</b></p> | <p>Once you click on <b>'Census Web'</b>, the shapefiles for the county begin to load and progress is displayed by a blue striped bar (color may vary), with the percentage of the upload completed displayed to the right.</p>  <p>If you select the CD/DVD option, GUPS will ask you to insert the data CD/DVD provided by the Census Bureau and click OK. The shapefiles will download from the CD/DVD.</p> <p>If you select My Computer option, GUPS will ask you to navigate to the location where the shapefiles you downloaded from the FTP site are stored (see <b>Table 3</b>).</p>  |
| <p><b>Step 5</b></p> | <p>As GUPS loads the data, it unzips and copies the files to a folder that was created on your computer's home directory (i.e., C:/Users/&lt;username&gt;/GUPSGIS/gupsdata/VTD&lt;yy&gt;/shape, where &lt;yy&gt; is the year of the program) during the installation process. It then pulls the shapefiles into the GUPS.</p>   |
| <p><b>Step 6</b></p> | <p>Once the files are loaded, the Import Working File dialog box opens asking <b>'Which dataset would you like to begin with?'</b> Select the appropriate dataset from the dropdown menu.</p>  <ul style="list-style-type: none"> <li>• <b>Create new blank VTD layer:</b> The user will start a VTD project without any VTDs, and create VTDs by selecting faces.</li> <li>• <b>Import Tabular Equivalency file:</b> The user will start a VTD project by importing their own voting district tabular equivalency file (TEF) and mapping the Census VTD file headers to the headers in the TEF.</li> <li>• <b>Import VTD shapefile:</b> The user will start a VTD project by importing their own shapefile that consists of the voting districts for the county they are working on. Similar to importing a TEF, they will also have to map the Census headers to the headers in their VTD shapefile.</li> </ul> <p>For more information, refer to <b>Section 7, Starting a VTD Project</b>.</p> |
| <p><b>Step 7</b></p> | <p>In this example, the GUPS project San Francisco County California loaded successfully.</p>   |

| Step | Action and Result   |
|------|---|
|      |  <p>The screenshot shows the QGIS 2.8.3 interface. The main map window displays a map of San Francisco with several voting districts highlighted in different colors: a green district labeled '04140 VOTING DISTRICT', a blue district labeled '06216 VOTING DISTRICT', a purple district labeled '07265 VOTING DISTRICT', and a pink district labeled '10814 VOTING DISTRICT'. The layers panel on the left shows a tree view of the project's layers, including 'working_county', 'edges_06075', 'vtd2010_06075', 'vtdcurrent_06075', 'tracts2010_06075', 'blockgroups_06075', 'tabblock2010_06075', and 'pointtm_06075'. The status bar at the bottom indicates the coordinate system as EPSG:4269 (CTF).</p> |

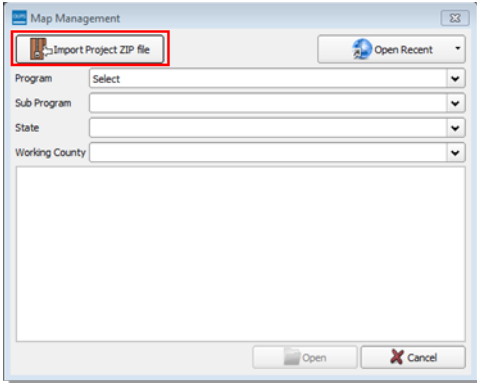
**Table 7: Opening an Existing Project in GUPS**

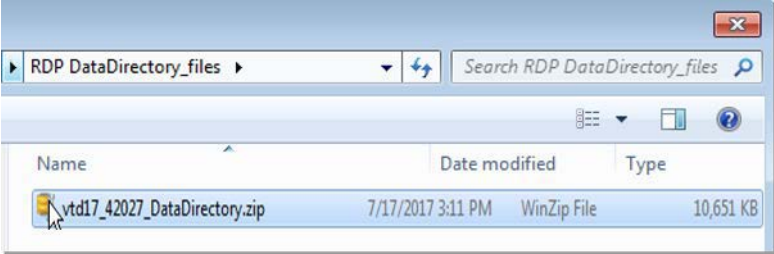
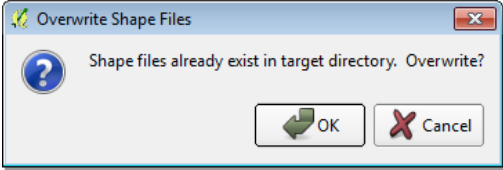
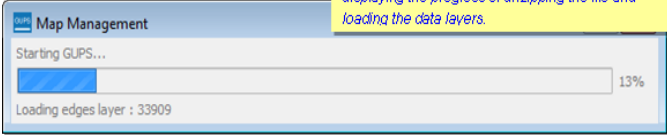
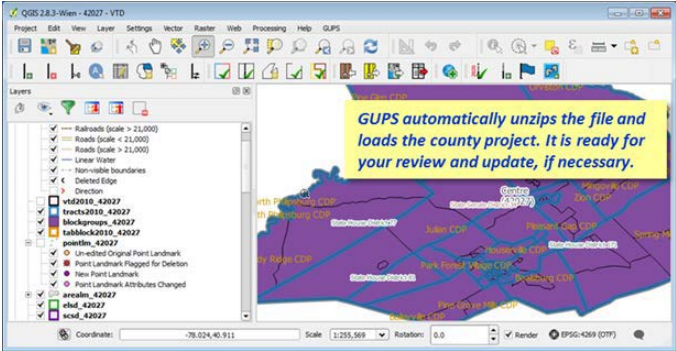

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 1</b></p> | <p>In the Map Management window, click on the <b>Open Recent</b> drop-down menu.</p>  <p>The screenshot shows the 'Map Management' dialog box. The 'Open Recent' menu is open, displaying a list of recent projects: 'H:/GUPSGIS/gupsdata/VT017/project/42027.qgs' and 'H:/GUPSGIS/gupsdata/VT017/project/06075.qgs'. The dialog box also includes fields for 'Program', 'Sub Program', 'State', and 'Working County', and 'Open' and 'Cancel' buttons at the bottom.</p> <p>Choose the project from the list of projects in the directory. This example shows 2 projects. The drop-down list includes all previous projects, with the most recent one at the top of the list. GUPS automatically creates the project name as the State/County code each time you save a project file.</p> <p>You can also select the Program, State, and County and the existing project will open.</p> |
| <p><b>Step 2</b></p> | <p>GUPS automatically loads your previous project. The map view defaults to the view when you last saved your project, and displays any layer symbology changes you made in the project.</p>  |

| Step | Action and Result  |
|------|--|
|      |  |

If you are working with someone you may want to share projects. The instructions below assume another user has started a project and exported it to share with you. Instructions for exporting the project are in **Section 8.8.3 Table 59**.

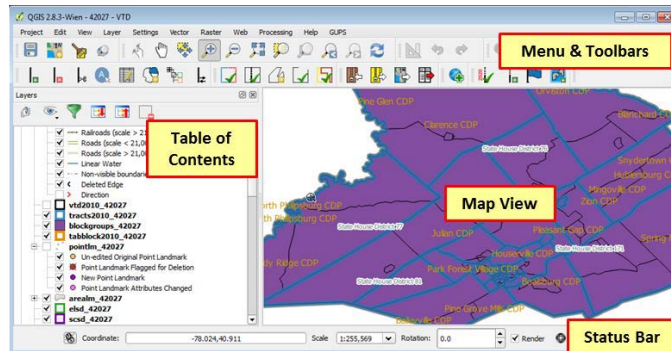
**Table 8: Importing a GUPS Project Someone is Sharing with You for Review in GUPS**

| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 1</b></p> | <p>In the Map Management window, click on the <b>Import Project Zip file</b> button.</p>   |
| <p><b>Step 2</b></p> | <p>Navigate to the folder directory where you have saved the file being shared with you. Click on the <b>vtd&lt;yy&gt;_&lt;ssccc&gt;_DataDirectory.zip</b> file name (that is the naming convention GUPS uses when exporting the project to share with another participant, with &lt;yy&gt; varying depending on when the project was created) and click the <b>Open</b> button at the bottom of the Windows Explorer window. <b>Note:</b> You cannot open files exported for Census submission using this tool.</p> |

| Step  | Action and <i>Result</i>   |
|---|--|
|   |    |
| <b>Step 3</b>   | <p>When you import a file, you may receive a confirmation dialog box to overwrite existing shapefiles. This message appears if you have previously loaded the shapefiles for the same county. <b>Note:</b> If you want to keep your existing files, please move them to a different location on your computer before importing the new file.</p>  <p>Click the <b>OK</b> button to import the file for review.</p> |
| <b>Step 4</b>   |  <p>The Map Management status bar opens, displaying the progress of unzipping the file and loading the data layers.</p>  |
| <b>Step 5</b>   |  <p>GUPS automatically unzips the file and loads the county project. It is ready for your review and update, if necessary.</p>   |
|  | <p><b>Do not save the zip files you receive in the \shape folder in the home directory (i.e. C:\Users&lt;username&gt;\GUPSGIS\gupsdata\VTD&lt;yy&gt;\shapel. You must save zip files in a different directory on your computer for GUPS to recognize and import the zip files.</b></p>   |

## 6.2 VTD Page Layout

**Figure 1** below illustrates the GUPS page layout. The page components include the Menu & Toolbars, the Map View, the Table of Contents, and the Status Bar.



**Figure 1: GUPS Page Layout**

### 6.2.1 Map View

This area displays the map of the data layers automatically loaded and displayed by GUPS for the program you selected in Map Management. You can turn layers on and off, adjust their symbology, pan around the map or zoom in and out. The map and the table of contents are interdependent: changes you make in the table of contents are reflected on the map.

### 6.2.2 Menu and Toolbars

The GUPS user interface includes a menu bar and toolbars at the top of the page window, as shown in **Figure 2**. The menu bar at the very top allows you to access GUPS features using a standard hierarchical menu. The Standard toolbar in the middle provides basic map navigation and data query and editing tools. The VTD toolbar at the bottom provides software functions to support the Voting District Project.

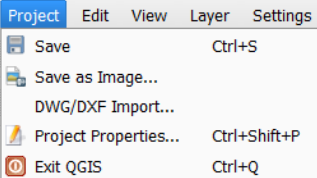
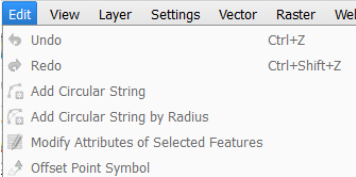
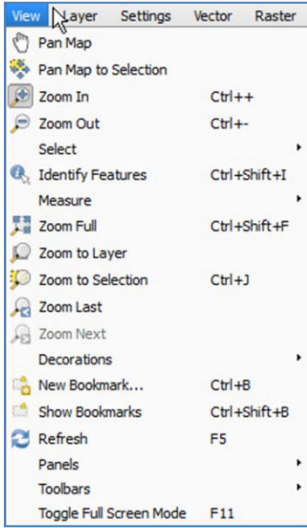


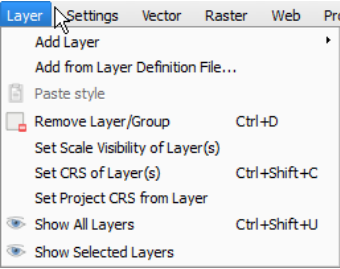
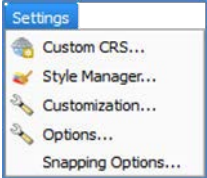
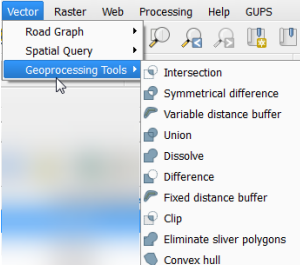
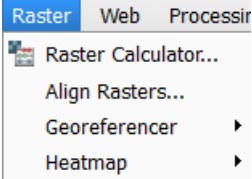
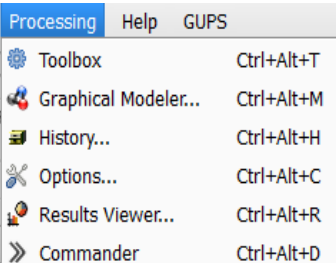
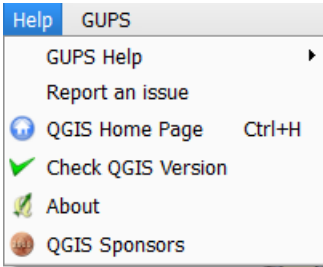
**Figure 2: GUPS Menu and Toolbars**

### 6.2.3 Menu Bar

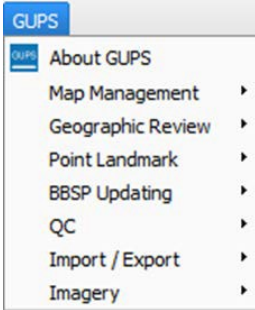
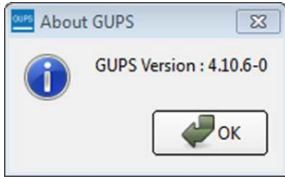
The menu bar allows you to access GUPS using a standard hierarchical menu. The top-level menu, drop-down menus, and menu functions are listed below. Note that while all of these tools are available to you, you will not need to utilize many of them to conduct your VTDP work.

**Table 9: GUPS Menu Bar**

| Tab                   | Drop-down Menu  | Function / Description   |
|-----------------------|---|--|
| <p><b>Project</b></p> |    | <p><b>Project</b> allows you to save a project, create a .png file of the image displayed in the <i>Map View</i>, modify project properties, or exit the GUPS application.</p>   |
| <p><b>Edit</b></p>    |    | <p><b>EDIT</b> allows you to <i>UNDO</i> and <i>REDO</i> the last user actions, as long as you have not saved your project.</p> <p><b>Note:</b> For <i>UNDO</i> to work, the correct layer must be selected in the <i>TABLE OF CONTENTS</i>. For example, if you added a linear feature in the edges layer, then made updates in the area landmarks layer, <i>UNDO</i> will not allow you to delete the linear feature. You must make the edges layer the active layer again to undo the linear feature addition.</p> <p>The Edit menu also now includes an option for modifying layer attributes of selected features.</p>  |
| <p><b>View</b></p>    |  | <p>The <b>View</b> tab allows you to complete several actions also available on the <b>Standard toolbar</b>. Included are options for navigating the map, identifying feature attributes, measuring distance, and creating spatial bookmarks to return to the same map view at a later time.</p> <p>From this location you can also:</p> <ul style="list-style-type: none"> <li>• Set what toolbars display.</li> <li>• Restore the <b>Table of Contents</b> if you earlier closed it (click 'Panels' in the drop-down menu, click the right arrow, click 'Layers' in the Layers down-menu).</li> <li>• Refresh the map to restore it to the original map extent.</li> </ul> |

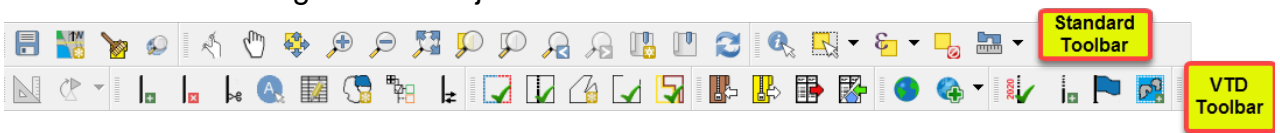
|                          |   |   |
|--------------------------|---|---|
| <p><b>Layer</b></p>      |    | <p>The <b>Layer</b> tab allows you to add and remove layers from the map, Set Coordinate Reference System (CRS) of Layer(s), and Show All or Selected Layers.<br/> <b>Note:</b> Many of these same functions are more conveniently located on the <b>Add Layers toolbar</b> and the small toolbar that sits at the top of the <b>Table of Contents</b>.</p> |
| <p><b>Settings</b></p>   |    | <p><b>Settings</b> allows you to customize the Coordinate Reference System (CRS), customize map display options, and set snapping tolerances.</p>   |
| <p><b>Vector</b></p>     |    | <p>The <b>Vector</b> tab provides access to several Geoprocessing Tools, which allow you to create buffers around features; overlay areas so that you can create an intersection, union, or symmetrical difference; merge features, and perform other common geoprocessing actions.</p>   |
| <p><b>Raster</b></p>     |  | <p><b>Raster</b> includes tools for working with raster data, including a Raster Calculator that allows you to perform calculations on the basis of existing raster pixel values.</p>   |
| <p><b>Processing</b></p> |  | <p><b>Processing</b> menu options pertain to algorithms, creating models, viewing the results of algorithms executed, and history.</p>  |
| <p><b>Help</b></p>       |  | <p>The <b>Help</b> tab provides tools for understanding QGIS (the open-source platform on which GUPS was developed) and the GUPS application itself. It also contains CRVRDO contact information, access to the online version of this guide, and other information.</p>  |



|             |   |  |
|-------------|---|--|
| <b>GUPS</b> |  | <p>The <b>GUPS</b> tab provides quick access to the key tools also available on the <b>Standard</b> and <b>VTD</b> toolbars, including those needed to manage maps, make linear changes, make area changes, update VTDs, review and validate work, import county zip files from other users, export work and submission files, export maps, and add imagery.</p> |
|             |  | <p>Click the '<b>About GUPS</b>' option in the drop-down menu to find the GUPS version number. If you call for technical support, you will need to supply this number. Here the version number is 4.10.6-0. The number you see will be more recent.</p>  |

## 6.2.4 Toolbars

There are two toolbars for GUPS, as shown in **Figure 3**. The top toolbar is the Standard toolbar, which provides map navigation and data query and manipulation tools. The VTD toolbar on the bottom provides the functionality needed for the Voting District Project.



**Figure 3: GUPS Toolbars**

You can resize the toolbars and reposition them by dragging them to your desired location. They can float on the desktop or be docked along the outer edges of the GUPS page. The Standard toolbar and VTD toolbar buttons, names, and functions are highlighted in separate sections below. Hover your mouse over a button when you are in the GUPS application to see the tool description.

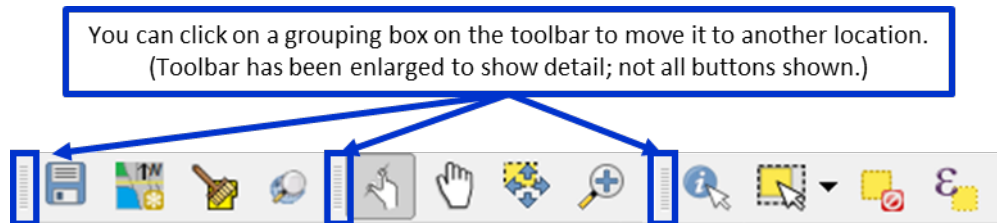
## 6.2.5 Standard Toolbar Functions

The Standard navigation toolbar, shown in **Figure 4** provides the tools necessary to interact with the map and layers' attribute tables. It is comprised of three separate toolbars, identified by the grouping bars on the tool, as shown in **Figure 5**. The first toolbar contains the buttons for saving projects, managing GUPS data, changing GUPS projects, and conducting searches; the second contains the tool buttons for map navigation; the third provides tools for selecting features, making measurements, creating spatial bookmarks, and working with the layers'

attribute tables. The Standard toolbar buttons, names, and functions are shown in **Table 10**.






















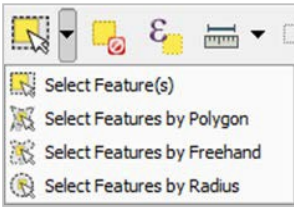



**Figure 4. Standard Toolbar**




**Figure 5. Toolbar Groupings**

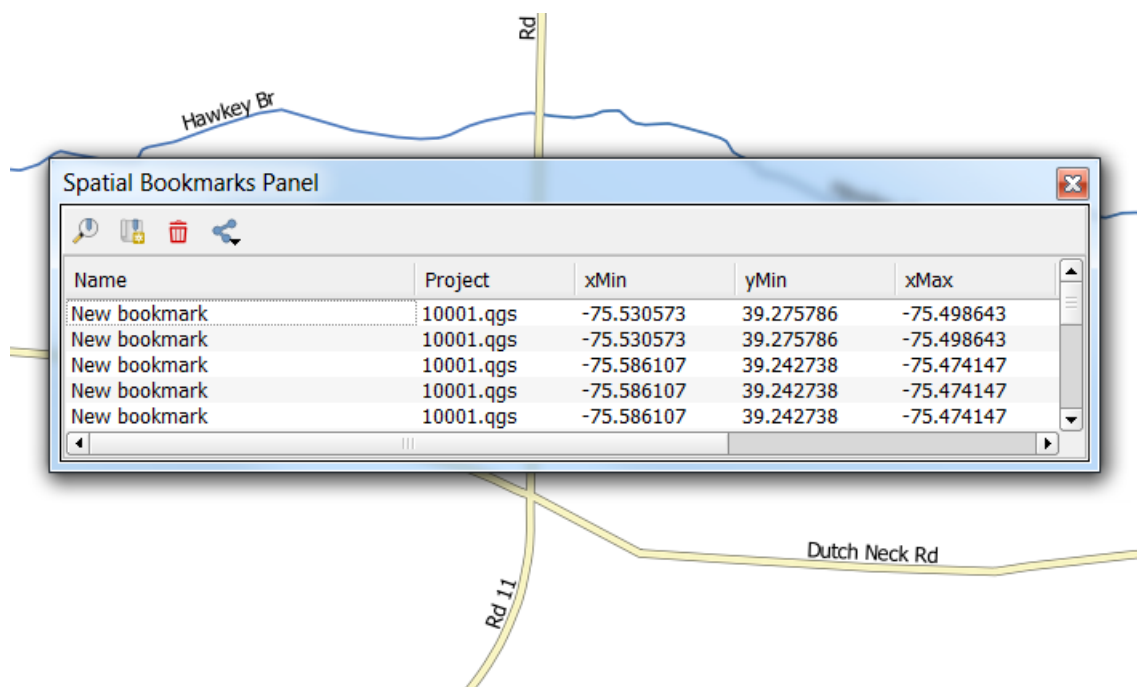
**Table 10: Standard Toolbar Grouping**

| Button  | Name                 | Function   |
|---|----------------------|--|
|    | Save                 | Saves the current GUPS county project, including any user changes to layer properties, projection, last viewed extent, and layers added.   |
|  | Map Management       | Allows you to choose the geographic program and working county in GUPS. Automatically loads the default map display layers based on program and county chosen.   |
|  | GUPS Data Settings   | Allows you to change the location where your GUPS folder (data) and GUPS logs will be stored, delete all files and folders associated with a project or projects, and quickly open your GUPS folder, no matter where it is located. For more information on this tool please see <a href="#">Section 8.7.1</a> . |
|  | Search               | Allows you to search the map by place, census tract, block, landmark or street name, and zoom to the feature.  |
|  | Touch Zoom and Pan   | Designed for touchscreen computers. You can zoom in and out on the map to increase or decrease the map scale with finger gestures.   |
|  | Pan Map              | Shifts the map in the display window without changing the map scale.   |
|  | Pan Map to Selection | Shifts the map in the display window to the rows selected in the attribute table.  |




| Button  | Name                                | Function   |
|---|-------------------------------------|--|
|    | Zoom In                             | Displays the map in the window at a larger scale.  |
|    | Zoom Out                            | Displays the map in the window at a smaller scale.   |
|    | Zoom Full                           | Zooms the map view to the full extent of the county.   |
|    | Zoom to Selection                   | Zooms the map view to the rows selected by in the attribute table.   |
|    | Zoom to Layer                       | Zooms the map view to the extent of the active layer.  |
|    | Zoom Last                           | Zooms the map view to the previous map extent.   |
|    | Zoom Next                           | Zooms the map view forward to the next map extent.   |
|    | New Bookmark                        | Enables user to create and name a spatial bookmark of the current map view.  |
|  | Show Bookmarks                      | Displays all bookmarks.  |
|  | Refresh                             | Displays map view to initial full display.   |
|  | Identify Features                   | Identifies the geographic feature on which you click.  |
|  | Select Features                     | Enables you to select layer features in the map window with a single click, dragging a box, or drawing graphics on the screen.<br> |
|  | Select Features Using an Expression | Allows attribute table records request by querying the table based on table fields and/or values in the fields.  |
|  | Deselect Features from All Layers   | Deselects selected features from all layers.   |
|  | Measure                             | Provides options to measure linear distance, area, and angles on the map.  |

A click on the  **New Bookmark** button allows you to create and save geographic locations in your map view and return to them later. To create a **bookmark**:

1. Zoom or pan to the area of interest in the map view.
2. Click on the  **New Bookmark** button. *The Spatial Bookmarks Panel appears.*
3. Click on the line that has “New Bookmark” as the name. Backspace over “New Bookmark” to delete that text and enter a descriptive name for the bookmark (up to 255 characters).
4. Close by panel by clicking on the red X.



**Figure 6. Map View Bookmark**

A click on the  **Show Bookmarks** button on the toolbar allows you to view and manage your spatial bookmarks. To zoom to a bookmark, double click on a bookmark name in the **Spatial Bookmarks Panel** box or select the bookmark and then click the **Zoom to**  button. To delete a bookmark, click on the bookmark name, then press the **Delete**  button.

## 6.2.6 VTD Toolbar

The VTD toolbar provides the software functionality to complete the activities outlined for the VTDP. Detailed explanations for using the individual buttons are contained in the table below.

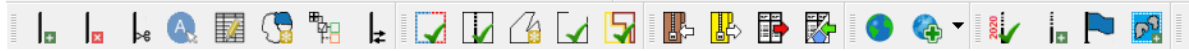


























Figure 7. VTD Toolbar

Table 11: VTD Toolbar Buttons, Names, and Functions












| Button  | Name                             | Function  |
|---|----------------------------------|---|
|    | Add Linear Feature               | Enables user to add a linear feature.   |
|    | Delete Linear Feature            | Enables user to delete a linear feature.  |
|    | Split Linear Feature             | Enables user to split a linear feature into two segments in order to modify one of the segments.  |
|    | Display All Names                | Displays all names for a street with multiple names assigned in the MAF/TIGER System.   |
|   | Modify Linear Feature Attributes | Enables user to edit attributes for a selected linear feature.  |
|  | Modify Area Feature              | Enables user to select faces (polygons) for adding and deleting area to/from area landmarks, VTDs, congressional and state legislative districts, and legal entities.   |
|  | Show/Hide Legend                 | Shows or hides the legend/Table of Contents.  |
|  | Switch to BBSP/VTD Style         | Enables the user to toggle between the BBSP and VTD symbology. (For use in BBSP Verification.)  |
|  | Review Block Boundary            | Enables user to systematically review edges that have been flagged as Hold, Do Not Hold, or NULL. (Only for use in BBSP Verification.)  |
|  | Geography Review Tool            | Enables user to review the attribute table for all data layers.   |
|  | Review Change Polygons           | Enables user to review the change polygons for voting districts, congressional and state legislative districts, area landmarks, area hydrography, and legal geography updates, and make further updates if necessary. |
|  | Closed Polygon Check             | Validates that all planned block boundary edges and edges flagged as "Must Holds" connect to each other in order to form a closed polygon. (Only for use in BBSP Verification.)                                       |

|   |  |  |
|---|--|--|
|    | VTD Criteria Review                      | Reviews VTDs and returns any areas not assigned to a VTD and any non-contiguous VTDs, CDs, and SLDs, so the user can fix the areas or verify they are correct. |
|    | Import County Zip                        | Enables a user to import another user's Share with Participant zip file into GUPS for review and update.   |
|    | Export to Zip                            | Creates the zip file containing all required data and shapefiles for submission to the Census Bureau, or for sharing between users.                            |
|    | Export Map to Print                      | Enables user to export a printable map in .pdf, png, .tif, or jpeg format.   |
|    | Export Tabular Equivalency File          | Give users the option to export the current VTD layer or export the 2010 VTD layer as a tabular equivalency file.  |
|    | Import Reference File                    | Allows users the option to import a tabular equivalency file or shapefile to create a VTD layer they can then edit.  |
|    | Internet Map Service                     | Opens a separate window showing Google Maps or Bing imagery for the area clicked on the map.   |
|    | Add/Remove Imagery Toggle                | Enables user to add/remove Census supplied imagery to the map view.  |
|   | 2020 Feature Extension Review            | Enables user to systematically review 2020 linear feature extensions and take an action: Hold, Delete, or Ignore. (Only for use in BBSP Verification.)         |
|  | Add Feature Extension                    | Enables user to add a 2020 linear feature extension to create a closed polygon for a suggested 2020 tabulation block. (Only for use in BBSP Verification.)     |
|  | Feature Flagging Tool (Hold/Do Not Hold) | Enables user to assign a "Must Hold" or "Do Not Hold" flag to a linear feature selected in the map window. (Only for use in BBSP Verification.)                |
|  | Add Block Area Grouping                  | Enables user to create a Block Area Grouping over water. (Only for use in BBSP Verification.)  |

## 6.2.7 Add Data Toolbar


The Add Data Toolbar allows you to add vector and raster data layers and import data tables. When you first open the GUPS, the default Add Data Toolbar position is on the left side of the GUPS page layout. You can click and drag the toolbar to one of the top toolbars if you like, which provides more screen space for the map view. **Table 12** lists the Add Data Toolbar buttons, names and functions.

**Table 12: Add Data Toolbar Buttons, Names, and Functions**

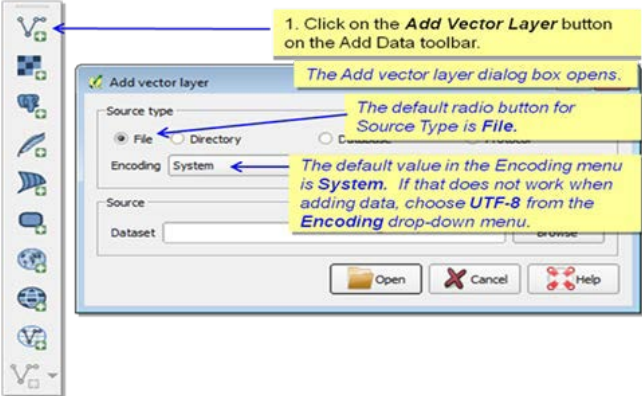
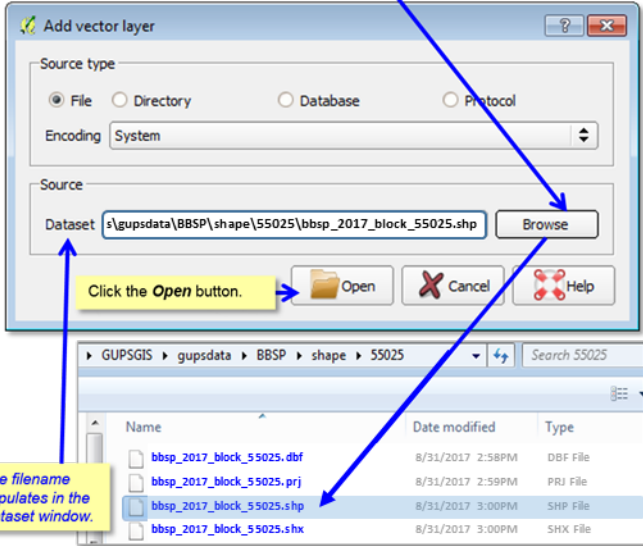
| Button  | Name                       | Function  |
|---|----------------------------|---|
|    | Add Vector Layer           | Enables user to add shapefiles and geodatabase files to the GUPS project.   |
|    | Add Raster Layer           | Enables user to add raster datasets such as imagery.  |
|    | Add SpatialLite Layer      | Enables user to add data from a SpatialLite database.   |
|    | Add PostGIS Layers         | Enables user to add a PostGIS, MSSQL, DB2, or Oracle Spatial layer.   |
|    | Add WMS/WMTS Layers        | Enables user to add Web Mapping Services, Web Mapping Tile Services, and ArcGIS mapserver layers. Publicly accessible and secured WMS services are supported.                                 |
|    | Add WCS Layer              | Enables User to add Web Coverage Services, which provides access to raster data useful for client-side map rendering.   |
|    | Add WFS Layer              | Enables user to add Web Feature Services or ArcGIS FeatureServer Layers.  |
|  | Add/Edit Virtual Layer     | Enables user to add and edit virtual layers, a vector layer defined as the result of an advanced query using the SQL language on any number of other vector layers that QGIS is able to open. |
|  | New Shapefile Layer        |  <p>Enables user to add a new shapefile layer or new temporary scratch layer.</p>                         |
|  | Add Oracle GeoRaster Layer | Enables user to add an Oracle GeoRaster Layer   |

Some of the more commonly used tools from the Add Data Toolbar are described in more detail below.

### 6.2.7.1 Adding Vector Data

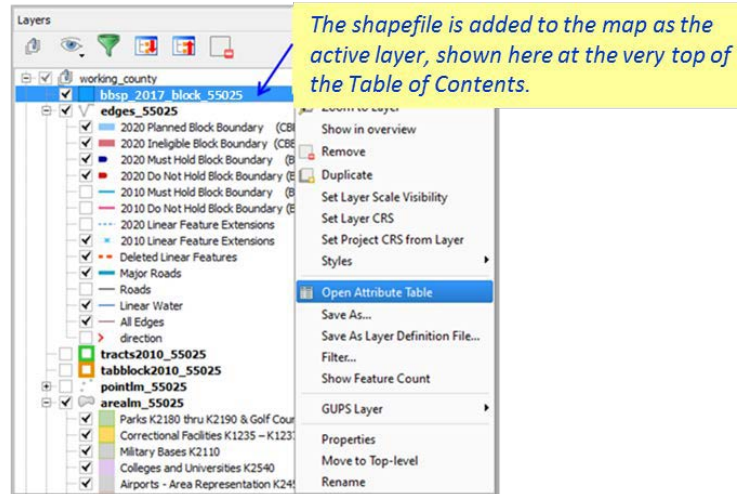
A click on the  **Add Vector Layer** button allows you to add shapefile and geodatabase files to your GUPS project.

**Table 13: Adding a Shapefile (Vector Data)**

| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 1</b></p> |    |
| <p><b>Step 2</b></p> | <p>Click the <b>Browse</b> button. Navigate to the folder where the file you want to add is located.</p>  |



### Step 3



### 6.2.7.2 Adding a Web Mapping Service

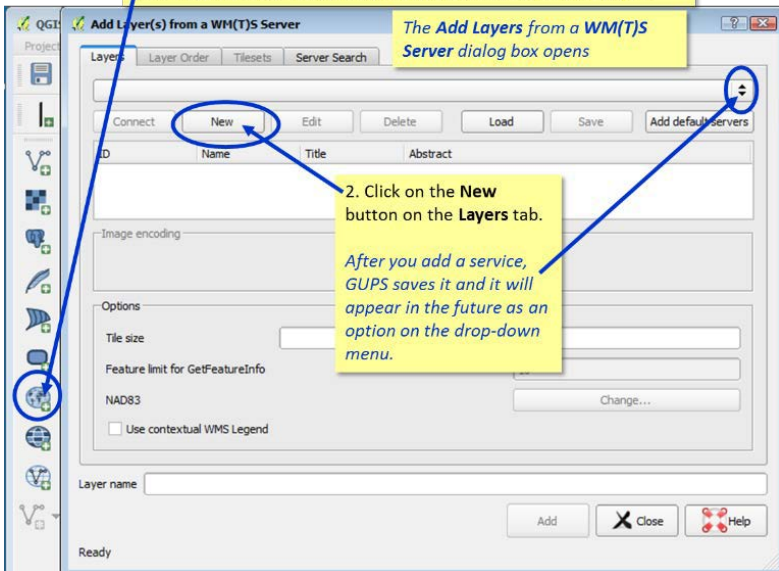
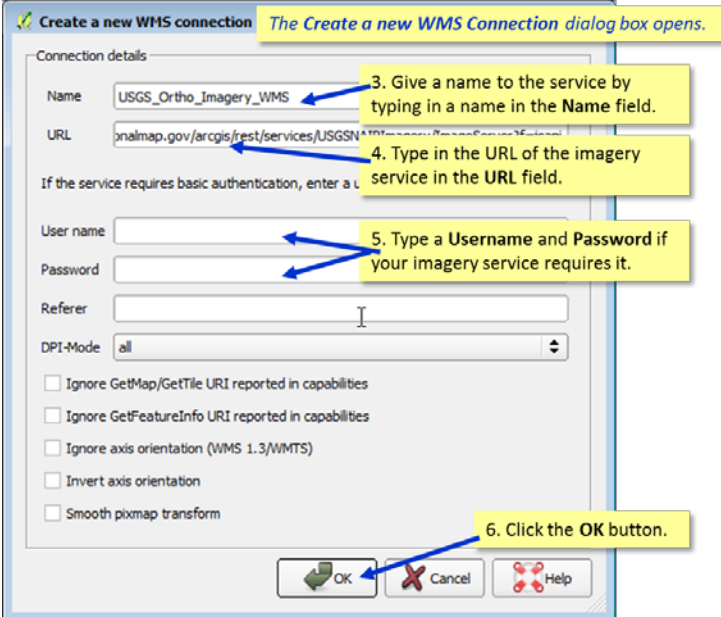

A click on the  **Add WMS/WMTS Layer** button allows you to add a **Web Mapping Service** to your GUPS project.

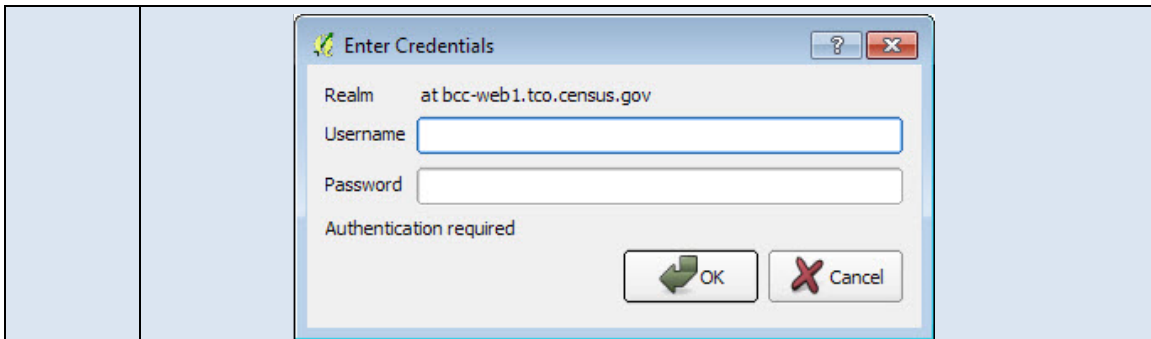
If you are unable to use the Census supplied imagery and you do not have a statewide or county web mapping service, one option for adding imagery may be the National Agricultural Imagery Service (NAIP), supplied in web mapping service format by the U.S. Geological Survey. (You can also add imagery using the **Add Imagery** button on the VTD toolbar.)

Please contact the CRVRDO for more information on accessing this WMS.

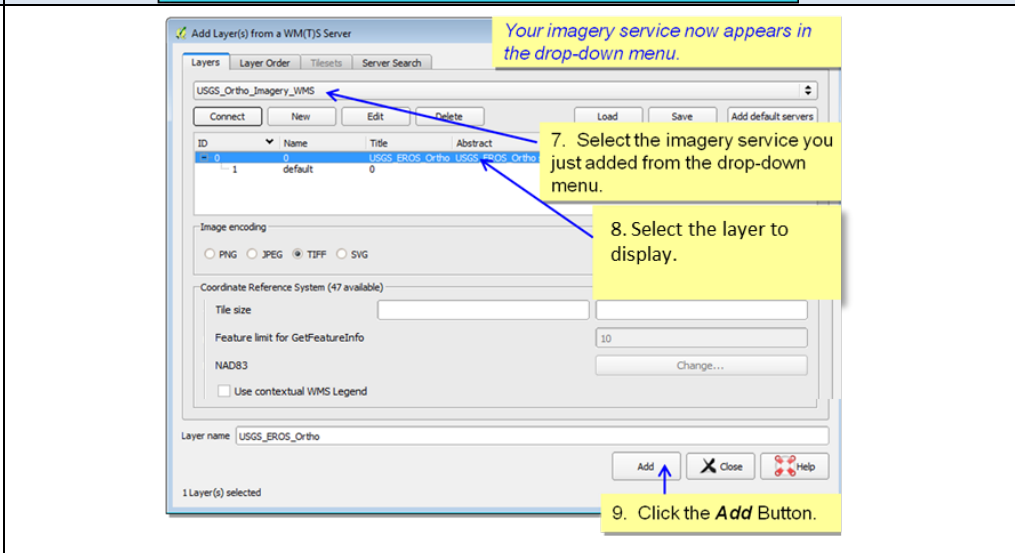
The instructions in **Table 14** below outline the steps for adding a web mapping service to GUPS.

**Table 14: Adding a Web Mapping Service**

| Step  | Action and Result  |
|---|--|
| <p><b>Step 1 through Step 2</b></p>   |    |
| <p><b>Step 3 through Step 6</b></p>   |   |
|  | <p>If your working environment is inside a firewall, you may be prompted for your Username and Password to obtain resources from outside the firewall.</p> |

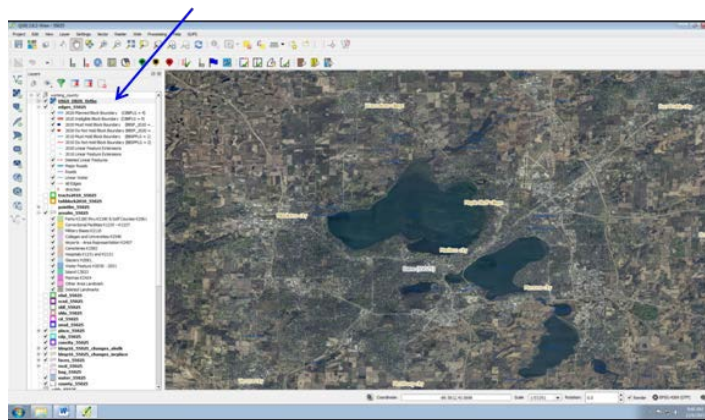


**Step 7 through Step 9**




**Step 10**

The WMS is added to the map. It appears at the top of the Table of Contents, which means it displays over the top of the other layers. You may want to move it to the bottom of the Table of Contents by clicking on the layer name and dragging it to the bottom.



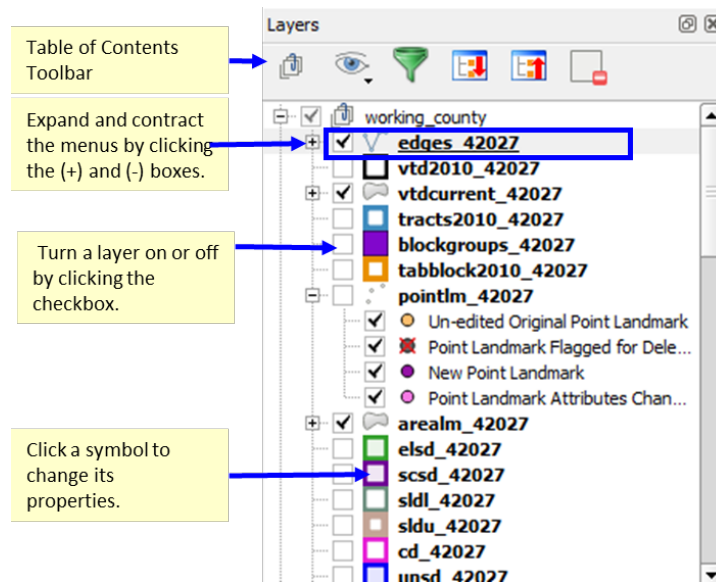
### 6.2.7.3 Adding Raster Imagery

A click on the  **Add Raster Layer** button allows you to add your own raster imagery to your GUPS project if you do not have access to a web mapping service, if you have a poor Internet connection, or a restrictive firewall.

After clicking on the Add Raster Layer button, the Open a GDAL Supported Raster Data Source dialog box opens. Navigate to the folder on your computer where the imagery file is stored. Click on the file name in the window and Open. The imagery loads into the GUPS.

### 6.2.8 Table of Contents (Layers Panel)

The Table of Contents, depicted in **Figure 8**, shows the layers on the map and the features represented by the layer. The GUPS will automatically load and display a set of default data layers defined by the Census Bureau for each geographic participant program. You can reorder the layers to change the map display, add and remove layers, including user-provided data, display or hide layers, and change the layer symbology and labeling. As depicted in **Figure 9**, the expanded edges layer menu displays after clicking on the (+) sign to change it to the (-) sign.



**Figure 8. GUPS Table of Contents**

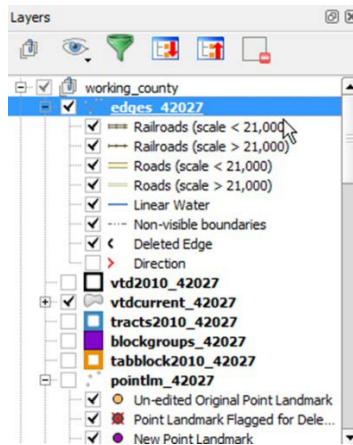


Figure 9. GUPS Table of Contents, Expanded Edges Layer Menu

### 6.2.8.1 Re-ordering the Data Layers

In the **Table of Contents**, the order in which the layers are listed determines how the layers are drawn on the map. The layers at the top draw on top of those below them. A layer can be selected and dragged up or down in the table of contents to change the drawing order.

**To move a layer up or down:** Click on the layer and drag the layer to the desired position in the layer list. Release the mouse button to place the layer in its new position.

### 6.2.8.2 Table of Contents Toolbar

The toolbar buttons at the top of the Table of Contents (Layers Panel), shown in **Figure 10**, allow you to add and remove layers or groups, manage layer visibility, filter the legend by map content, and expand and contract the menus by clicking on the (+) and (-) symbol.

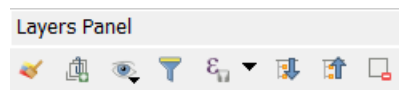













Figure 10. Table of Contents (Layers Panel) Toolbar

Table 15: Table of Contents Toolbar Buttons, Names, and Functions

| Button  | Name                        | Function   |
|---|-----------------------------|--|
|  | Open the Layer Styling Dock | Allows the user to select a layer and change its rendering and display properties. |
|  | Add Group                   | Allows layers in the Table of Contents to be organized into groups.                |



|   |  |  |
|---|--|--|
|    | Manage Layer Visibility (and Preset Views) | Allows preset layer views created by the user. See <b>Section 6.2.8.4</b> for more details.  |
|    | Filter Legend by Map Content               | Displays in the Table of Contents only the map layers in the current map view. You can remove from the Table of Contents display any layers that are not currently in the map view extent by clicking on the  button. |
|    | Filter Legend by Expression                | Allows the user to display in the Table of Contents only the map layers specified in Boolean expression.   |
|    | Expand All (+)                             | Expands to show all menus. You can display all layers in all groups by clicking on the  button on the Table of Contents toolbar.  |
|    | Collapse All (-)                           | Collapses all menus. You can turn off the visibility of layers in a group by clicking on the  button on the Table of Contents toolbar.  |
|  | Remove Layer/Group                         | Removes layer or group from the Table of Contents.   |

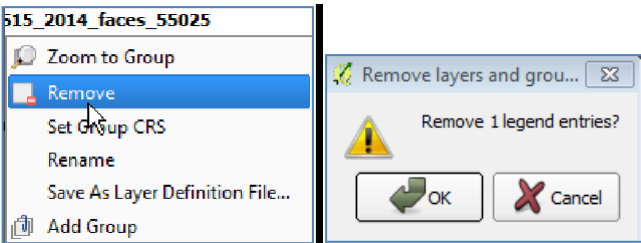
More information on using some of these tools is provided in **Section 6.2.8.3** below.

### 6.2.8.3 Add Group

To organize layers in the **Table of Contents** into groups and manage the group contents, follow the steps in **Table 16** below.

**Table 16: Organize Layers in the Table of Contents**

| Step  | Action and Result   |
|---|---|
| <b>Step 1</b>   | Click on the <b>Add Group</b>  button on the <b>Table of Contents</b> toolbar. <i>A new group appears automatically in the <b>Table of Contents</b>.</i> |
| <b>Step 2</b>   | Type in a name for the group and press the <b>Enter</b> key. Then, click on an existing layer and drag it into the group just created.  |
|  | You may now <b>show or hide all the layers in the group</b> with a single click on the plus or minus sign next to the group's checkbox.   |

|               |  |
|---------------|--|
| <b>Step 3</b> | <b>To remove a layer</b> from a group, click on the layer and drag it out of the group or right-click on the layer and choose <i>Move to Top Level</i> . Then drag the layer where you want it in the <b>Table of Contents</b> list.   |
| <b>Step 4</b> | <b>To select more than one layer or group at the same time</b> , hold down the <b>CTRL</b> key while selecting the layers with the left mouse button.  |
| <b>Step 5</b> | <p><b>To delete a group</b>, right-click on the group and select 'Remove' in the drop-down menu. Then click the <b>OK</b> button when prompted.</p>  |

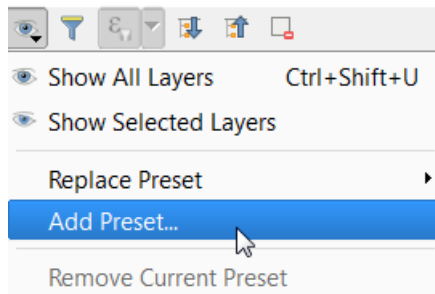
#### 6.2.8.4 Manage Layer Visibility



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**.

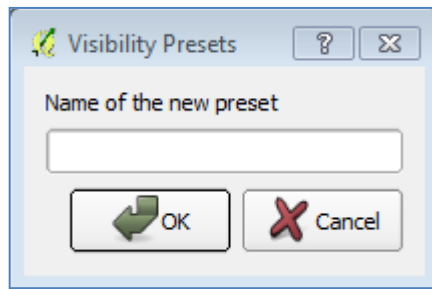
To add a preset view:

- Click on the **Manage Layer Visibility** button and choose 'Add Preset...' from the drop-down menu.



**Figure 11. Add Preset Layer**

- When the **Visibility Presets** pop-up appears, enter the name of the new preset and click the **OK** button.



**Figure 12. Visibility Presets Pop-up Screen**

---

**Note:** 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.

---

### 6.2.8.5 Remove Layer/Group



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

- Left-click on the layer/group you want to remove, hold down the **CTRL** key, and click the **Remove a Layer** or **Group** button. The layer/group is removed. **OR**
- Right-click on the layer name and select '**Remove**' in the drop-down menu.

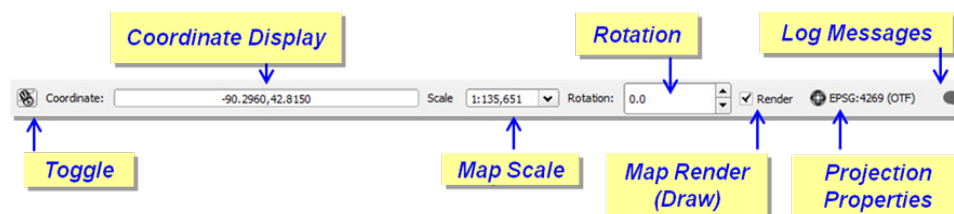
---

**Note:** Some of the same functions handled by the **Table of Contents** toolbar can also be carried out using the **Layer tab** on the **Menu**, located at the top of the GUPS main page.

---

### 6.2.9 Status Bar

The Status Bar, as shown in **Figure 13**, displays information about the map. It allows you to adjust the map scale and see the mouse cursor's coordinates on the map. **Table 17** lists the Status Bar elements and their descriptions and functions.



**Figure 13. Status Bar**



**Table 17: Status Bar Element and Function/Description**

| Status Bar Element    | Function/Description   |
|-----------------------|--|
| Toggle                | Allows you to toggle between the mouse's coordinate position, or the map view extents as you pan and zoom in and out on the map.   |
| Coordinate Display    | Shows your current position in map coordinates (default is decimal degrees for GUPS) as your map cursor is moved across the map. You can also enter X, Y coordinates to navigate to an area. |
| Map Scale             | Shows the current map scale.   |
| Magnifier             | Allows you to zoom in on the mapview   |
| Rotation              | Allows you to define a current clockwise rotation for the map view in degrees.   |
| Map Render (Draw)     | Allows you to temporarily prevent layers from drawing by clicking the checkbox immediately to the left of "Render".  |
| Projection Properties | Allows you to open the projection properties for the current map.  |
| Log Messages          | Allows you to display three tabs that contain messages about the GUPS application launch, python scripting, and the QGIS plug-ins developed for GUPS.  |

## Section 7. Starting a VTD Project

---

Once you have set up your project (selected the program and downloaded the county data using the Map Management tool as described in **Section 6**), the **Import Working File** box will appear. You can choose to create your working VTD layer file – the file you will update with the current VTD boundaries – from a tabular equivalency file, your own VTD shapefile, or you can create a blank VTD layer. Which method to use will depend on your situation. All four are described below.

### 1. Create New Blank VTD Layer:

Creating your working VTD layer from a blank slate is a good option if you do not have a shapefile or tabular equivalency file defining the current VTDs.

See **Table 19: Create New Blank VTD Layer** for instructions on how to start a project using the Create new blank VTD layer option.

### 2. Import Tabular Equivalency File:

Creating your working VTD layer from your own tabular equivalency file (TEF) is a good option if you have a text file that defines what 2010 Census blocks comprise your current VTDs. Be aware that 2010 Census block boundaries may have been reshaped since 2010 in an effort to improve spatial accuracy and may not appear exactly as they did in 2010 Census data products. Therefore, you should review the depiction of your VTDs in GUPS after you import the TEF and resolve any unassigned areas to ensure your VTDs appear as expected.

In order for GUPS to convert your TEF to a working VTD layer shapefile, the TEF must include a unique identifier code for the 2010 tabulation blocks (include state, county, tract and block codes) and the VTD code for the VTD that block is assigned to. GUPS will accept that information in three different comma delimited TEF formats: Simple TEF, GEOID TEF and Extended TEF. The headers (fields) and an example format for each file type are shown in **Table 18. Three Types of Tabular Equivalency Files**.

- **Simple TEFs** have the state codes, county codes, tract codes, block codes, voting district codes and name information separated from each other by commas.
- **GEOID (Geographic Identification Code) TEFs** have the state, county, tract, and block codes concatenated into one 15 digit code (the GEOID), separated by a comma from the VTD code and separated by another comma from the name.
- **Extended TEFs** have the state, county, tract, block, and Voting District codes concatenated into one 21 digit code (the Extended GEOID), separated by a comma from the name.

**Table 18. Three Types of Tabular Equivalency Files**

| Tabular File  | Headings  | Example  |
|---|---|--|
| Simple TEF  | ST, COU, TRACT, BLOCK, VOTING DISTRICT, NAMELSAD      | 01, 001, 000001, 0001, 000001, Example Voting District |
| GEOID TEF   | GEOID (ST+COU+TRACT+BLOCK), Voting District, NAMELSAD | 010010000010001, 000001, Example Voting District       |
| Extended TEF  | Extended GEOID (GEOID+ VTD), NAMELSAD                 | 010010000010001000001, Example Voting District         |
| ST=2 digit state code, COU=3 digit county code, TRACT=6 digit tract code, BLOCK=4 digit 2010 tabulation block code, VOTING DISTRICT=6 character VTD code, NAMELSAD=the (up to) 120 character name combined with the legal/statistical area definition (LSAD). |   |  |

---

**Important!** Importing tabular equivalency files can take a few minutes to build, depending on the size of the area or if GUPS needs to pad the VTD Code field with zeros. The VTD code field is now required to be six digits. If you supply a tabular equivalency file that does not have six digits for your VTD code (i.e., your VTD code was 1), GUPS will pad the code with zeros (i.e., 000001).

---

See **Table 20** for instructions on how to start a project using the Import Tabular Equivalency File option.

---

**Note:** If you have a tabular equivalency file defining what 2010 Census blocks comprise VTDs for your entire state, please contact us at [rdo@census.gov](mailto:rdo@census.gov) or 301-763-4039 for other submission options.

---

### 3. Import VTD Shapefile:

Creating your working VTD layer from an imported shapefile is good option if you have a shapefile that depicts your current VTDs. Note that GUPS conflates your VTD shapefile to align with Census geography, so you should review the depiction of your VTDs in GUPS, and resolve any unassigned areas to ensure they appear as expected.

---

**Important:** Importing VTD shapefiles can take a few minutes to build, especially if you are in a large area.

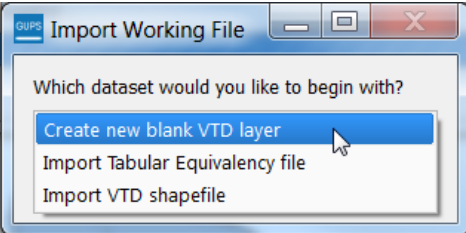
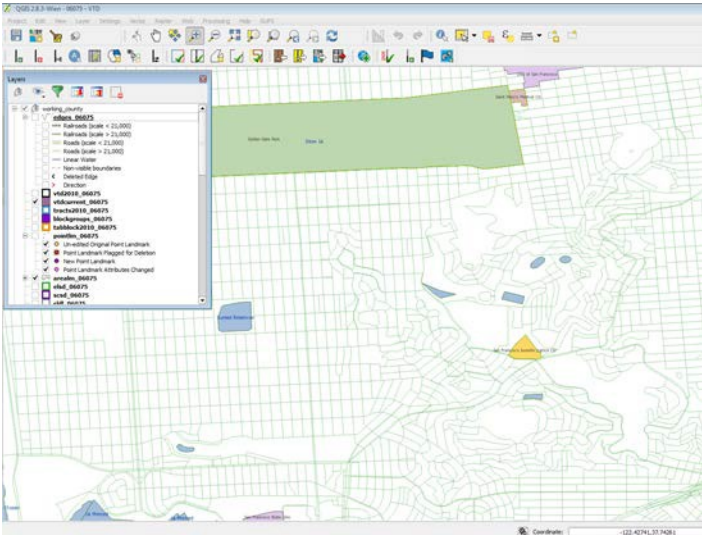
---

See **Table 21** for instructions on how to start a project using the Import VTD Shapefile option.

If you chose to start your project by importing a TEF or your own VTD shapefile, when your project loads, your imported file becomes the current VTD layer. If you chose to start with a blank VTD layer, GUPS will still create a vtdcurrent\_<ssccc> shapefile, but it will be empty.

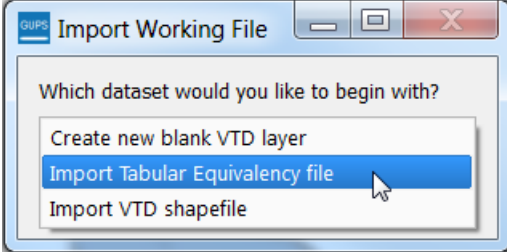
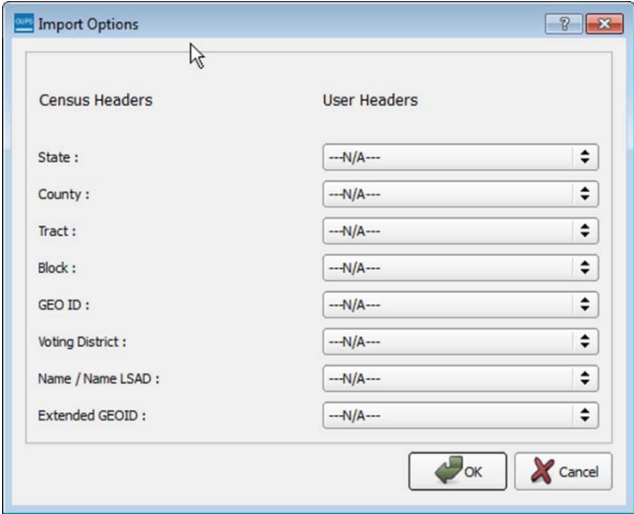
## 7.1 Create New Blank VTD Layer

Table 19: Create New Blank VTD Layer

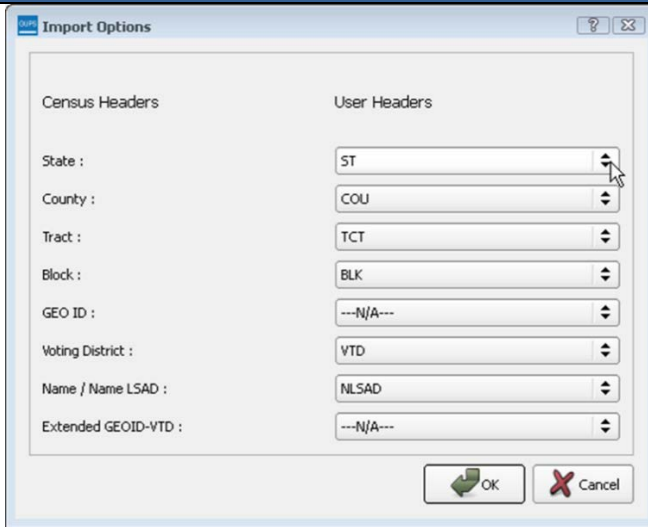
| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 1</b></p> | <p>Select the <b>Create new blank VTD layer</b> from the <b>Import Working File</b> map drop-down menu and click <b>OK</b>.</p>    |
| <p><b>Step 2</b></p> | <p>The working VTD layer, named vtdcurrent_&lt;ssccc&gt;, will be added to the Table of Contents. This layer will be blank. You are now ready to start your updates/edits on the blank (vtdcurrent_&lt;ssccc&gt;) map. Go to <b>Section 8</b> for instructions on how to create and edit your VTDs.</p>  |

## 7.2 Import Tabular Equivalency File

Table 20: Import Tabular Equivalency File

| Step          | Action and <i>Result</i>  |
|---------------|---|
| <b>Step 1</b> | <p>Choose the <b>Import Tabular Equivalency file</b> from the drop-down to start your project from a tabular (block) equivalency file.</p> <div data-bbox="631 468 1135 718"></div> <p>Navigate to your TEF file and click <b>Open</b>.</p> |
| <b>Step 2</b> | <p>The <b>'Import Options'</b> dialog box will open.</p> <div data-bbox="573 867 1203 1377"></div>   |
| <b>Step 3</b> | <p>Map the headers (field names) from your imported TEF to the corresponding Census headers. In the example below, the user is importing a Simple TEF where state, county, tract, block, voting district, and Name LSAD are comma delimited and the user's file does not have GEOID or Extended GEOID+VTD in their file.</p>  |

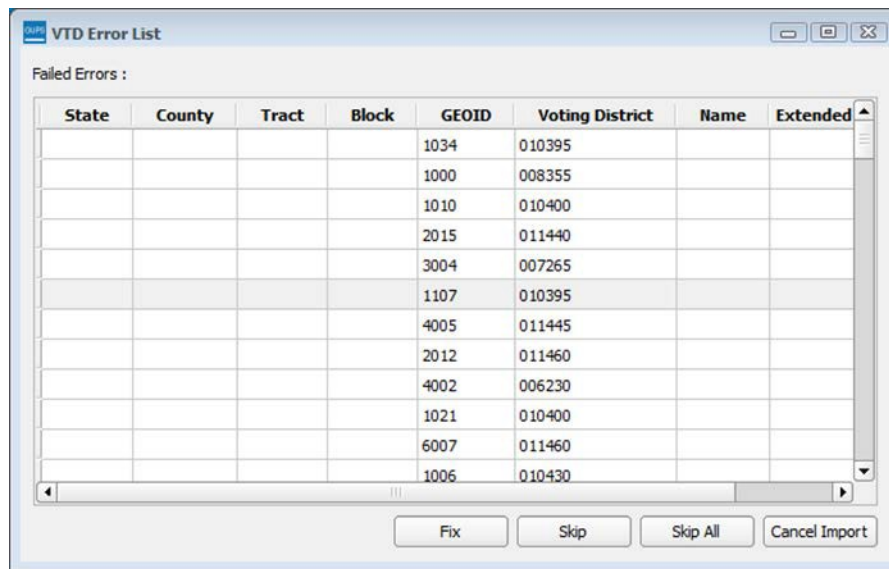
| Step | Action and Result |
|------|-------------------|
|------|-------------------|



Then click **OK**. Building the shapefile from an imported TEF can take a few minutes.

| Step 4 | Action and Result |
|--------|-------------------|
|--------|-------------------|

If GUPS encounters any issues importing any of the records in your TEF, a **VTD Error List** dialog box will open:



To find out what the error is, please select (click) on the record and then click on the **Fix** button. The **VTD Update** box will open and the error will be explained at the top of the box.

| Step | Action and Result |
|------|-------------------|
|------|-------------------|

In this example, the GEOID has four characters in the tabular equivalency file, when there should be 15 characters.

At this point you can choose to correct the GEOID by typing in the correct GEOID and clicking on **OK**, or you can click **Cancel** and then **Skip**. If you skip an error, the faces associated with that GEOID will remain unassigned and will either have to be fixed while you update your VTDs or perform the **Criteria Review Tool Checks**.

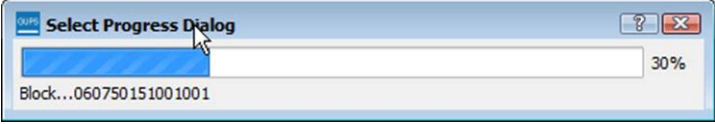
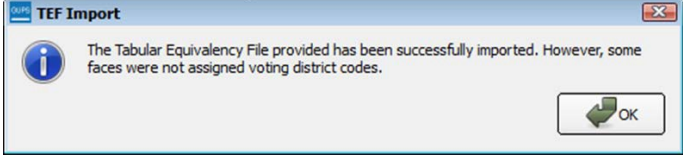
**If you choose to Skip All errors in the VTD Error List:**

The faces associated with the errors will remain unassigned and will either be fixed while you update your VTDs or perform the **Criteria Review Tool Checks**.

You also have the option to choose **Cancel Import** to select a different file.

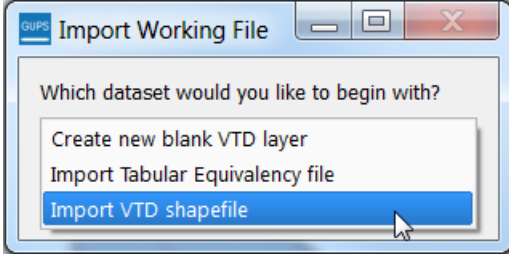
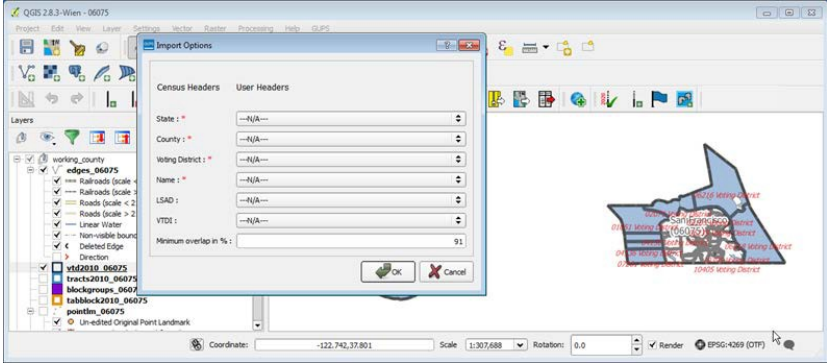
| State | County | Tract | Block | GEOID | Voting District | Name | Extended |
|-------|--------|-------|-------|-------|-----------------|------|----------|
|       |        |       |       | 1034  | 010395          |      |          |
|       |        |       |       | 1000  | 008355          |      |          |
|       |        |       |       | 1010  | 010400          |      |          |
|       |        |       |       | 2015  | 011440          |      |          |
|       |        |       |       | 3004  | 007265          |      |          |
|       |        |       |       | 1107  | 010395          |      |          |
|       |        |       |       | 4005  | 011445          |      |          |
|       |        |       |       | 2012  | 011460          |      |          |
|       |        |       |       | 4002  | 006230          |      |          |
|       |        |       |       | 1021  | 010400          |      |          |
|       |        |       |       | 6007  | 011460          |      |          |
|       |        |       |       | 1006  | 010430          |      |          |

Once you have fixed or skipped all the errors, the **Select Progress Dialog** box will open showing the progress of your file loading. This can take several minutes.

| Step          | Action and Result  |
|---------------|--|
|               |  <p>You will receive the following notification if you either skipped any records in the error list or submitted a TEF that did not have full coverage.</p>  |
| <b>Step 5</b> | <p>The working VTD layer, named <i>vtdcurrent_&lt;ssccc&gt;</i>, built from your TEF, will be added to the <b>Table of Contents</b>. Go to <b>Section 8</b> for instructions on how to create and edit your VTDS.</p>  |

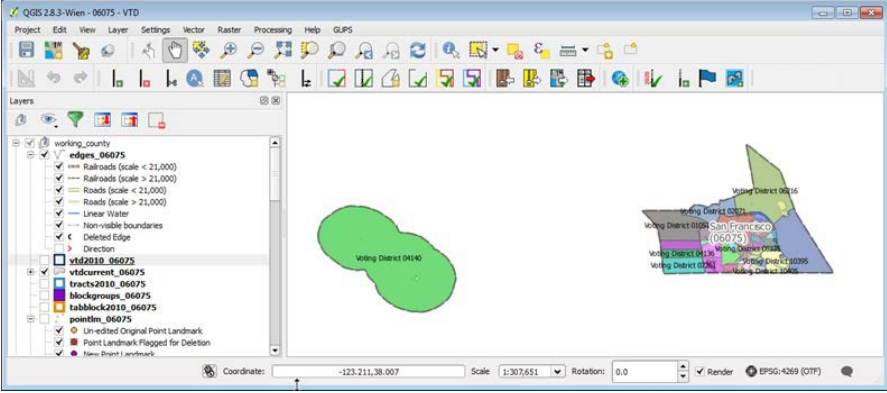
### 7.3 Import VTD Shapefile

Table 21: Import VTD Shapefile

| Step          | Action and Result   |
|---------------|---|
| <b>Step 1</b> | <p>Choose the <b>Import VTD Shapefile</b> from the drop-down menu.</p>                                    |
| <b>Step 2</b> | <p>Navigate to your shapefile and click <b>OK</b>. The <b>'Import Options'</b> dialog box will open.</p>  |




| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 3</b></p> | <p>All Census Headers (fields) with a <b>red asterisk *</b> must be populated. Map the headers from your imported shapefile to the corresponding Census Headers.</p> <p>State = 2-digit state FIPS code</p> <p>County = 3-digit county FIPS code</p> <p>Voting District = VTD code</p> <p>Name = VTD name</p> <p>LSAD = Legal/Statistical Area Description (i.e. whether “Voting District” should appear before the name, after the name, or not at all)</p> <p>VTDI = Voting District Indicator (A = actual; P = Pseudo). This is unusual to see outside of Census Bureau data files.</p> <p>You can also set your minimum overlap percentage, described below:</p> <div data-bbox="456 890 816 1073" style="border: 1px solid black; padding: 5px; background-color: #ffffcc;"> <p>When selecting the <b>Import Shapefile</b> option, GUPS is conflating your shapefile to TIGER data. The minimum overlap value is set to 91%, meaning that the at least 91% of the face in the TIGER shapefile must overlap with the VTD in the imported shapefile, for that face to be assigned to that VTD in the working VTD Layer shapefile generated.</p> </div> <div data-bbox="857 722 1338 1079" style="border: 1px solid gray; padding: 5px;"> </div> <p>Click <b>OK</b>. <i>The VTD current layer will build.</i> This step may take a few minutes based on the amount of information in your imported file.</p> <div data-bbox="469 1167 1317 1537" style="border: 1px solid gray; padding: 5px;"> </div> |
| <p><b>Step 4</b></p> | <p>A working VTD layer, named <i>vtdcurrent_&lt;ssccc&gt;</i> will be added to the <b>Table of Contents</b>. It will be your VTD shapefile conflated to Census Bureau geography. Go to <b>Section 8</b> for instructions on how to create and edit your VTDs.</p>  |

| Step                 | Action and Result   |
|----------------------|---|
|                      |   |
| <p><b>Step 5</b></p> | <p>If there are a large number of gaps (unassigned faces) in your imported vtdcurrent_&lt;ssccc&gt; shapefile, you can delete that file and re-import your shapefile, this time reducing the overlap percentage in the <b>Import Options</b> dialogue box so more faces in the Census data match to the imported shapefile.</p> |

## Section 8. VTD Update Activities in GUPS

Once you have started your project, there are various types of updates you can make. The VTDP allows you to make updates to voting districts, linear features, area landmarks, congressional and state legislative districts, and legal geography (incorporated places, minor civil divisions (MCDs) and counties). The order you wish to make your updates will depend on your situation. For example, you may want to update or add linear features or incorporated place boundaries before updating your VTDs, if you plan to use those incorporated place boundaries or linear features as VTD boundaries.







Updates to linear features can be made with the linear feature update tools described in **Table 11: VTD Toolbar Buttons, Names, and Functions** and





further explained in **Section 8.3**. You will use the **Modify Area Feature Tool**  to make updates to VTDs, area landmarks, congressional and state legislative districts, and legal geographies. In general, updates are made the same way, regardless of the type of geography, or area feature, you are updating. **Section 8.1** describes the basics of how to use the Modify Area Feature Tool to update geography, and **Section 8.2** through **Section 8.6** describes in more detail how to use those tools to update specific geography types.

### 8.1 Using the Modify Area Feature Tool to Update Area Features


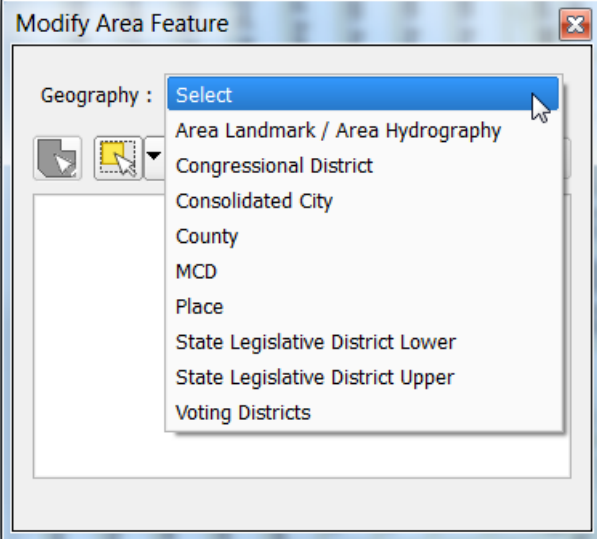
**Table 22** provides a brief description of the buttons within the Modify Area Tool and their functions.

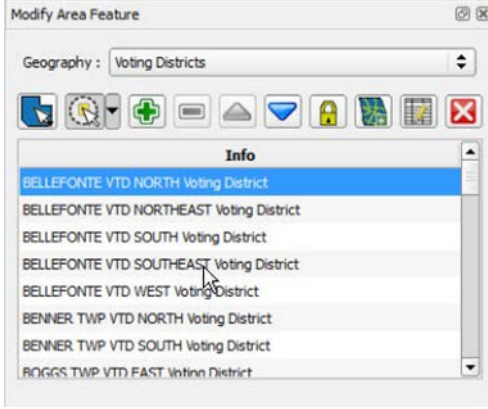

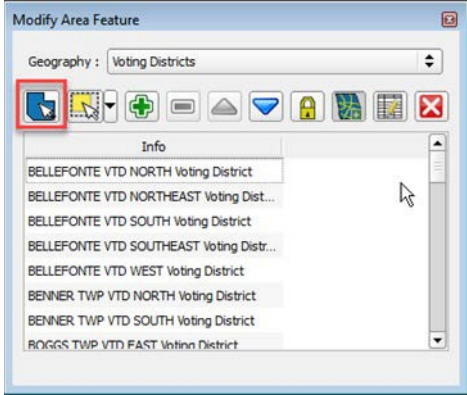
**Table 22: Modify Area Feature Tool Buttons and Functions**

| Button  | Function  |
|---|---|
|  | Select Target Area allows you to select (target) a feature for editing by clicking on it in the map view. |
|  | Select Features allows you to select features by clicking, drawing a polygon, radius, and by geography    |
|  | Add selected faces to the target area.  |
|  | Remove selected faces from target area.   |
|  | Select and zoom to previous entity on the list.   |
|  | Select and zoom to next entity on the list.   |

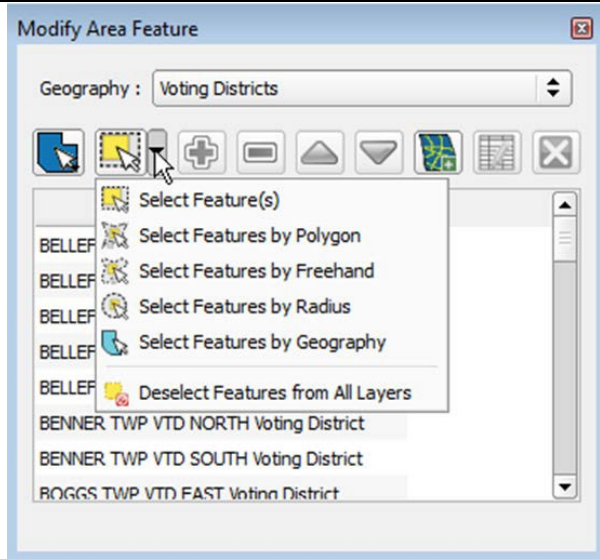
| Button  | Function   |
|---|--|
|  | Add new entity   |
|  | Modify attributes of target area.  |
|  | Toggle tool that allows the user to “lock” or “unlock” a single or all VTDs. When locked, no faces from the VTD can be added to another VTD. When unlocked, faces assigned to VTD can be added to another VTD. |
|  | Delete entity or area feature.   |

**Table 23: Using the Modify Area Feature Tool to Update Area Features**

| Step          | Action and Result  |
|---------------|--|
| <b>Step 1</b> | Click on the <b>Modify Area Feature</b> button in the VTD Toolbar.<br>   |
| <b>Step 2</b> | Select the type of geography you want to update from the drop-down menu in the <b>Modify Area Feature</b> tool.<br><br><i>All entities in the county of that geography type will appear.</i> |

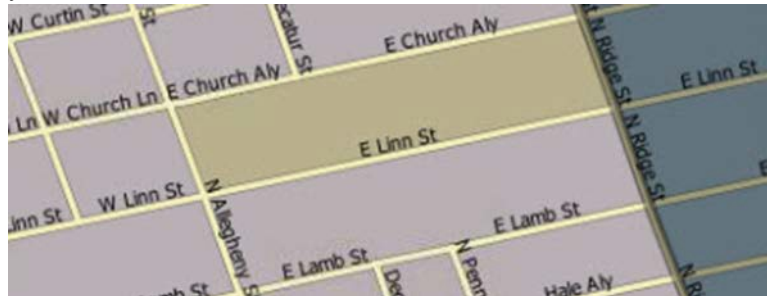
|                      |  |
|----------------------|--|
| <p><b>Step 3</b></p> | <p>Select the specific area feature you want to update. There are two options. You can either select the area feature from the list in the <b>Modify Area Feature tool</b> or use the <b>Select Target Area tool</b> found on the <b>Modify Area Feature toolbar</b>. In this example, “Voting Districts” is selected as the geography we want to update, and the list of all voting districts in the county is shown.</p> <p>1. To select the areal feature from the list in the <b>Modify Area Feature tool</b>:</p> <ul style="list-style-type: none"> <li>• Double click on the area feature name in the Tool. GUPS will zoom to the area feature on the map and make it active. A single click will make the area feature active, but will not zoom to it on the map.</li> </ul>  <p>2. To select the area feature using the <b>Select Target Area</b> :</p> <ul style="list-style-type: none"> <li>• Click on the <b>Select Target Area</b> button on the <b>Modify Area Feature toolbar</b></li> </ul>  <ul style="list-style-type: none"> <li>• Click on a face within the area feature on the map to make it your target entity.</li> </ul> |
| <p><b>Step 4</b></p> | <p>Select the faces on the map that you want to add/remove from the area feature, or use to create a new area feature. In this example, we will add faces to the entity. There are three options: select a face(s) by clicking on the map, select a face by drawing (polygon, freehand, or radius), or select faces by geography. You can access all options in the <b>Select Features button</b> drop-down.</p>   |

| Step | Action and Result |
|------|-------------------|
|------|-------------------|



1. Select a face using Select Feature(s)




- This tool is helpful if you want to individually select faces to add to the target entity.
- Once you have your target area selected, click on a face on the map to select the face. You can select multiple faces by holding the **CTRL** key as you click on the faces.



2. Select a face by using one of several tools to draw around an area

- These tools are helpful if you have several faces to add in a particular area.
- Once you have your target area selected, use one of the several select tools (polygon, freehand and radius) to draw an area and select all the faces within that area. In this example, we used the select feature by radius tool and it selected all the faces at least partially within the circle drawn.

| Step | Action and Result  |
|------|--|
|      | <div data-bbox="483 247 1333 621" data-label="Image"> </div> <p data-bbox="662 636 1198 667">3. Select faces by selecting their geography:</p> <ul data-bbox="483 684 1404 1245" style="list-style-type: none"> <li>• This tool selects all the faces that comprise a specific area feature. It is helpful if your target entity is co-extensive with another geographic area. For example, you may want to select an incorporated place and create a new VTD that is coextensive with it. Or, you may want to add all the area of that place to an existing VTD.</li> <li>• Once you have your target entity selected, use the <b>Select by Geography</b> tool to select all the faces within the following geography types: Block Groups, Census Designated Places, Census Tracts, School Districts (Elementary, Secondary, Unified), Incorporated Places, or Minor Civil Divisions (MCDs).</li> <li>• When you choose the Select Feature by Geography from the drop-down list, a new dock-able window will appear with a list of geographic types you can select by. In the screenshot below, we selected Incorporated Place, meaning that we want to select all the faces within some specific incorporated place to either add to or remove from the target entity we are updating.</li> </ul> <div data-bbox="557 1247 1333 1675" data-label="Image"> </div> <p data-bbox="386 1692 1385 1724">Click on the specific incorporated place on the map and all the faces will be selected.</p> |

| Step          | Action and Result  |
|---------------|--|
| <b>Step 5</b> | Once you have faces selected you can use the add area  , remove area  , or add entity  buttons in the <b>Modify Area</b> toolbar to add the selected faces to your target area feature, remove the selected faces from the target entity, or create a new entity from the selected faces. |

For specific information on updating VTDs using the **Modify Area Feature** tool, see **Section 8.2**.

For specific information on updating area landmarks using the **Modify Area Feature** tool, see **Section 8.4**.

For specific information on updating legal geography using the **Modify Area Feature** tool, see **Section 8.5**.


For specific information on updating congressional or state legislative districts using the **Modify Area Feature** tool, see **Section 8.6**.

## 8.2 Updating VTDs

### 8.2.1 Adding Area to Existing VTDs

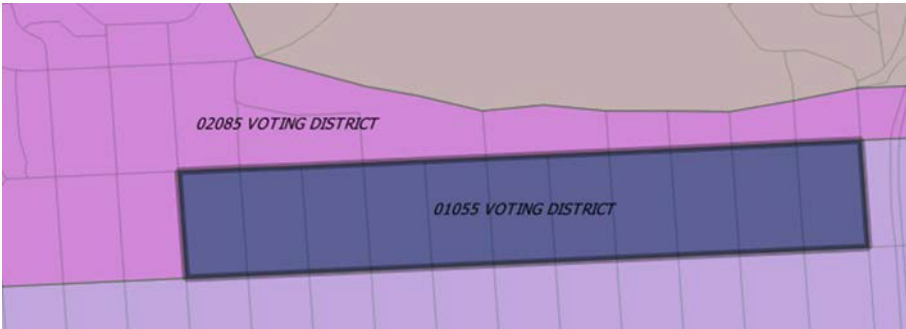
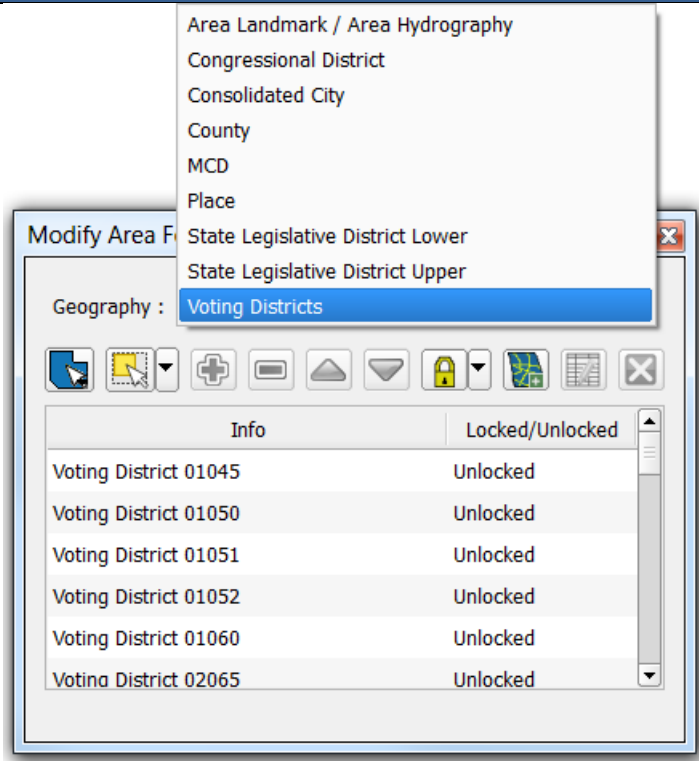
Adding or removing area from a VTD is accomplished by selecting the face or faces (polygons) that comprise the area of change. If a face boundary does not already reflect the area needed for a boundary update, you must digitize a linear feature to split the face. Instructions for adding linear features are contained in **Section 8.3.1**.

**Table 24: Adding to Existing VTDs**


| Step          | Action and Result  |
|---------------|--|
| <b>Step 1</b> | Click on the <b>Modify Area Feature</b> tool.<br><br><i>The <b>Modify Area Feature</b> tool dialog box opens.</i>  |
| <b>Step 2</b> | In the drop-down window, next to “ <b>Geography:</b> ” select “ <b>Voting Districts</b> ”. <i>A list of voting districts in the county will appear.</i> Select the VTD you want to update (target) by scrolling through the list and double clicking on the VTD. GUPS will zoom to that VTD on the map. In this example, we will select and add area to <b>01055 Voting District</b> . |



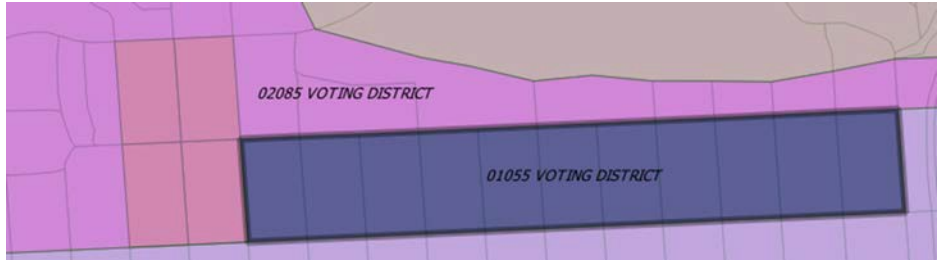
| Step | Action and Result |
|------|-------------------|
|------|-------------------|


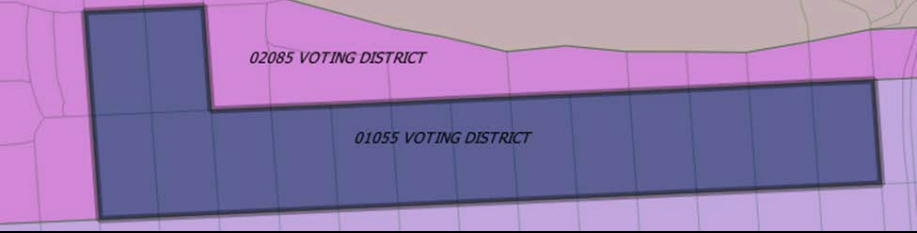



**Step 3**

In the **Modify Area Feature** tool, click the **Select Features** button  to start selecting faces to add to 01055. *The button will darken to signify that it is selected.*

On the map, click on the faces that you would like to add to the voting district that you are modifying. A single left click will select one face at a time, while holding “**Ctrl**” and left clicking on faces will select multiple faces at a time. *The selected faces will change in color slightly to signify that they have been selected.*




|  |  |
|--|--|
| <p><b>Step 4</b></p>   | <p>Click on the <b>Add Area</b> button  in the <b>Modify Area Feature</b> tool to add the selected faces to the target voting district. The selected faces will change in color to match that of their new VTD and show that the area has been added to the new district.</p>                         |
| <p></p> | <p><b>Note:</b> The <b>Remove Area</b> tool for voting districts is disabled. In adding a face from one voting district to another, like in this example, you are effectively removing the area from 02085 and adding it to 01055. Because VTDs should completely cover all the area in the county and not overlap, the only way to remove area from a VTD is to add it to another VTD. You can also delete entire VTDs, which is described in <b>Section 8.2.5</b>.</p> |

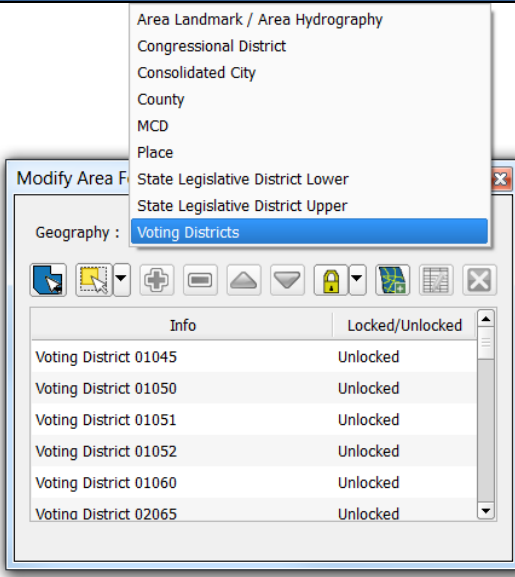

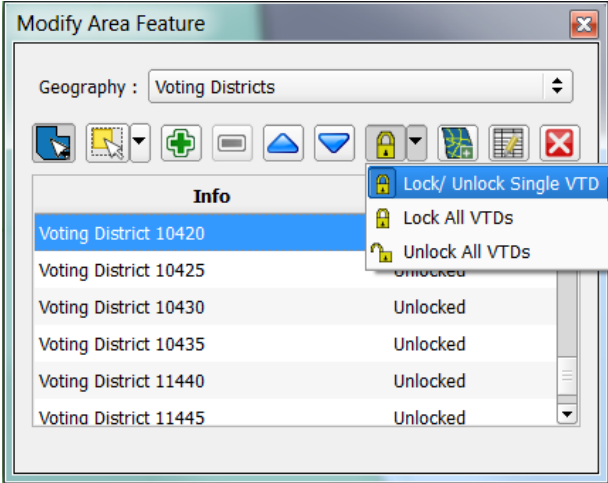
## 8.2.2 Locking VTDs

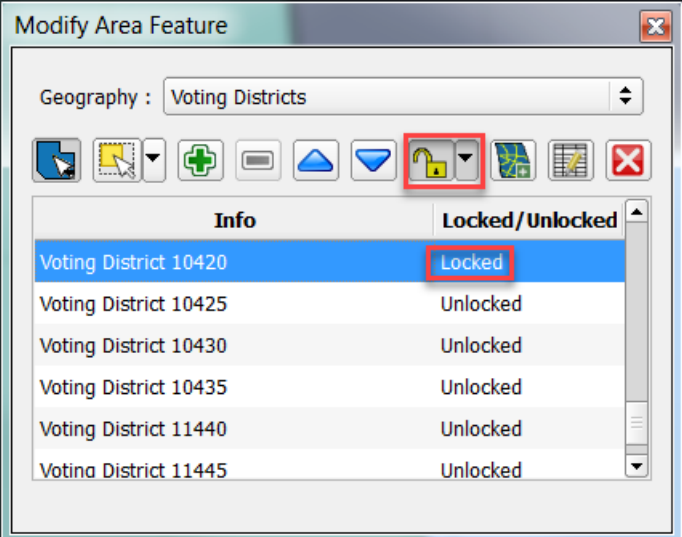
Because when you add area to one VTD it automatically removes it from another VTD, you may want to “**lock**” a VTD to ensure that faces are not inadvertently selected and removed from it when you are adding area to its neighbor VTD.

In this example, we will add area to 09365 Voting District, but some surrounding voting districts will be locked in order to make sure that area is not inadvertently removed from them.

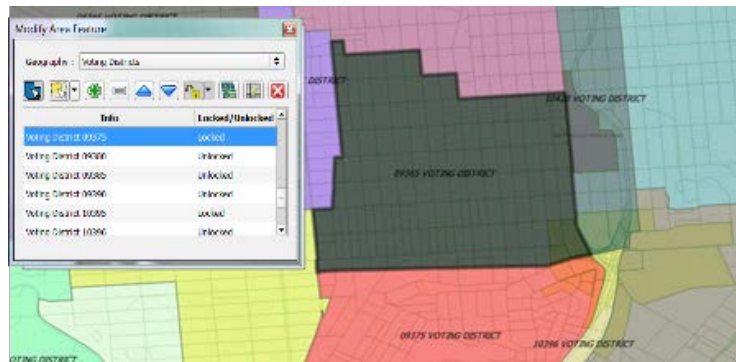
**Table 25: Adding to a VTD While Locking Surrounding VTDs**

| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 1</b></p> | <p>Click on the <b>Modify Area Feature</b> tool.</p>  <p>The <b>Modify Area Feature</b> tool dialog box opens.</p> |
| <p><b>Step 2</b></p> | <p>In the drop-down window next to <b>Geography</b>, select <b>Voting Districts</b>.</p>   |

| Step                 | Action and Result  |
|----------------------|--|
|                      |    |
| <p><b>Step 3</b></p> | <p>Select the VTDs that are to remain unchanged by clicking on them in the area features list. You can also select them on the map using the <b>Select Target Area</b> button. (Click on the <b>Select Area Target</b> button  and click on the any part of the VTD in the map view.)</p>  |
| <p><b>Step 4</b></p> | <p>Once a voting district is selected, <b>click</b> on the dropdown menu to the right of the <b>Lock Tool</b> in the <b>Modify Area Feature</b> window to lock the district that is to remain unchanged. Select <b>Lock/Unlock Single VTD</b> to lock/unlock the VTD selected in the Info list, or select <b>Lock All VTDs</b> or <b>Unlock All VTDs</b> to lock/unlock all the VTDs in the info list.</p>   |

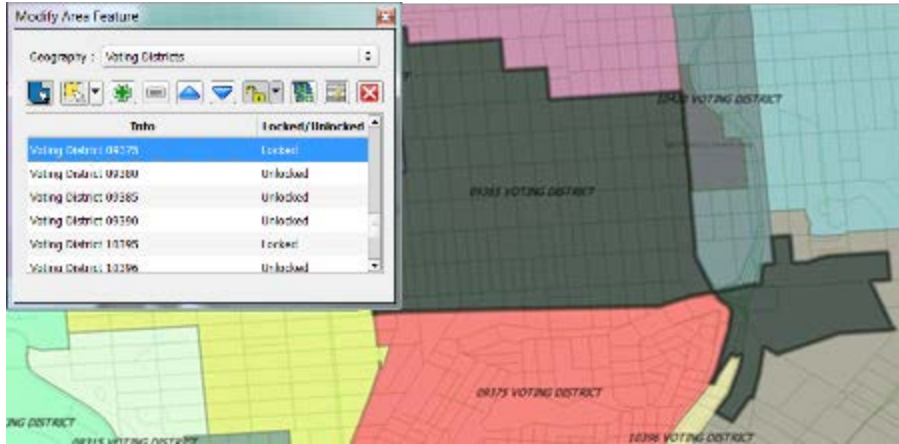
| Step | Action and Result   |
|------|---|
|      | <p>You will notice the lock toggle button (outlined in red) changes from a closed padlock to an open padlock to signify that that 10420 Voting District has been locked. The button now functions to unlock the VTD. Click to <b>“unlock”</b> the VTD. The lock/unlock status is also displayed in the column to the right of the Voting District name in the Info list. The button now functions to unlock the VTD. Click to <b>“unlock”</b> the VTD.</p>  |

This screenshot shows faces to the east and southeast of 09375 Voting District that have been selected for addition to 09365 Voting District. Some of the selected faces are currently assigned to locked 10420 Voting District and locked 09375 Voting District. Other selected faces are assigned to unlocked 10396 Voting District, and unlocked 10395 Voting District (in grey, lower right corner, label not shown).



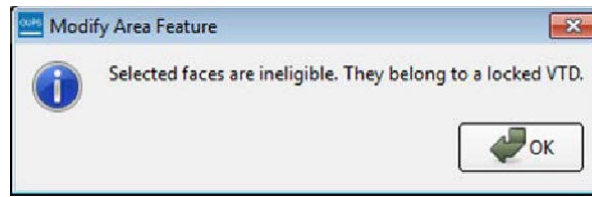
**Figure 14. Faces Selected for Addition to 09375 Voting District**

After selecting the **Add Area** button, you will notice that only the faces that are not part of the locked VTDs were added to the target 09365 Voting District.



**Figure 15. Faces Not Locked Added to 09365 Voting District**


If all the faces you select to add to a VTD are assigned to a locked VTD, you will get this notification:




**Figure 16: Locked VTD Warning**

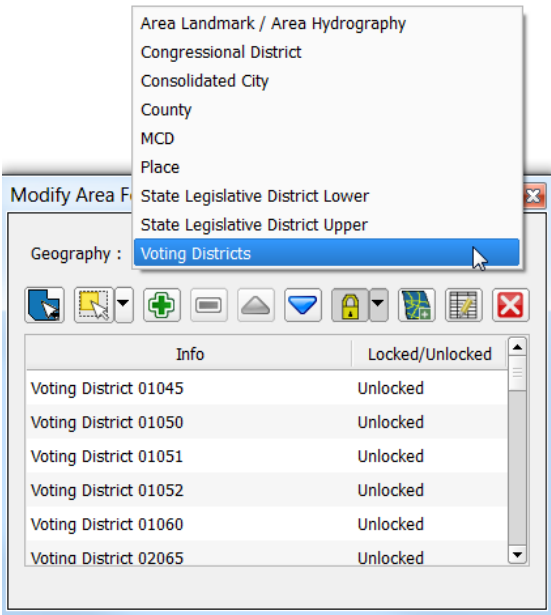
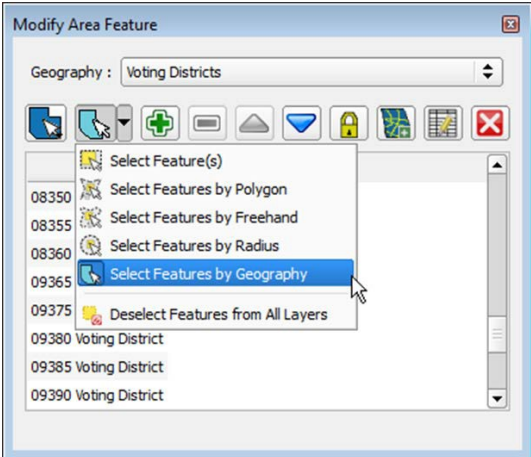
You must unlock the VTD in order to proceed.

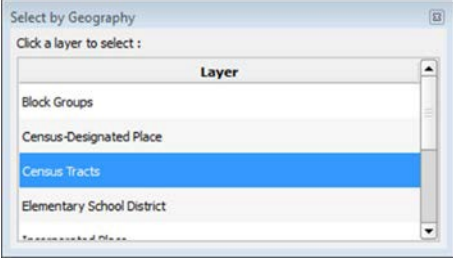
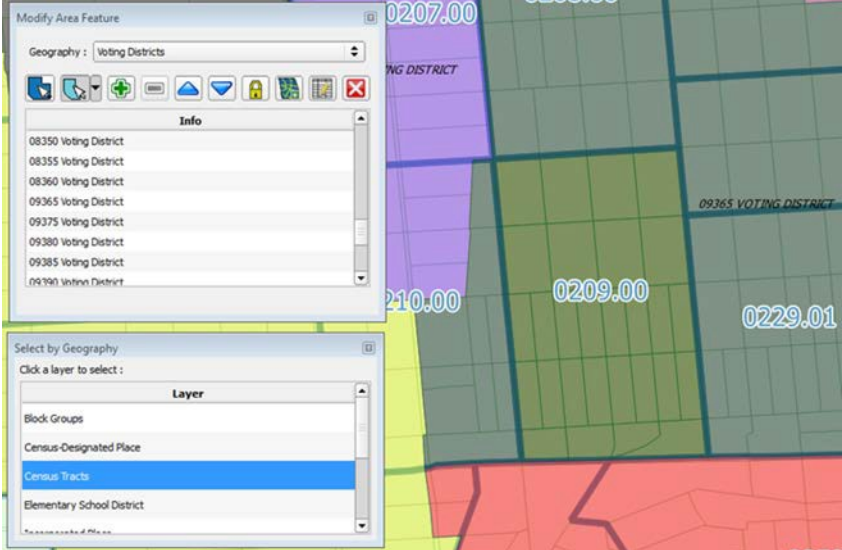

### 8.2.3 Creating New VTDs

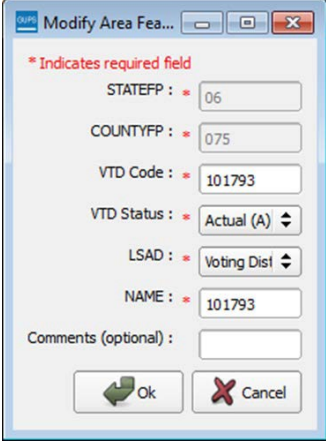
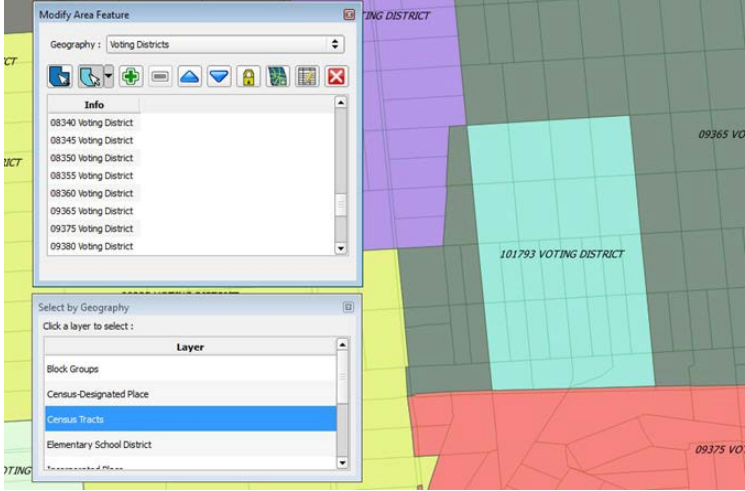
Create VTDs by selecting the faces that comprise the VTD, and then clicking on the Add Entity  button. In this example, we will select the faces to use to create a new VTD using the **Select by Geography** tool.

**Table 26: Creating New VTDs**

| Step          | Action and Result  |
|---------------|--|
| <b>Step 1</b> | <p>Click on the <b>Modify Area Feature</b> tool.</p>  <p>The <b>Modify Area Feature</b> tool dialog box opens.</p> |
| <b>Step 2</b> | In the drop-down window, next to <b>Geography</b> : select <b>Voting Districts</b> .   |

| Step                  | Action and Result  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
|-----------------------|--|------|-----------------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|
|                       |  <p>Area Landmark / Area Hydrography<br/> Congressional District<br/> Consolidated City<br/> County<br/> MCD<br/> Place<br/> State Legislative District Lower<br/> State Legislative District Upper<br/> Voting Districts</p> <p>Modify Area Feature</p> <p>Geography : Voting Districts</p> <table border="1"> <thead> <tr> <th>Info</th> <th>Locked/Unlocked</th> </tr> </thead> <tbody> <tr> <td>Voting District 01045</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 01050</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 01051</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 01052</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 01060</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 02065</td> <td>Unlocked</td> </tr> </tbody> </table> | Info | Locked/Unlocked | Voting District 01045 | Unlocked | Voting District 01050 | Unlocked | Voting District 01051 | Unlocked | Voting District 01052 | Unlocked | Voting District 01060 | Unlocked | Voting District 02065 | Unlocked |
| Info                  | Locked/Unlocked  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01045 | Unlocked   |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01050 | Unlocked   |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01051 | Unlocked   |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01052 | Unlocked   |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01060 | Unlocked   |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 02065 | Unlocked   |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| <p><b>Step 3</b></p>  | <p>Under the <b>Select Features</b> button drop-down, choose <b>Select Features by Geography</b>. (This example demonstrates using the <b>Select by Geography</b> tool. Any selection method can be used.)</p>  <p>Modify Area Feature</p> <p>Geography : Voting Districts</p> <p>Select Feature(s)<br/> Select Features by Polygon<br/> Select Features by Freehand<br/> Select Features by Radius<br/> Select Features by Geography<br/> Deselect Features from All Layers</p> <p>08350<br/> 08355<br/> 08360<br/> 09365<br/> 09375<br/> 09380 Voting District<br/> 09385 Voting District<br/> 09390 Voting District</p>  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |

|                      |   |
|----------------------|---|
| <p><b>Step 4</b></p> | <p>A new <b>Select by Geography</b> window will open. Here you can choose which type of geography you would like to use to select the faces. For this example, we will use census tracts, meaning we will choose a census tract and all the faces in that tract will be selected. Select the type of geography, and in the <b>Map View</b> click on a feature of that geography type (census tract in this example).</p>  |
| <p><b>Step 5</b></p> | <p>All the faces within the census tract you selected (<b>0209.00</b> in this example) will be selected.</p>   |
| <p><b>Step 6</b></p> | <p>In the <b>Modify Area Feature</b> tool, click on the <b>Add Entity</b> button  to create a new voting district out of the selected faces/Census Tract.</p>  |


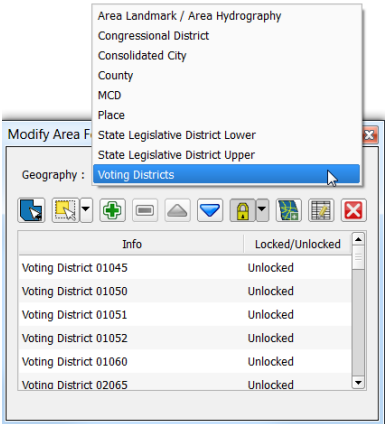

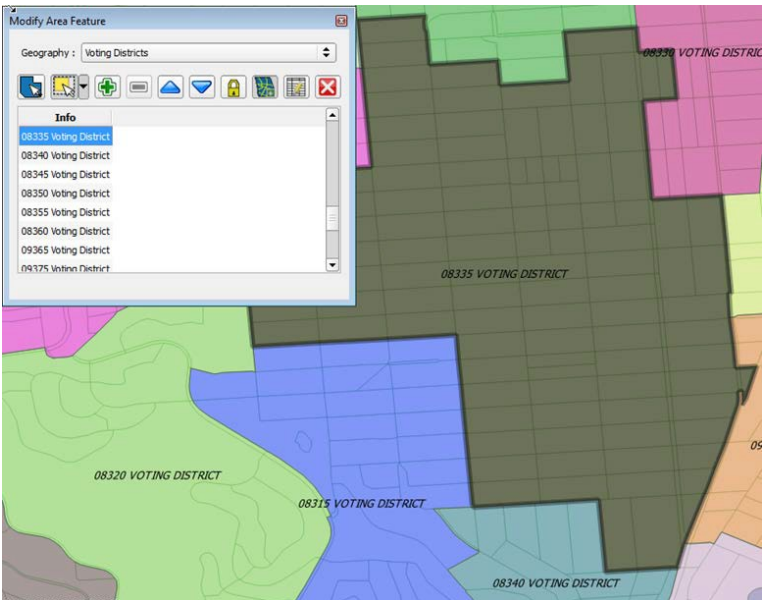
|                      |   |
|----------------------|---|
| <p><b>Step 7</b></p> | <p>A new window will appear that requires that you input attribute values for the new voting district. The fields marked with a red asterisk are required fields.</p>  <p>STATEFP = 2-digit state FIPS code<br/> COUNTYFP = 3-digit county FIPS code<br/> VTD Code = VTD Code (up to 6 characters)<br/> VTD Status = Actual (A) or Pseudo (P). Select Pseudo if the spatial representation is an approximation of how the VTD should be represented, or represents some sort of sub-election geography. This should be a rare occurrence.<br/> LSAD = Legal/Statistical Area Description<br/> NAME – VTD Name</p> |
| <p><b>Step 8</b></p> | <p>Click <b>“OK”</b> to save. The new Voting District appears on the map and in the area features list in the <b>Modify Area Features</b> tool.</p>   |


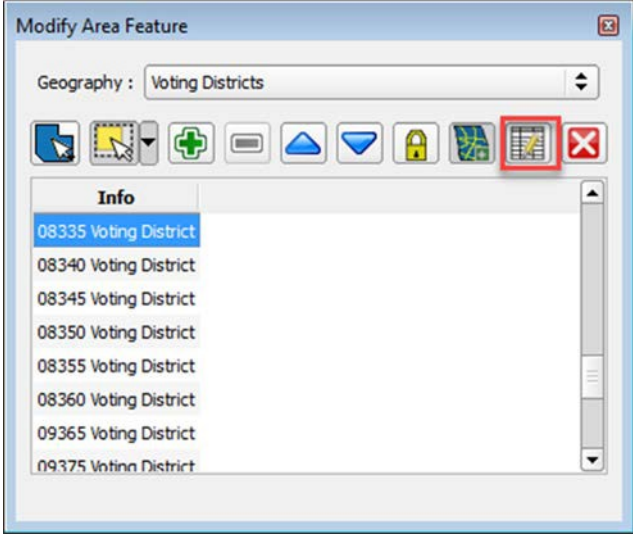
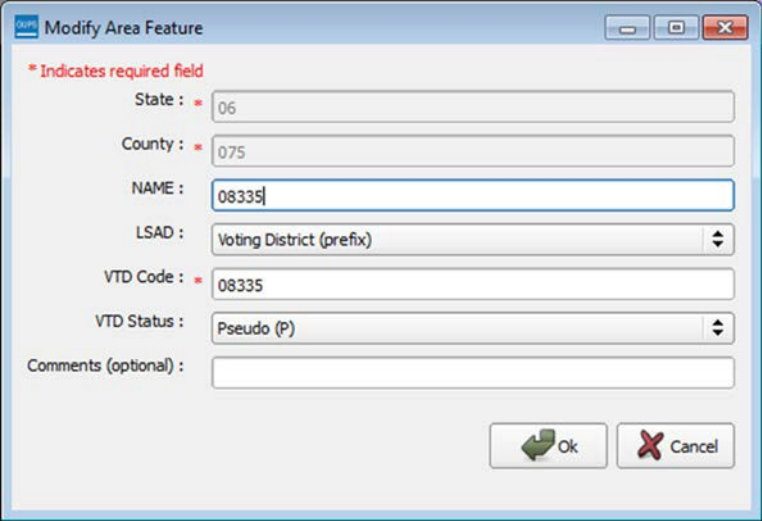
## 8.2.4 Modifying VTD Attributes

Modify VTD attributes if you want to change the name, code, area description, or other non-spatial attribute of your VTDs.




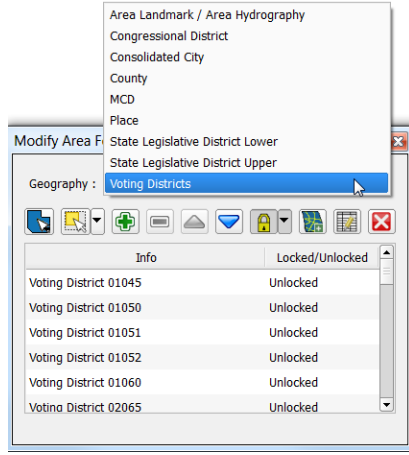

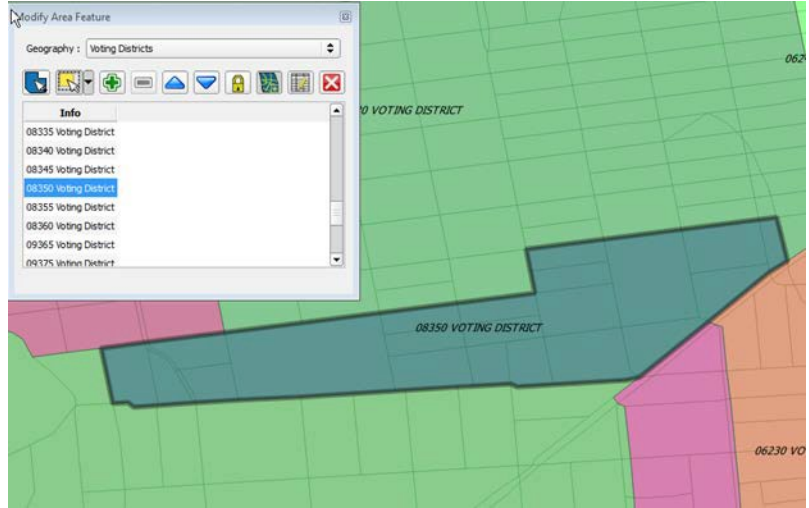
**Table 27: Modifying VTD Attributes**


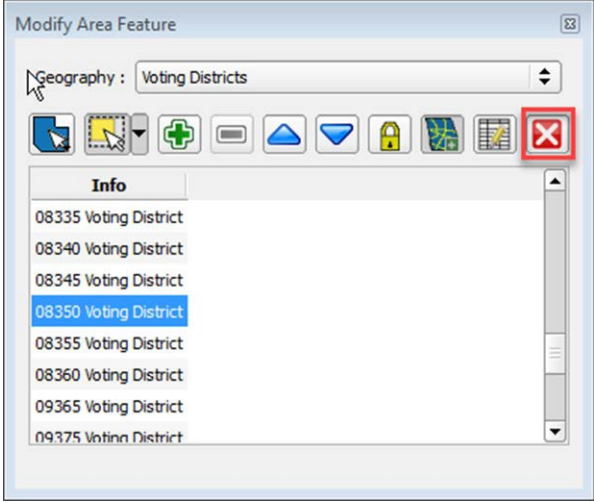
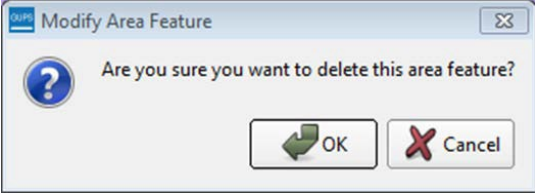
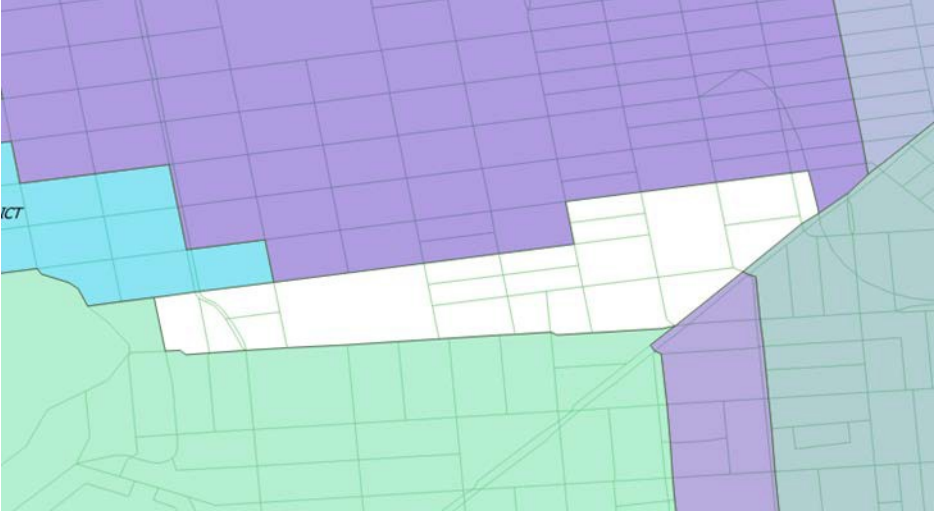
| Step                  | Action and Result   |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
|-----------------------|---|------|-----------------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|
| <p><b>Step 1</b></p>  | <p>Click on the <b>Modify Area Feature</b> tool.</p>  <p>The <b>Modify Area Feature</b> tool dialog box opens.</p>  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| <p><b>Step 2</b></p>  | <p>In the drop-down window, next to <b>Geography:</b> select <b>Voting Districts</b>.</p>  <table border="1" data-bbox="699 772 1065 940"> <thead> <tr> <th>Info</th> <th>Locked/Unlocked</th> </tr> </thead> <tbody> <tr> <td>Voting District 01045</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 01050</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 01051</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 01052</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 01060</td> <td>Unlocked</td> </tr> <tr> <td>Voting District 02065</td> <td>Unlocked</td> </tr> </tbody> </table> | Info | Locked/Unlocked | Voting District 01045 | Unlocked | Voting District 01050 | Unlocked | Voting District 01051 | Unlocked | Voting District 01052 | Unlocked | Voting District 01060 | Unlocked | Voting District 02065 | Unlocked |
| Info                  | Locked/Unlocked   |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01045 | Unlocked  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01050 | Unlocked  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01051 | Unlocked  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01052 | Unlocked  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 01060 | Unlocked  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| Voting District 02065 | Unlocked  |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |
| <p><b>Step 3</b></p>  | <p>Activate and navigate to the voting district whose attributes you want to modify by either clicking on it in the <b>Area Feature</b> list, or by clicking on the <b>Target Area</b> button  and then clicking on the VTD on the map.</p>    |      |                 |                       |          |                       |          |                       |          |                       |          |                       |          |                       |          |

|                      |   |
|----------------------|---|
| <p><b>Step 4</b></p> | <p>Once your voting district is selected, click on the <b>Change Attributes</b>  in the <b>Modify Area Feature</b> toolbar.</p>  |
| <p><b>Step 5</b></p> | <p>A new <b>Modify Area Feature</b> window will pop-up</p>   |
| <p><b>Step 6</b></p> | <p>Type over the name or code with the information you want to change it to, or change the LSAD or VTD Status using the dropdowns. Except in rare occasions, VTD Status will be Actual (A). Click <b>OK</b> to view changes.</p>  |

## 8.2.5 Deleting VTDs

Table 28: Deleting a VTD

| Step          | Action and Result   |
|---------------|---|
| <b>Step 1</b> | Click on the <b>Modify Area Feature</b> tool.   |
| <b>Step 2</b> | In the drop-down window, next to <b>Geography:</b> select <b>Voting Districts</b> .    |
| <b>Step 3</b> | Target the voting district you want to delete either clicking on it in the <b>Area Feature List</b> , or by clicking on <b>Target Area</b> button  and then clicking on the VTD on the map.  |

|                      |   |
|----------------------|---|
| <p><b>Step 4</b></p> | <p>Once your voting district is selected, click on the <b>Delete Area Feature</b> button in the <b>Modify Area Feature</b> tool .</p>    |
| <p><b>Step 5</b></p> | <p>A window will appear asking you to confirm that you want to delete the selected area feature.</p>   |
| <p><b>Step 6</b></p> | <p>Click <b>“OK”</b> to confirm. You will notice on the map, the area (faces) that once was a voting district is now not assigned to any VTD. You can assign the unassigned faces to another voting district at this time, or they will fall out later when you run the <b>VTD Criteria Review Tool</b> (See <b>Section 8.6.1</b> for more information).</p>  |



## 8.3 Updating Linear Features

We recommend that you review the linear features in the Census Bureau file to determine whether there are missing features or existing features that should be deleted. You can import your own shapefiles, geodatabases, web mapping services and/or imagery for comparison against Census Bureau data. If you plan to import data for reference purposes, follow the directions for importing user-provided geospatial data and/or web mapping services listed in **Section 6.2.7 Add Data Toolbar**. Another option for automatically adding imagery is to use the **Add Imagery** button on the VTD toolbar.

Click **Appendix A, Table 62: Linear Feature Updates Permitted** for the list of feature updates the Census Bureau will accept.

### 8.3.1 Adding a Linear Feature

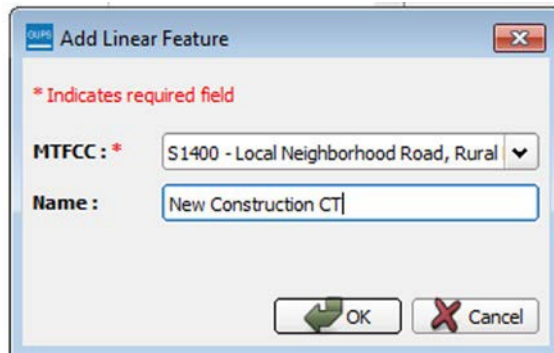
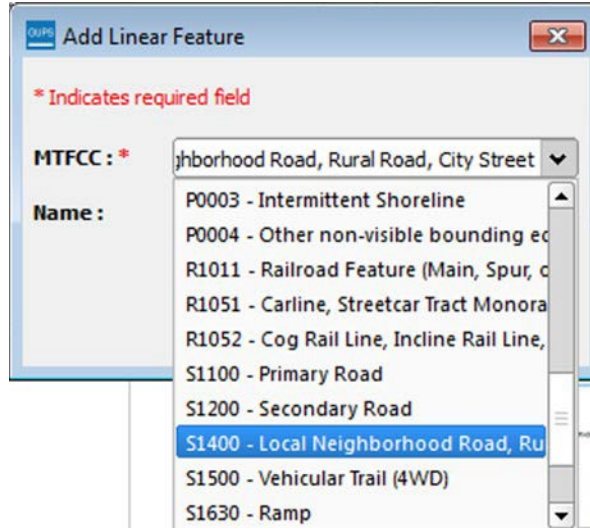
**Table 29: Adding a Linear Feature**

| Step   | Action and Result  |
|--------|--|
| Step 1 | Navigate in the <b>Map View</b> to where you want to add a linear feature.   |
| Step 2 | Click on the <b>Add Linear Feature</b> button on the VTD toolbar.<br>   |
| Step 3 | Digitize the new linear feature. <i>The cursor will appear in the map as a pink crosshair.</i><br>A) Left- click the mouse at the starting point of line and continuing to click at each vertex (shape) point of the line, and<br>B) Right-click the mouse when you have completed the new line.<br> |

**Step 4**

The **Add Linear Feature** dialog box opens.

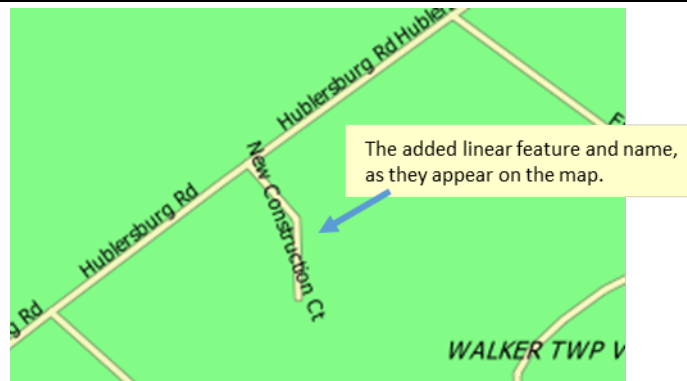
Click on the **MTFCC** drop-down menu to choose the appropriate code from the drop-down menu.



Type the name of the feature, if the feature is named, in the **Name** field. Note only rail, hydro, and road linear features can be named in GUPS. Refer to **Appendix B** for the list of standardized street type abbreviations and **Appendix C** for MTFCC Descriptions.

Click the **OK** button.


**Step 5**



|               |   |
|---------------|---|
| <b>Step 6</b> | GUPS will not allow one linear feature to be placed on top of another. <i>If you attempt to add a road over a boundary, a dialog box with the message “New Line Segment cannot start and end within 5 ft. of an existing line.” opens.</i> Instead, select the <b>Modify Linear Features Attributes</b> button on the VTD toolbar, select the boundary line coincident with the road feature, and after the <b>Update Attributes</b> dialog box opens, change the MTFCC to the appropriate road (Sxxxx MTFCC). Provide a name for the road. The feature remains a “boundary” because all geographic entity boundaries are determined by faces (polygons), not by linear features. |
|---------------|---|

### 8.3.2 Splitting a Linear Feature

Splitting a linear feature may be necessary if you need to delete or edit part of a linear feature. You will first need to “split” the linear features so you can select only the part you want to delete or edit.

Using the **Split Linear Feature** tool  on the VTD toolbar, you can split a single linear feature into two or more features.

In this example, an existing invisible edge is split so one portion can be modified into a road and the other portion can be flagged for deletion. **Figure 17** shows the linear feature to split and edit.

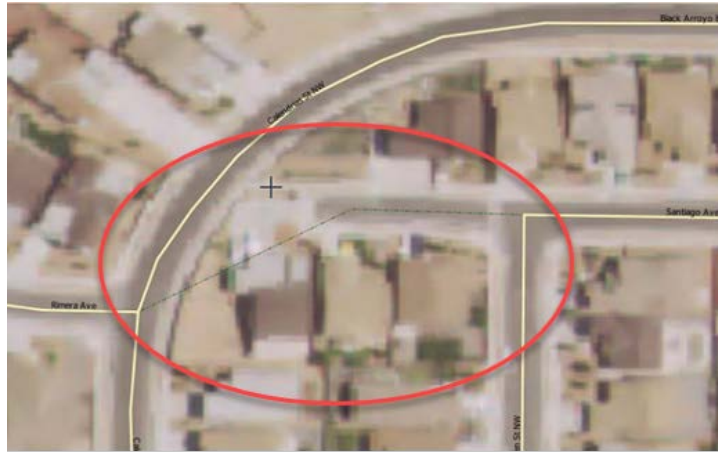





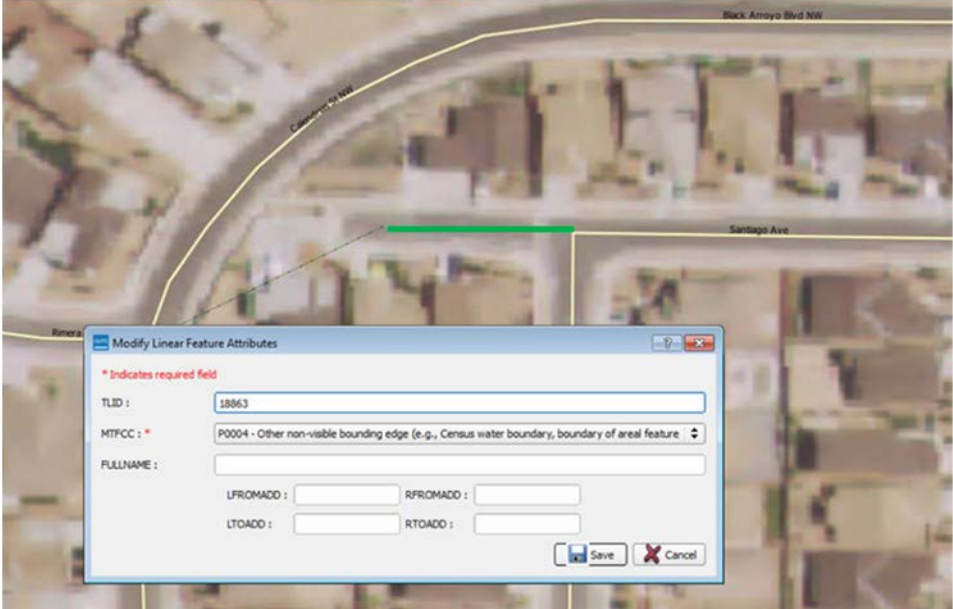


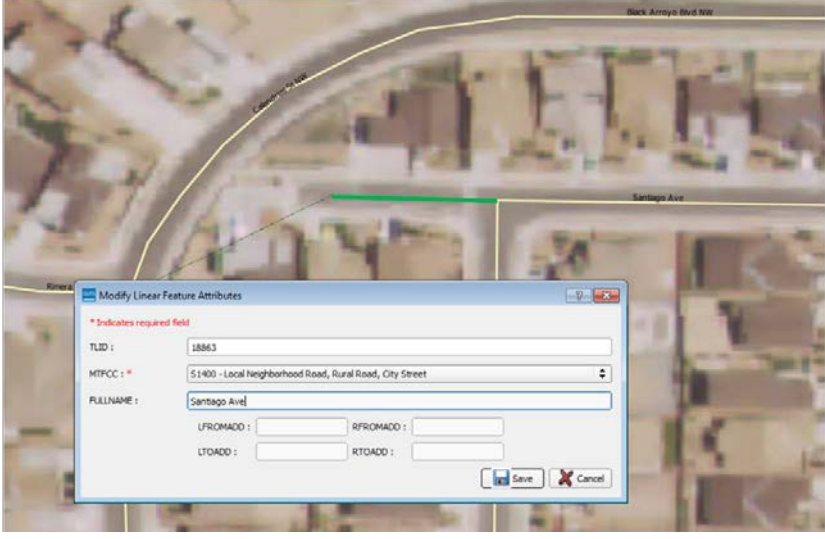

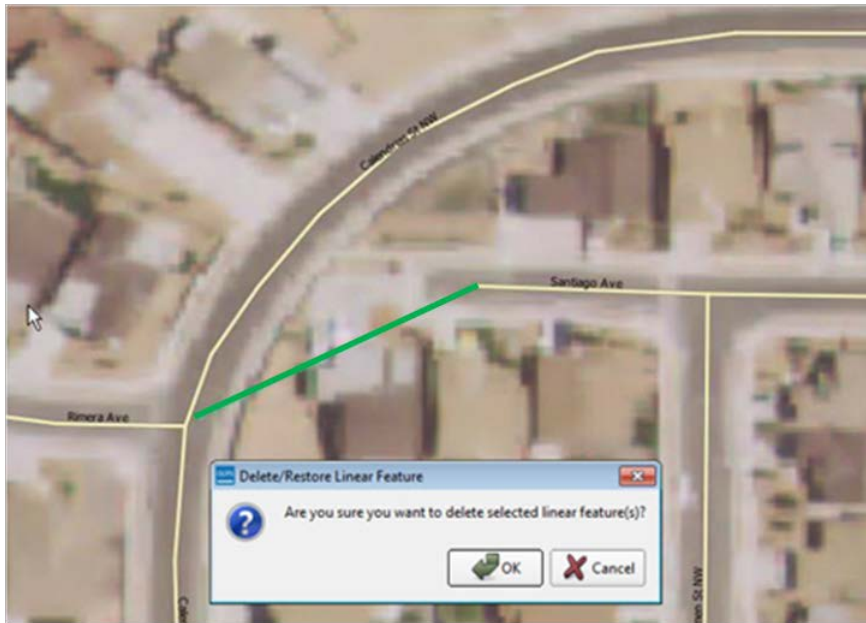
Figure 17. Linear Feature to Split/Edit


Table 30: Split/Edit a Linear

| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 1</b></p> | <p>Select the <b>Split Linear Feature</b> tool from the VTD toolbar.</p>  <p>The cursor will appear in the map view as a pink crosshair.</p>  |
| <p><b>Step 2</b></p> | <p>Click on the location where you want to split the linear feature. <i>There are now two linear features, each with the attribution of the original line.</i> One portion of the split line will appear highlighted, but note that it may not be the portion that needs to be edited.</p>                           |



| Step                 | Action and Result   |
|----------------------|---|
|                      |   |
| <p><b>Step 3</b></p> | <p>Select the linear feature portion you want to modify by clicking on the <b>Select Tool</b> in the Standard toolbar.</p>  <p>Left click on the linear feature.</p>  |
| <p><b>Step 4</b></p> | <p>Select the <b>Modify Linear Feature Attributes</b> tool from the VTD Toolbar.</p>  <p>The <i>Modify Linear Feature Attributes</i> dialog box will appear.</p>  |

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 5</b></p> | <p>Change the MTFCC or Name attribute by typing over the existing values in the <b>Modify Linear Feature Attribute</b> dialog box. In this example, the linear feature had no name and an MTFCC of P0004 – Other non-visible bounding edge. This edge should now be named Santiago Ave and modified to an S1400- Local Neighborhood Road</p>  <p>Click <b>Save</b>.</p> |
| <p><b>Step 6</b></p> | <p>The other portion of the linear feature should be deleted, as it does not exist. Select the other linear feature. Click on the <b>Linear Feature Delete</b> tool on the VTD toolbar.</p>   |
| <p><b>Step 7</b></p> | <p>A pop-up box will appear asking you to confirm that you want to delete the feature.</p>    |

| Step          | Action and Result  |
|---------------|--|
| <b>Step 8</b> | <p>Click <b>OK</b> and the symbology of the linear feature in the map view will indicate one portion is flagged for deletion (symbology is black Xs over the edge) and the other is part of Santiago Ave.</p>  |

---



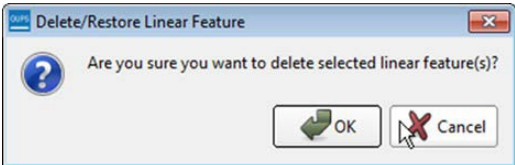


**Note:** You are not actually “deleting” a feature in the Census Bureau file. The software assigns a “deletion” change type to the feature in the attribute table. After receiving the file, the Census Bureau first reviews the deletion before deleting the feature. The feature flagged for deletion will still appear on the GUPS map with a black “x” symbology on top of the feature’s original symbology. If you delete a feature that you had added to the project yourself, it will disappear completely from the map.

---

### 8.3.3 Deleting a Linear Feature

There are several ways you can delete a linear feature. You can delete one segment or multiple segments or features at a time. As stated in **Section 8.3.2**, if you delete a linear feature that existed in the partnership shapefiles, it will be flagged for deletion pending Census Bureau review. You can also restore the deleted feature. However, if you delete a linear feature that you added, the linear feature will be deleted and cannot be restored.


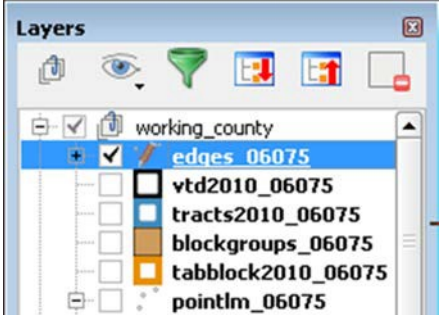
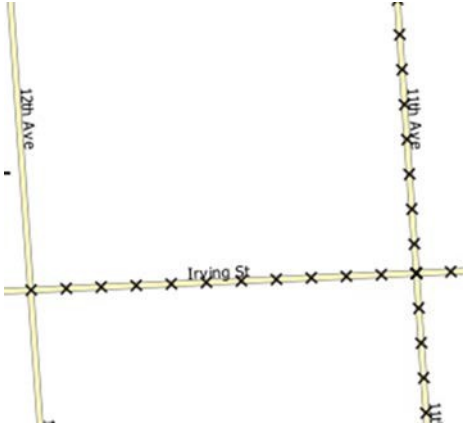

**Table 31: Delete a Linear Feature**

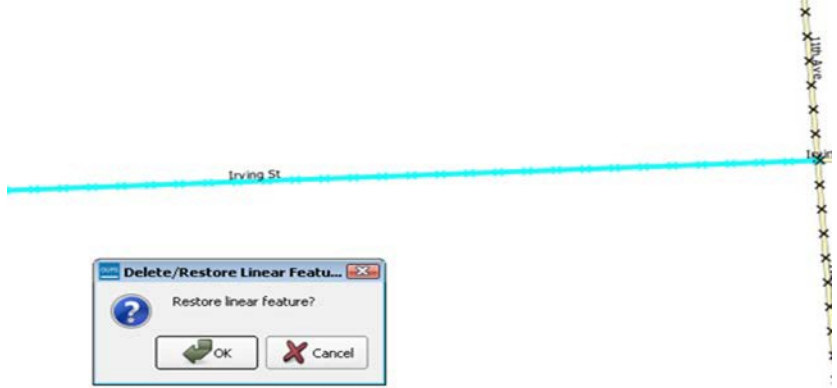
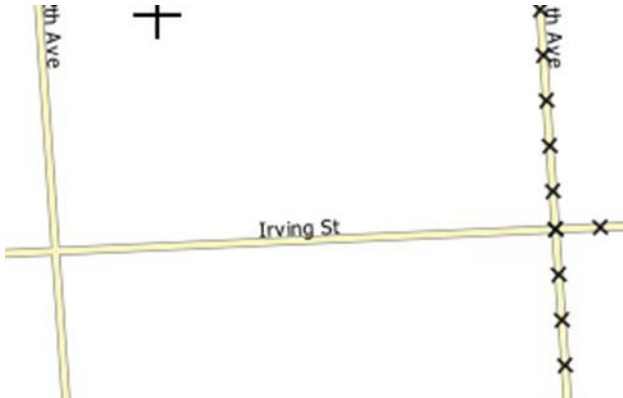
| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 1</b></p> | <p>Click on the <b>Delete Linear Feature</b> button on the VTD toolbar.</p>   |
| <p><b>Step 2</b></p> | <p>When you activate the <b>Delete Linear Feature</b> tool, your mouse cursor will turn into a cross-hair. Hover over the line segment that you would like to delete and left mouse click. In this example, we chose to delete Firehouse Ln.</p>  <p>The <b>Delete Linear Feature</b> confirmation dialog box opens asking if you are sure you want to delete the selected feature(s).</p>  <p>Click <b>OK</b> to delete the feature.</p> |
| <p><b>Step 3</b></p> | <p>The feature is flagged for deletion and symbolized in the <b>Map View</b> with black Xs.</p>  <p>Another way to delete a linear feature is by using the <b>Select Features</b> tool  to draw a selection region over the lines you would like to mark for deletion, and then clicking on the <b>Delete Linear Feature</b> tool.</p>   |

### 8.3.4 Restoring Deleted Linear Features

You may delete a linear feature in error and later wish to restore or “un-delete” it.

**Table 32: Restore a Linear Feature**


| Step  | Action and Result   |
|---|---|
|  | <p><b>You cannot restore a deleted linear feature you added; you will need to add it again if you deleted it in error.</b> You can only restore deleted linear features if they were included in the original Census Bureau provided Partnership Shapefile.</p>   |
| <p><b>Step 1</b></p>  | <p>Make sure the <b>Edges</b> layer is active (checked) in the <b>Table of Contents</b>.</p>  <p>Then zoom to the location on the map where the deleted feature is located.</p>  |
| <p><b>Step 2</b></p>  | <p>Click on the <b>Delete Linear Feature tool</b> in the VTD Toolbar</p>    |

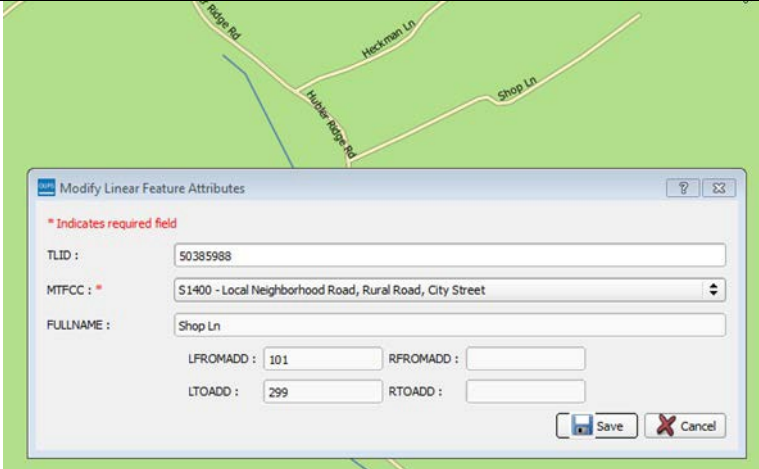
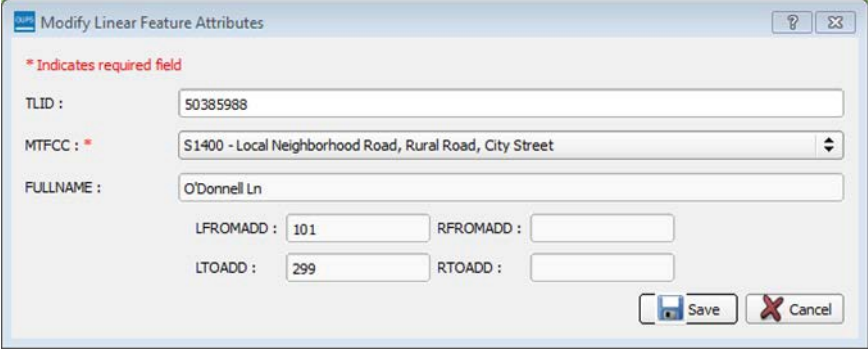
| Step          | Action and Result  |
|---------------|--|
| <b>Step 2</b> | <p>Left-click on the deleted feature you want to restore. <i>The deleted feature turns cyan blue (color may vary) and the <b>Delete Linear Feature</b> dialog box opens. The box asks you to confirm that you want to restore the line.</i></p>  <p>To restore the linear feature, click the <b>OK</b> button.</p> |
| <b>Step 3</b> | <p>The <b>Delete Line</b> symbology is removed from the linear feature in the <b>Map View</b> and the line is restored.</p>   |

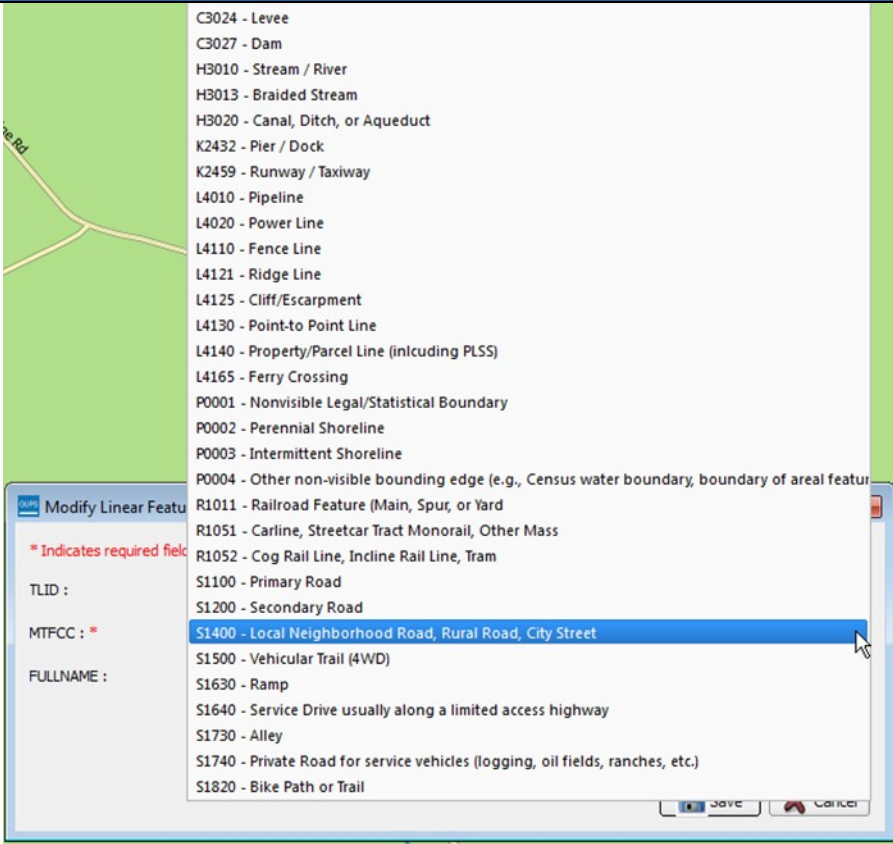
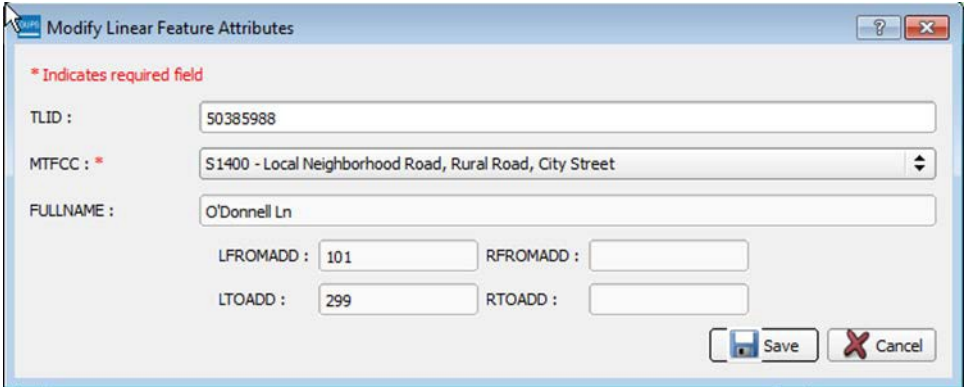
### 8.3.5 Editing Linear Feature Attributes

To change the name or the classification of a linear feature, follow the steps in **Table 33**.

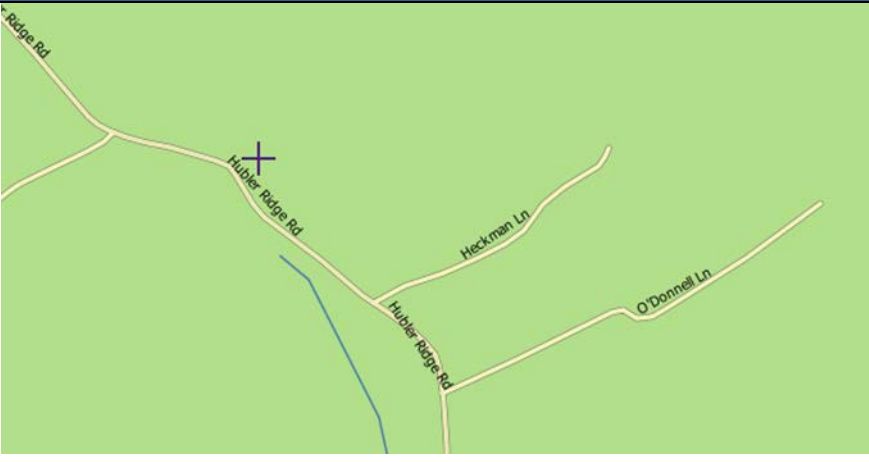

**Table 33: Edit a Linear Feature Attribution**

| Step          | Action and Result   |
|---------------|---|
| <b>Step 1</b> | <p>Click on the <b>Modify Linear Feature Attributes</b> button on the <b>VTD</b> toolbar.</p>   |
| <b>Step 2</b> | <p>Click on the linear feature on the map you want to edit. <i>The <b>Modify Linear Features Attributes</b> dialog box opens. The <b>Name</b> field populates if the feature is named. If the feature is unnamed, the field is blank. The MTFCC field shows the assigned MTFCC.</i></p> |

| Step                 | Action and Result   |
|----------------------|---|
|                      |  <p>If there are address ranges assigned to the street segment, they are displayed in the <b>LTOADD</b>, <b>RTOADD</b>, <b>LFROMADD</b>, and <b>RFROMADD</b> fields. The Census Bureau accepts, but does not encourage, address range updates, as the Census Bureau has internal processes for updating and maintaining address ranges. If you want to submit address ranges, please contact the CRVRDO at 301-763-4039 for more information.</p> |
| <p><b>Step 3</b></p> | <p>To add or change the name of the linear feature, update the <b>FULLNAME</b> field by simply typing in the new name. If the field is already populated, just highlight the existing name and hit <b>DELETE</b> or backspace over the name. In this example, we changed the name of Shop Ln to O'Donnell Ln.</p>   |
| <p><b>Step 4</b></p> | <p>Click on the <b>MTFCC</b> drop-down menu to change the MTFCC.</p>  |

| Step   | Action and Result  |
|--------|--|
|        |  <p>In this example, the MTFCC does not need to be changed, so we will leave it as S1400. We also are not changing the address ranges.</p>  |
| Step 5 | Click <b>Save</b> . <i>The changes are made and the new name appears in the map view.</i>  |



| Step  | Action and Result   |
|---|---|
|   |   |
|  | <p><b>Note:</b> Be sure to include the street type (St, Ave, Blvd, etc.) in all street names. <b>Appendix B</b> lists the standardized street type abbreviations.</p> |

## 8.4 Reviewing and Updating Area Landmarks

The Census Bureau accepts updates to area landmarks, including hydrographic areas, as part of the Voting District Project. Allowable updates include:

- Boundary corrections (adding and removing area),
- Creating a new area landmark or hydrographic area,
- Removing an area landmark or hydrographic area, and
- Changing or adding a name to an area landmark or hydrographic area.

Adding or removing area from an area landmark, including area hydrography, is accomplished by selecting the face or faces (polygons) that comprise the area of change. If a face boundary does not already reflect the area needed for a boundary update, you must digitize a linear feature to split the face. Instructions for adding linear features are contained in **Section 8.3.1**.

If your state plans to reallocate prisoners during redistricting, you may wish to particularly review the existing area landmarks with MTFCCs K1235, K1236, K1237, and K1238, which represent areas that contain prison populations.

GUPS displays area landmarks in different symbology depending on categorization, as shown in **Figure 18**. Area landmarks deleted by the user are shown in gray symbology.

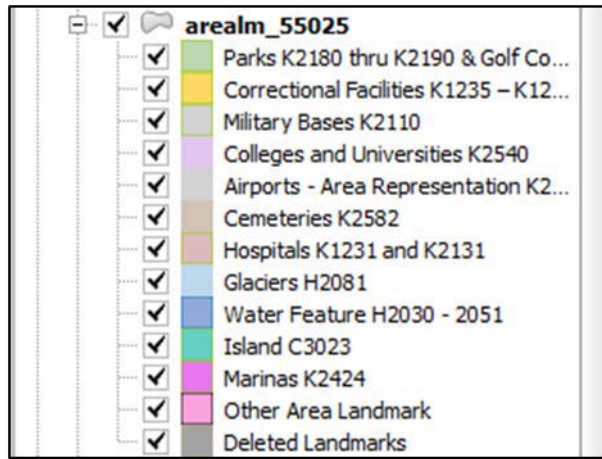

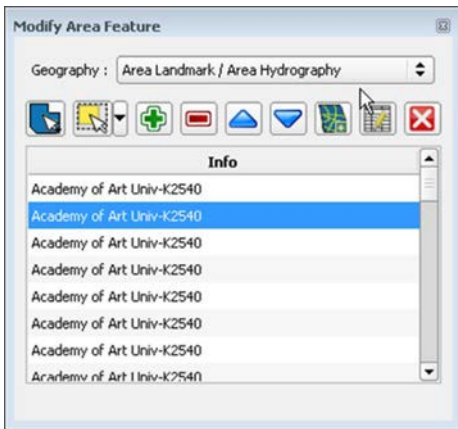


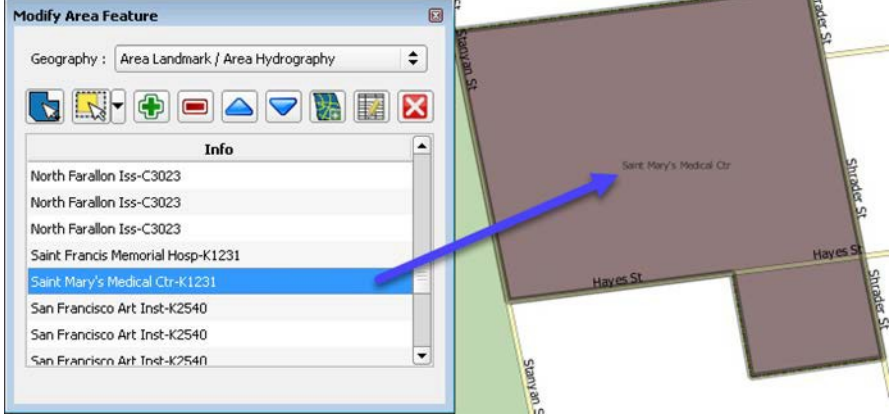
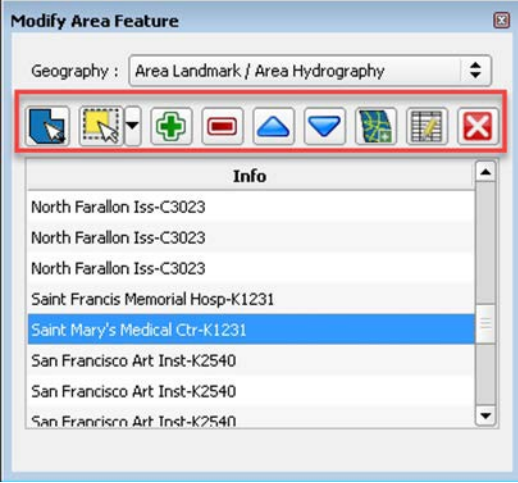
Figure 18. Area Landmark Symbology

There are some restrictions to area landmark updates. **Appendix A, Table 61: Area Landmark Updates Permitted** lists the area landmark updates the Census Bureau will accept.

### 8.4.1 Reviewing Area Landmarks/Area Hydrography


Table 34: Review Area Landmarks

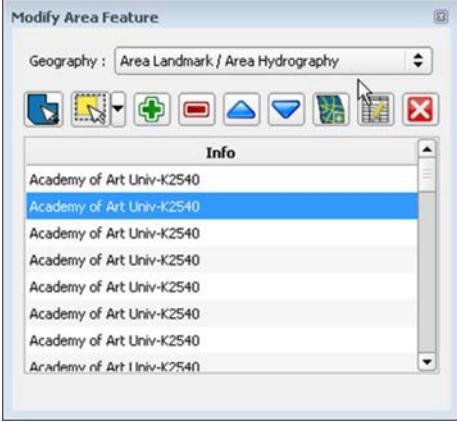
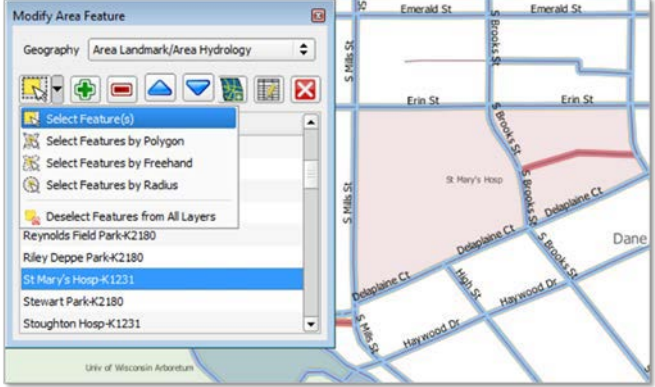
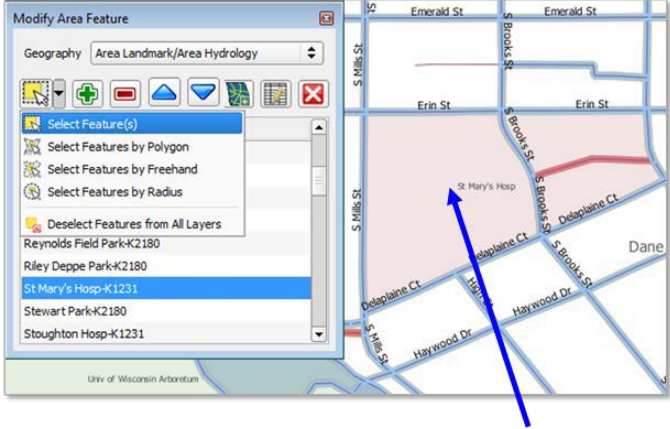
| Step   | Action and Result  |
|--------|--|
| Step 1 | <p>Click the <b>Modify Area Feature</b> button on the VTD toolbar.</p>   |
| Step 2 | <p>The <b>Modify Area Feature</b> dialog box opens. Choose <b>Area Landmark/Area Hydrography</b> from the Geography drop-down menu.</p> <p>The <b>Info</b> window populates with the list of area landmarks and area hydrography in the county. Clicking on the blue arrows on the toolbar moves you up and down through the list, highlighting the feature on the map as the feature is highlighted in the <b>Info</b> window.</p>  |

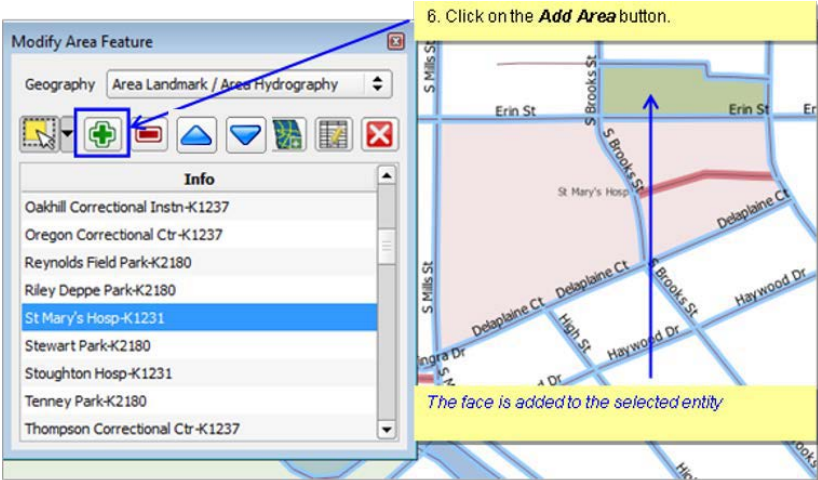
| Step   | Action and Result   |
|--------|---|
| Step 3 |  <p>Double-click on a row in the list to select a landmark. The map zooms you to the selected landmark (Saint Mary's Medical Ctr-K1231). <b>Note:</b> Area landmarks are depicted in different colors based on landmark category.</p> |
| Step 4 |  <p>You can make changes to the selected area landmark with the tools above the <b>Info</b> window.</p>  |

## 8.4.2 Adding Area to an Existing Area Landmark/Area Hydrography

Table 35: Add Area to an Area Landmark


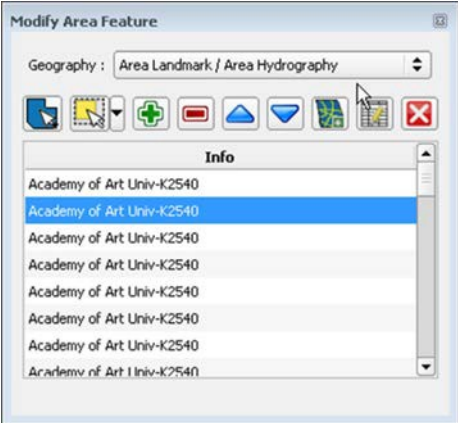
| Step   | Action and Result  |
|--------|--|
| Step 1 | <p>Click the <b>Modify Area Feature</b> button on the VTDP toolbar.</p>  |
| Step 2 | <p>The <b>Modify Area Feature</b> dialog box opens. Choose <b>Area Landmark/Area Hydrography</b> from the drop-down menu.</p>                                |

| Step          | Action and Result  |
|---------------|--|
|               |  <p>The <b>Info</b> window populates with the list of area landmarks and area hydrography in the county. <i>Clicking on the blue arrows on the toolbar moves you up and down through the list.</i></p> |
| <b>Step 3</b> | Click on a row in the list to select the landmark to update. Double click to zoom to the selected landmark on the map. (St Mary's Hosp.)   |
| <b>Step 4</b> | Click on the <b>Select Features</b> button on the toolbar. Choose the method from the drop-down menu to select the face(s) to add to the area landmark.   |
| <b>Step 5</b> |    |

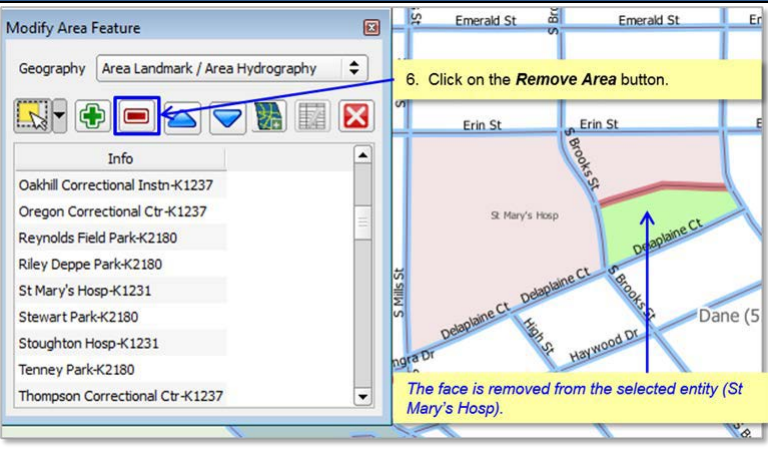
| Step   | Action and Result  |
|--------|--|
|        | Click on the face(s) on the map you want to add to the area landmark. To add more than one face, click on the first face, hold down the <b>CRTL</b> key, and click on the remaining faces you want to add. |
| Step 6 |    |

### 8.4.3 Removing Area from an Area Landmark/Area Hydrography

Table 36: Remove Area from Area Landmark/Area Hydrography

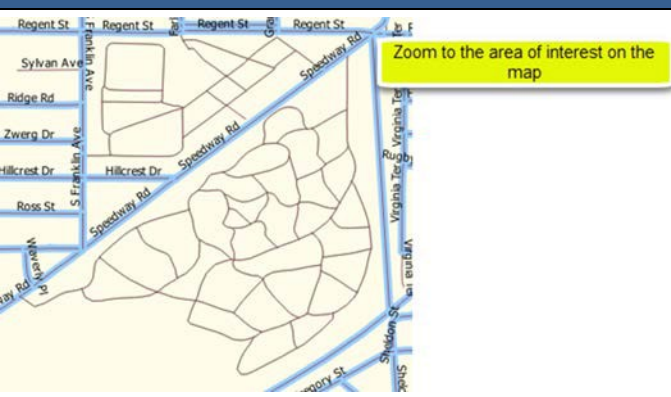

| Step   | Action and Result  |
|--------|--|
| Step 1 | Click the <b>Modify Area Feature</b> button on the VTDP toolbar.   |
| Step 2 | <p>The <b>Modify Area Feature</b> dialog box opens. Choose <b>Area Landmark/Area Hydrography</b> from the drop-down menu.</p>  |

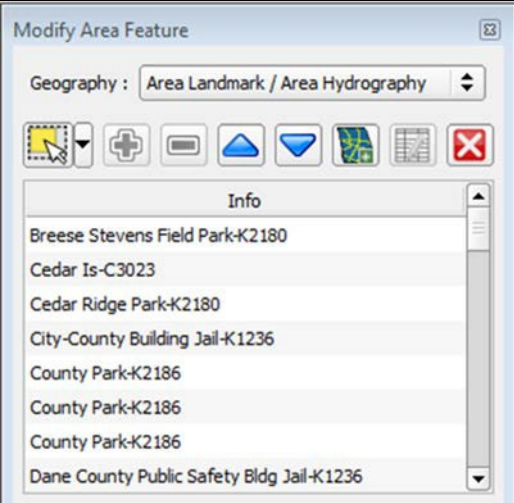
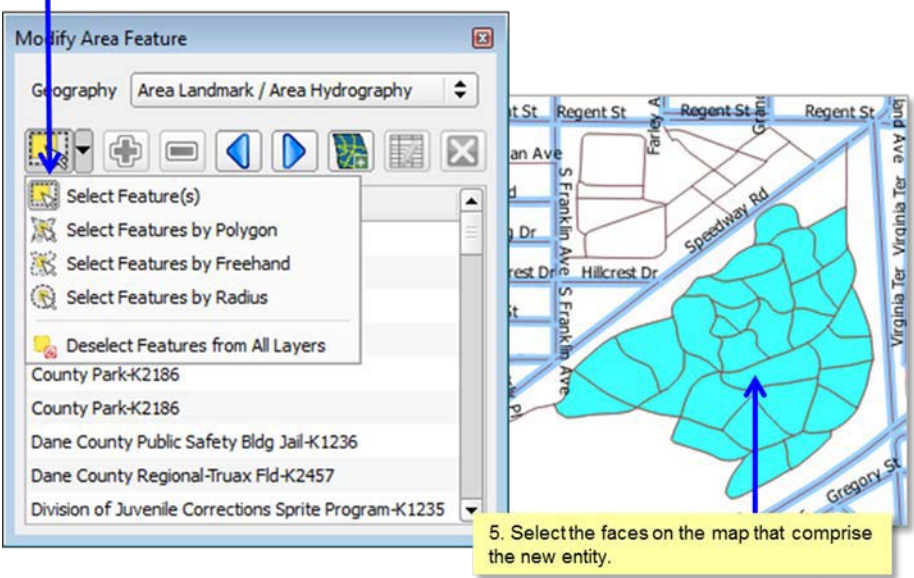

| Step          | Action and Result  |
|---------------|--|
|               | The <b>Info</b> window populates with the list of area landmarks and area hydrography in the county. <i>Clicking on the blue arrows on the toolbar moves you up and down through the list.</i>   |
| <b>Step 3</b> | Double-click on a row in the list to select the landmark to target for update. The map zooms you to the selected landmark (St. Mary's Hosp.)   |
| <b>Step 4</b> | Click on the <b>Select Features</b> button on the toolbar. Choose the method from the drop-down menu to select the face(s) to remove from the landmark. <div data-bbox="495 541 1295 1024" data-label="Image"> </div>  |
| <b>Step 5</b> | Click on the face(s) on the map you want to remove from the area landmark. To remove more than one face, click on the first face, hold down the <b>CTRL</b> key, and click on the remaining faces you want to remove. <div data-bbox="516 1171 1269 1606" data-label="Image"> </div> |

| Step | Action and Result  |
|------|--|
|      |  |

### 8.4.4 Creating a New Area Landmark/Area Hydrography

Table 37: Create a New Area Landmark

| Step          | Action and Result   |
|---------------|---|
| <b>Step 1</b> |    |
| <b>Step 2</b> | <p>Click the <b>Modify Area Feature</b> button on the VTD toolbar.</p>  |
| <b>Step 3</b> | <p>The <b>Modify Area Feature</b> dialog box opens. Choose <b>Area Landmark/Area Hydrography</b> from the drop-down menu.</p>                               |


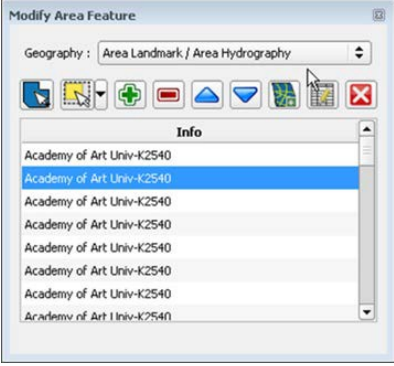
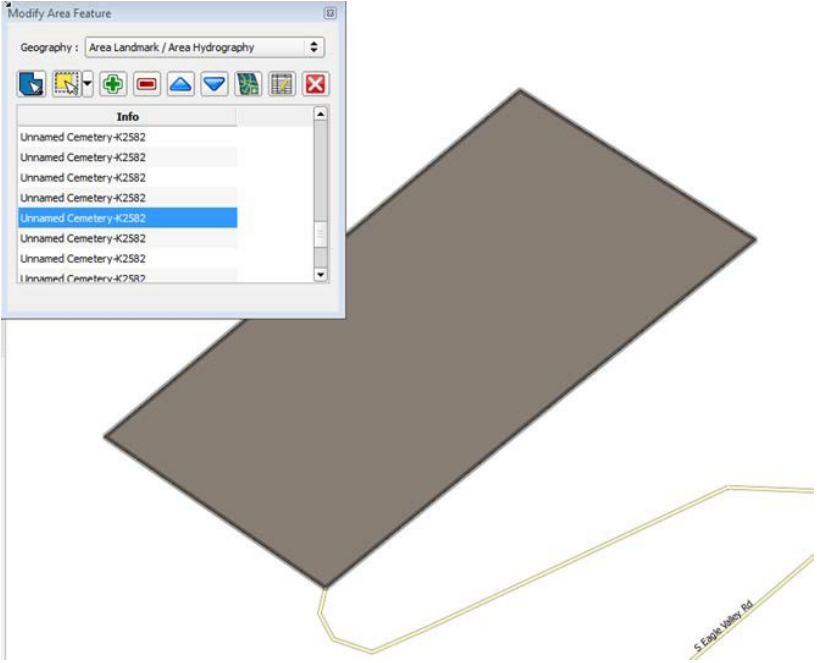
| Step  | Action and Result  |
|---|--|
|   |  <p>The <b>Info</b> window populates with the list of area landmarks and area hydrography in the county.</p>   |
| <p><b>Step 4 through Step 5</b></p>   | <p>Click on the <b>Select Features</b> button on the toolbar. Choose the selection method from the drop-down menu to add faces (polygons) to create the landmark.</p>  <p>5. Select the faces on the map that comprise the new entity.</p>  |
|  | <p>Because areal features are comprised of faces (polygons), you may need to “split” a face to accurately reflect an entity’s boundary. To split a face, digitize a new line that represents the boundary’s location and assign it the appropriate MTFCC. This “splits” the original face into two faces. You can now select the face (polygon) for addition to the new entity. See <b>Table 29</b> for directions on adding a linear feature.</p> |

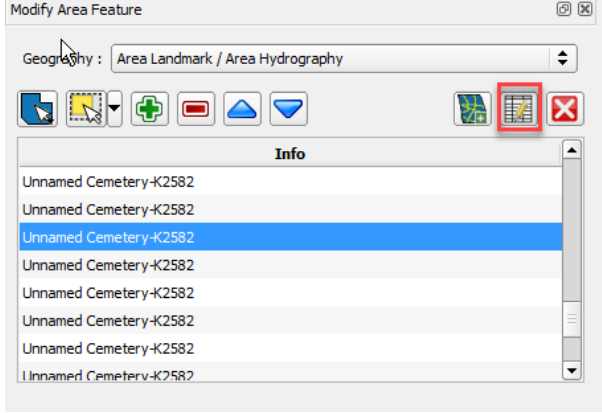
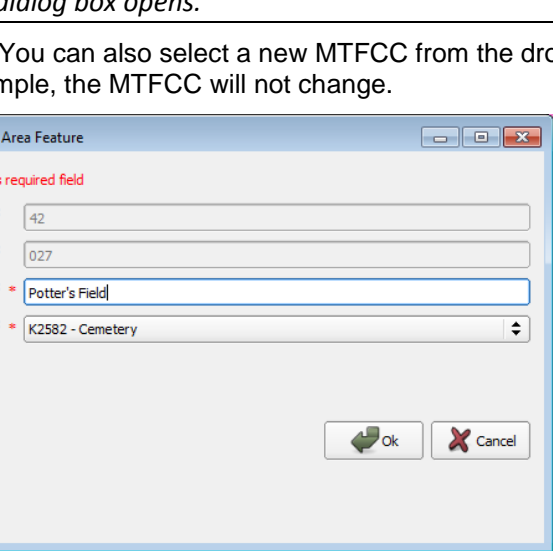
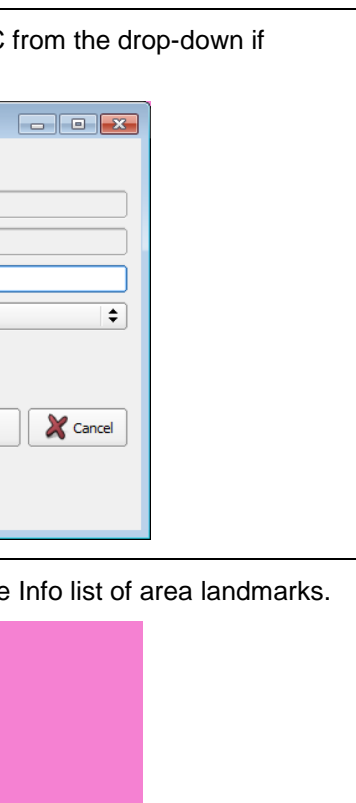


| Step                                | Action and Result   |
|-------------------------------------|---|
| <p><b>Step 6</b></p>                |   |
| <p><b>Step 7 through Step 8</b></p> | <p>The <b>Add Entity Attributes</b> dialog box opens. The State and County code fields are pre-populated.</p> |
| <p><b>Step 9</b></p>                |   |

## 8.4.5 Modifying Area Landmark Attributes


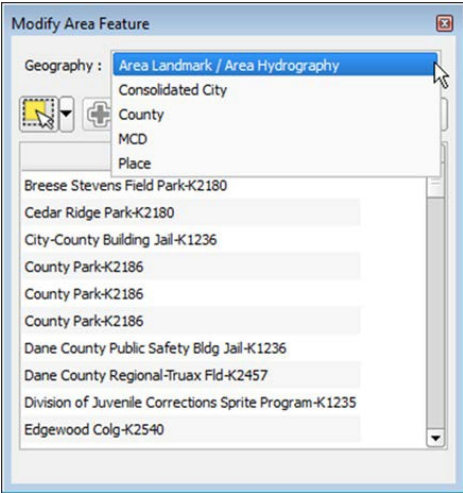
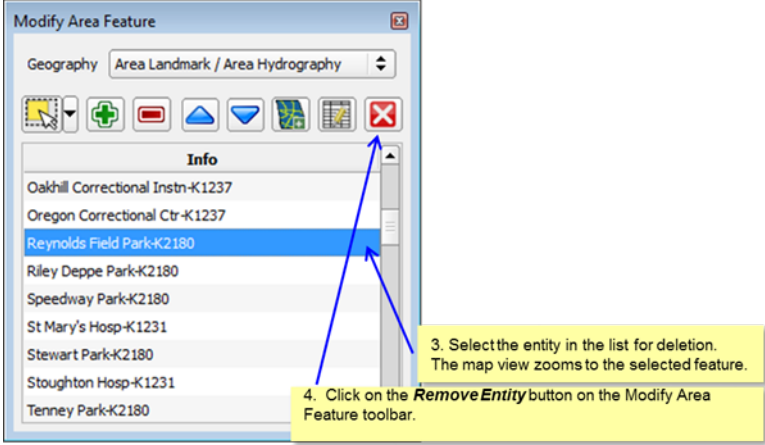
Table 38: Modifying Area Landmark

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 1</b></p> | <p>Click the <b>Modify Area Feature</b> button on the VTDP toolbar.</p>   |
| <p><b>Step 2</b></p> | <p>The <b>Modify Area Feature</b> dialog box opens. Choose <b>Area Landmark/Area Hydrography</b> from the drop-down menu.</p>  <p>The <b>Info</b> window populates with the list of area landmarks and area hydrography in the county. Clicking on the blue arrows on the toolbar moves you up and down through the list.</p> |
| <p><b>Step 3</b></p> | <p>Double-click on a row in the list to select the landmark to update. The map zooms you to the selected landmark (<i>Unnamed Cemetery</i>).</p>    |

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 4</b></p> | <p>Click on the <b>Change Attributes</b> button above the info window.</p>  <p>The <b>Modify Attributes</b> dialog box opens.</p>             |
| <p><b>Step 5</b></p> | <p>Type in the new name. You can also select a new MTFCC from the drop-down if appropriate. In this example, the MTFCC will not change.</p>  |
| <p><b>Step 6</b></p> | <p>The new name for the landmark appears on the map in the Info list of area landmarks.</p>   |

## 8.4.6 Deleting Area Landmarks/Area Hydrography

Table 39: Deleting Area Landmarks

| Step                                | Action and Result   |
|-------------------------------------|---|
| <p><b>Step 1</b></p>                | <p>Click the <b>Modify Area Feature</b> button on the VTDP toolbar.</p>   |
| <p><b>Step 2</b></p>                | <p>The <b>Modify Area Feature</b> dialog box opens. Choose <b>Area Landmark/Area Hydrography</b> from the drop-down menu.</p>  <p>The <b>Info</b> window populates with the list of area landmarks and area hydrography in the county. Clicking on the blue arrows on the toolbar moves you up and down through the list, highlighting the feature on the map as the feature is highlighted in the Infowindow.</p> |
| <p><b>Step 3 through Step 4</b></p> | <p>Click on the area landmark in the <b>Info</b> list to target it for deletion. (Double click on the entity name in the list to target and zoom to it on the map.) Click on the <b>Remove Entity</b> button on the <b>Modify Feature</b> toolbar.</p>    |
| <p><b>Step 5</b></p>                | <p>The <b>Deletion Confirmation</b> dialog box opens. Click <b>OK</b> to delete the feature.</p>  |

| Step | Action and Result   |
|------|---|
|      |  <p data-bbox="690 262 1356 294">The Deletion confirmation dialog box opens.</p> <p data-bbox="690 336 1356 367">5. Click <b>OK</b> to delete the feature.</p> |

## 8.5 Legal Boundary Updates

VTD participants may submit legal boundary updates (annexations, deannexations, incorporations disincorporations and boundary corrections) for counties, minor civil divisions, incorporated places, and consolidated cities. Legal boundary changes are annexations, deannexations, incorporations and disincorporations that are created through passage of a law or local ordinance. Boundary corrections are made to address errors in the Census Bureau boundary representation: the entity has not actually changed its boundary; the Census Bureau’s representation just needs to be corrected. The Census Bureau will reconcile all legal area boundary submissions with the appropriate local governments as part of our Boundary and Annexation Survey.

Although legal documentation (effective date, authorization type, and ordinance number) is not required for legal boundary changes submitted through the VTDP, we strongly encourage you to submit the documentation to expedite our ability to reconcile and process any legal changes reported.

You do not have to provide the legal paperwork for a legal change, just the effective date, authorization type, and documentation number, for the Census Bureau to process a change as a Legal Change.


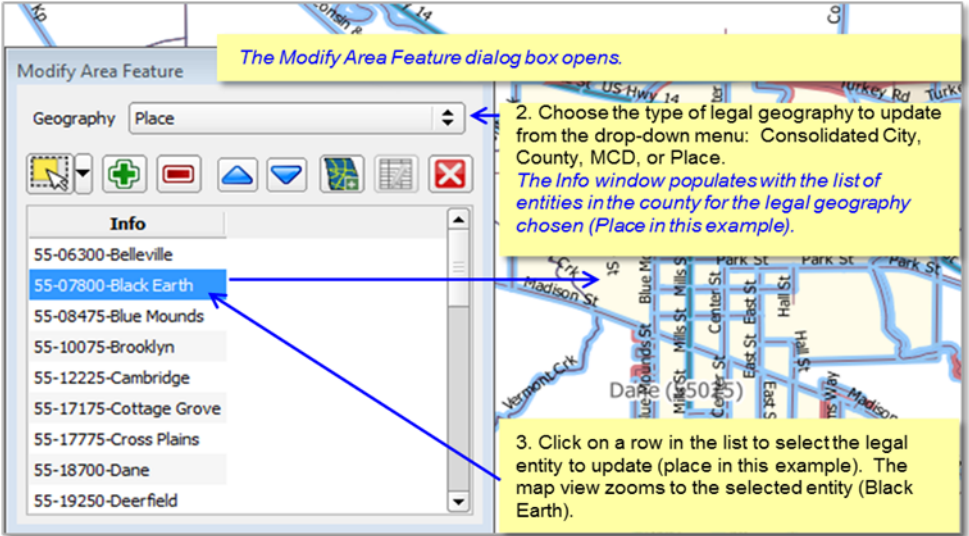
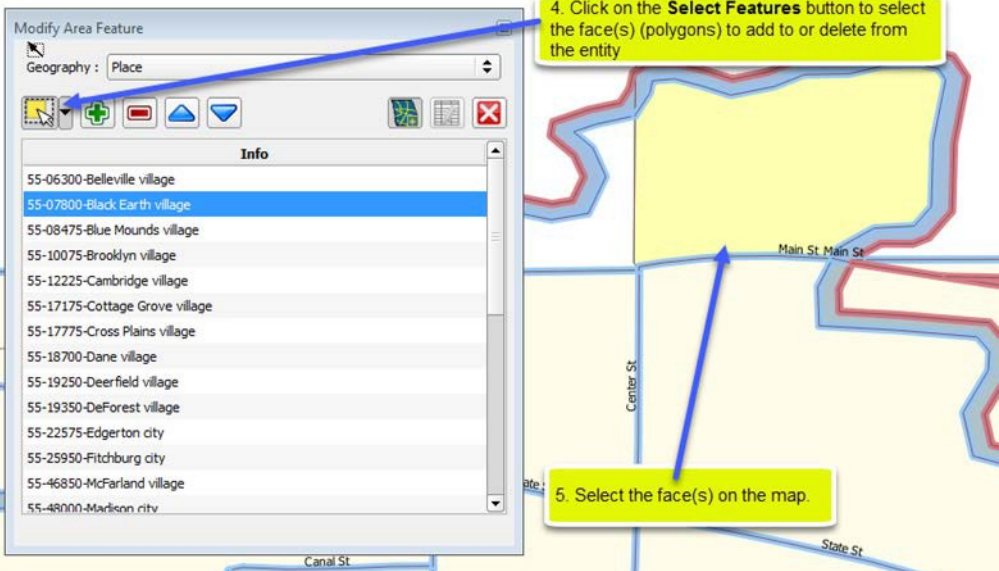
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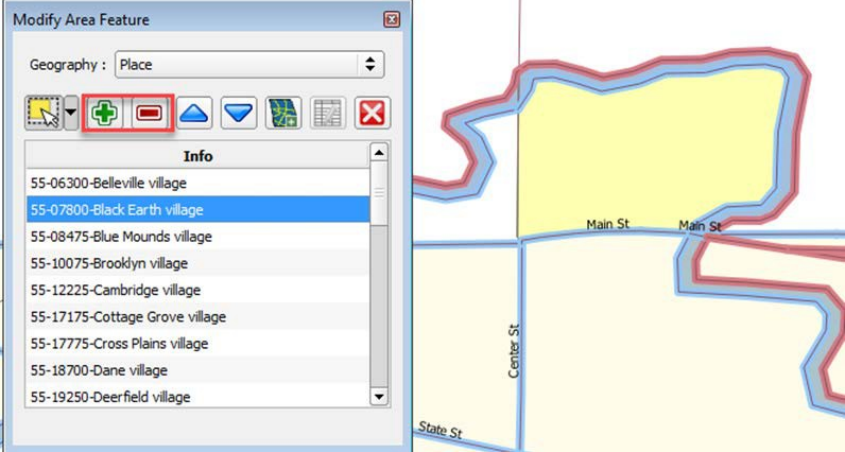


**Important Note:** If you do not plan to provide the legal documentation for a legal boundary change you must report your boundary update as a Boundary Correction, not a Legal Change. (Boundary corrections do not require legal documentation.) This is for Census Bureau processing purposes. You make this selection in the Select Output Type dialog box by clicking the radio button for *Boundary Correction*.

---

## 8.5.1 Adding or Deleting Area to make a Boundary Update (Legal Changes and Boundary Corrections)

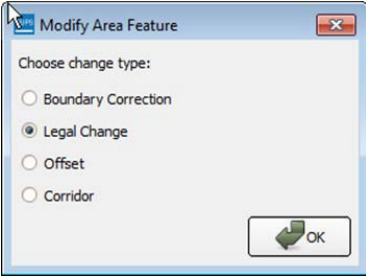
Table 40: Boundary Changes


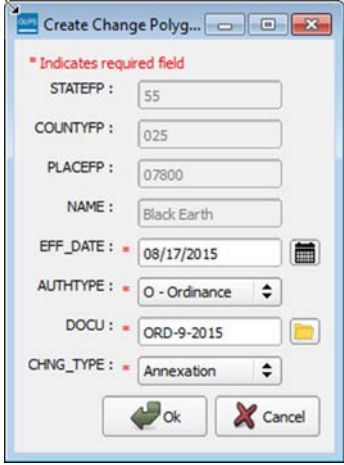
| Step                  | Action and Result  |
|-----------------------|--|
| Step 1                | <p>Click the <b>Modify Area Feature</b> button on the VTD toolbar.</p>   |
| Step 2 through Step 3 | <p>The <b>Modify Area Feature</b> dialog box opens.</p>  <p>2. Choose the type of legal geography to update from the drop-down menu: Consolidated City, County, MCD, or Place.<br/>The <b>Info</b> window populates with the list of entities in the county for the legal geography chosen (Place in this example).</p> <p>3. Click on a row in the list to select the legal entity to update (place in this example). The map view zooms to the selected entity (Black Earth).</p> |
| Step 4 through Step 5 |  <p>4. Click on the <b>Select Features</b> button to select the face(s) (polygons) to add to or delete from the entity</p> <p>5. Select the face(s) on the map.</p>  |

| Step  | Action and Result   |
|---|---|
| <p><b>Step 6</b></p>  |  <p>On the <b>Modify Area Feature</b> toolbar, click the <b>Add Area</b> or the <b>Remove Area</b> button, as appropriate. For this example, <b>Add Area</b> is chosen. At this point, follow the directions for submitting a Legal Change (<b>Table 41</b>), or for submitting a Boundary Correction (<b>Table 42</b>).</p>  |
|    | <p>You may need to “split” a face to accurately reflect an entity’s boundary. To split a face, digitize a new line that represents the boundary’s location and assign it the appropriate MTFCC. This “splits” the original face into two faces. You can now select the face (polygon) for addition to the new entity. See <b>Table 29</b> for directions on adding a linear feature.</p>  |
|  | <p>If you need to make boundary updates for an incorporated place that is located in one or more counties, and the updates are in more than one county, you must make the updates in the working county. After completing the updates in your initial working county, return to <b>Map Management</b>, select the other county as the working county, and make the boundary updates. Repeat this process for each additional county as necessary.</p> |



### 8.5.1.1 Submitting Legal Boundary Changes

**Table 41: Submit Legal Changes**

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 1</b></p> | <p>The <b>Choose Change Type</b> dialog box opens. Click the <b>Legal Change</b> radio button.</p>  <p>Click <b>OK</b>.</p> |

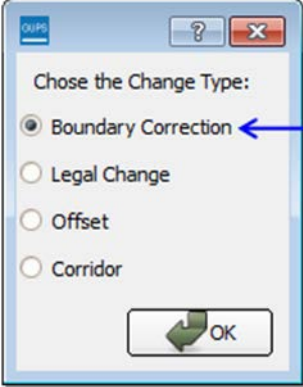
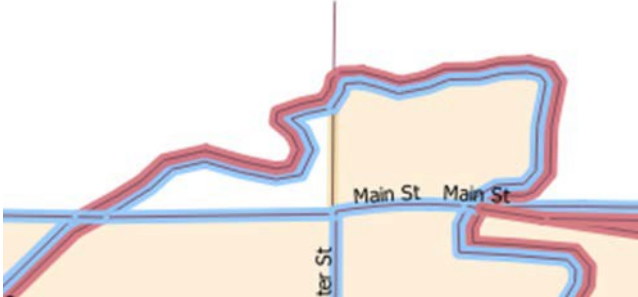
| Step  | Action and Result   |
|---|---|
|  | <p>If you do not plan to provide the legal documentation (effective date authorization type, and documentation number), then choose the <b>Boundary Correction</b> radio button, even if the change is technically a legal update.</p>  |
| <p><b>Step 2</b></p>  | <p>The <b>Create Change Polygon</b> dialog box opens. The State, County, Place Name, and LSAD fields are prepopulated. Fill in the other necessary information.</p>  <p>a) Fill in the <b>Effective Date</b> (EFF_DATE) of the change.</p> <p>b) Select the <b>Authorization Type</b> (AUTHTYPE) from the drop-down menu:</p> <ul style="list-style-type: none"> <li>L – Local Law</li> <li>O – Ordinance</li> <li>R – Resolution</li> <li>S – State-Level Action</li> <li>X – Other</li> </ul> <p>c) Type in the <b>Documentation Number</b> (DOCU) or appropriate information from the authorization type chosen if you do not plan to provide the actual legal action paperwork.</p> <p><b>OR</b></p> <p>Click the <b>Open Folder</b> button if you wish to provide the paperwork to support the documentation. Navigate to the folder on your computer to select the file for upload. <i>GUPS automatically populates the <b>DOCU</b> field with the file name.</i></p> <p>d) Choose the appropriate <b>Change Type</b> (CHNG_TYPE) from the drop-down menu.</p> <p>e) Click <b>OK</b> to save the change.</p> <p>The selected face (polygon) is added to the legal entity.</p> |




| Step  | Action and Result  |
|---|--|
|   |    |
|  | <p>The added face(s) may have a different fill than the rest of the incorporated place. This is because the face is also part of a “vtd18_&lt;ssccc&gt;_changes_inplace” layer, or changes layer, in the <b>Table of Contents</b>. This layer is used in Census Bureau processing to tell us what faces need to be updated. If you turn the “<b>changes</b>” layer off by unchecking it in the <b>Table of Contents</b>, you will see the face is symbolized as part of the place you added it to.</p> |

### 8.5.1.2 Submitting Boundary Corrections


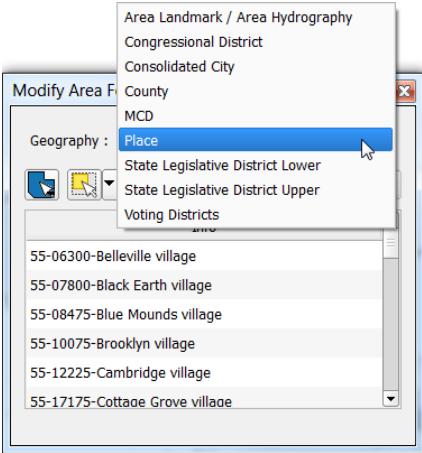
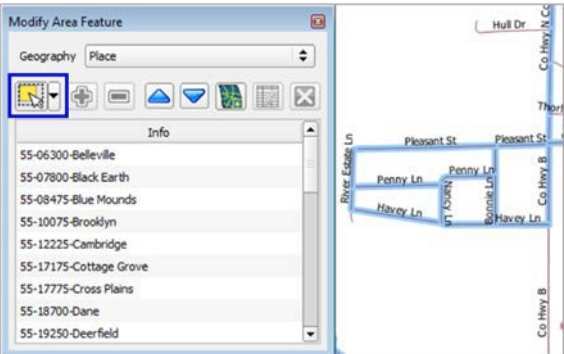
Table 42: Submit a Boundary Correction

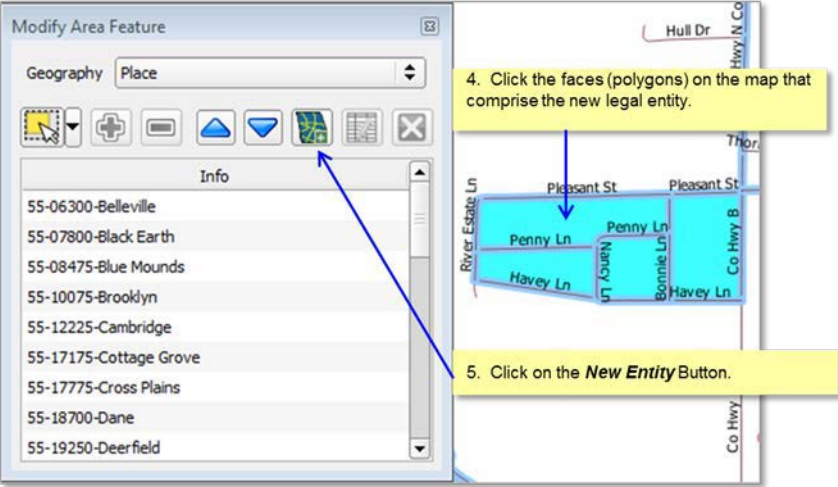
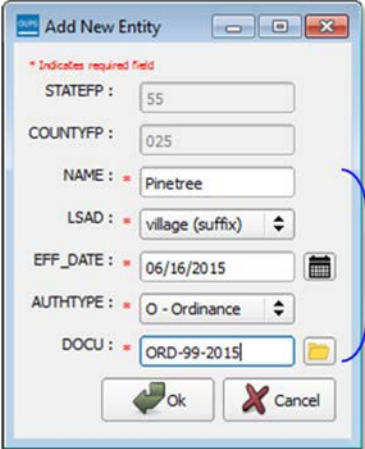
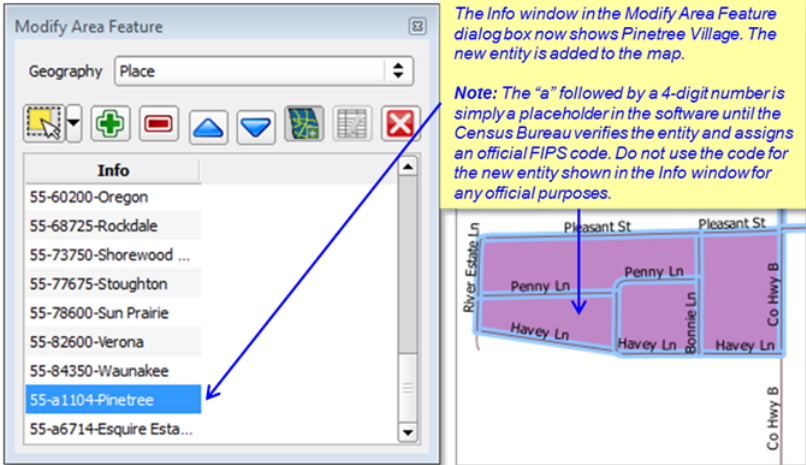
| Step          | Action and Result  |
|---------------|--|
| <b>Step 1</b> | <p>The <b>Choose Change Type</b> dialog box opens.</p>  <p>Click the radio button for <b>Boundary Correction</b>. Click <b>OK</b>.</p> |
| <b>Step 2</b> |    |


| Step  | Action and Result  |
|---|--|
|   | The selected face (polygon) is added to the legal entity, with no documentation required, as for a Legal Change.   |
|  | The added face(s) may have a different fill than the rest of the incorporated place. This is because the face is also part of a “vtd18_<ssccc>_changes_inplace” layer, or changes layer, in the <b>Table of Contents</b> . This layer is used in Census Bureau processing to tell us what faces need to be recoded. If you turn the “changes” layer off by unchecking it in the <b>Table of Contents</b> , you will see the face is symbolized as part of the place you added it to. |

### 8.5.1.3 Adding a New Legal Entity

Table 43: Add a New Legal Entity


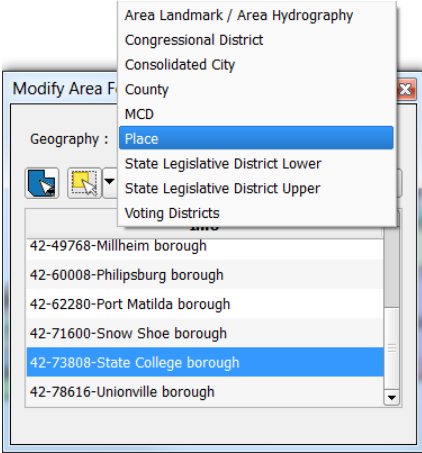
| Step          | Action and Result   |
|---------------|---|
| <b>Step 1</b> | Click the <b>Modify Area Feature</b> button on the VTD toolbar.<br>   |
| <b>Step 2</b> | Click on the <b>Geography</b> drop-down menu to choose the type of legal entity to add. In this example, we will add a new incorporated place.<br> |
| <b>Step 3</b> | Click the <b>Select Features</b> button.<br>  |

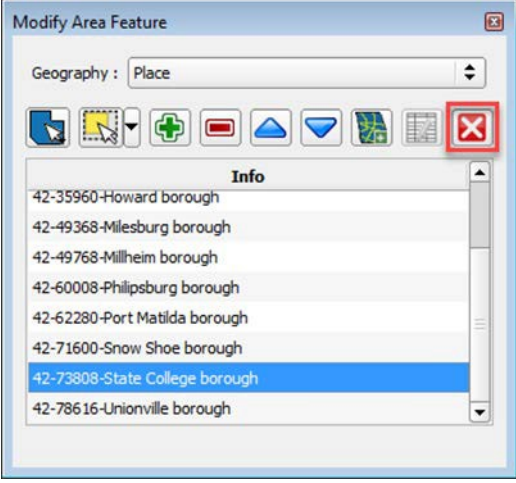

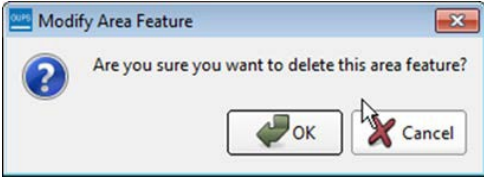
| Step                                 | Action and Result   |
|--------------------------------------|---|
| <p><b>Step 4 through Step 5</b></p>  |  <p>4. Click the faces (polygons) on the map that comprise the new legal entity.</p> <p>5. Click on the <b>New Entity</b> Button.</p>   |
| <p><b>Step 6 through Step 11</b></p> | <p>The <b>Add New Entity</b> dialog box opens.</p>  <p>6. Type the name in the <b>Name</b> field. Do not include City, Village, Town, etc. in the name field.</p> <p>7. Choose the type of Legal/Statistical area from the drop-down <b>LSAD</b> menu (City, Village, Town, etc.)</p> <p>8. Choose the <b>Effective Date</b> the change became legal by clicking on the calendar to select the appropriate date.</p> <p>9. Choose the <b>Authorization Type</b> from the drop-down menu</p> <p>10. Type in the <b>Documentation</b>, or if you prefer, you can click on the <b>Open Folder</b> button, and upload the actual paperwork, which will automatically populate the DOCU field with the filename.</p> <p>11. Click <b>OK</b>.</p> |
| <p><b>Step 12</b></p>                |  <p>The <b>Info</b> window in the <b>Modify Area Feature</b> dialog box now shows <b>Pinetree Village</b>. The new entity is added to the map.</p> <p><b>Note:</b> The "a" followed by a 4-digit number is simply a placeholder in the software until the Census Bureau verifies the entity and assigns an official FIPS code. Do not use the code for the new entity shown in the Info window for any official purposes.</p>   |

| Step  | Action and Result  |
|---|--|
|  | <p>If the new entity crosses a county boundary, you must add the new entity in both counties separately. After making the change in your working county, return to <b>Map Management</b>, select the other county as the working county, and proceed to add the new entity in this county as well. If the added entity crosses more than one county boundary, complete the addition in each county affected.</p> |

### 8.5.1.4 Deleting a Legal Entity

**Table 44: Delete a New Legal Entity**

| Step          | Action and Result  |
|---------------|--|
| <b>Step 1</b> | <p>Click the <b>Modify Area Feature</b> button on the VTD toolbar.</p>   |
| <b>Step 2</b> | <p><i>The <b>Modify Area Feature</b> dialog box opens.</i> Choose the legal geography to update from the drop-down menu (place, in this example).</p>  <p><i>The <b>Info</b> window populates with the list of entities in the county for the legal geography chosen.</i></p> |
| <b>Step 3</b> | <p>Click on a row in the list to select (target) the legal entity for deletion. Double click if you want to zoom to the entity on the map.</p>   |
| <b>Step 4</b> | <p>Click the <b>Remove Entity</b> button.</p>  |

| Step  | Action and Result   |
|---|---|
|   |   |
|  | <p>If the deleted entity crosses a county boundary, you must delete the entity in both counties separately. After making the change in your working county, return to <b>Map Management</b>, select the other county as the working, and proceed to delete the entity in this county as well. If the deleted entity crosses more than one county boundary, complete the deletion in each county affected.</p> |
| <p><b>Step 5</b></p>  | <p><i>The <b>Deletion Confirmation</b> dialog box opens.</i></p>  <p>Click <b>OK</b> to delete the entity. <i>The entity will still appear on the map, but its symbology will change. It will be flagged for deletion by the Census Bureau.</i></p>  |

## 8.6 Updating Congressional and State Legislative Districts

GUPS allows you to make updates to your state’s congressional districts (CDs) and state legislative districts (SLDs). This may be necessary if you are making changes to voting district or legal geography and need to correct the congressional or state legislative district to maintain spatial relationships, or if you need to make a correction to the spatial representation of the CD or SLD boundary. Larger changes that occur during redistricting are collected in a separate operation conducted by the Census Bureau every two years, in advance of new Congressional Sessions.

You can use the Modify Area Feature tool to make CD and SLD updates, the same way it is used to make updates to Voting Districts. (**See Section 8.1**) The only difference is that you will select Congressional District, State Legislative District Lower, and State Legislative District Upper, from the Geography dropdown menu. Once you have selected the district you need to modify, you can select faces and use the add area or remove area tools to make updates. You cannot delete or create new CDs or SLDs using GUPS. Those updates would be considered

significant and need to be collected in our official CD and SLD update cycles. Please contact the Census Redistricting and Voting Rights Data Office at 301-763-4039, or [rdo@census.gov](mailto:rdo@census.gov) for more information.

## 8.7 VTD Criteria Check and Change Polygon Review

GUPS provides two tools — the **VTD Criteria Review** tool and **Review Change Polygons** tool -- to help you review and validate the updates you have made during the VTDP.

### 8.7.1 VTD Criteria Review Tool (for VTDs, CDs, and SLDs)

The **VTD Criteria Review** Tool performs two types of checks: coverage checks, where it identifies faces not assigned to any VTD, and non- contiguous checks, where it looks for VTDs, CDs, and/or SLDs in multiple pieces. GUPS will not allow users to delete or remove area from CDs or SLDs, so all faces should always be assigned to a CD and SLDs. (GUPS will only remove CD or SLD coverage from a face when that face is added to another CD or SLD.)

Coverage failures are critical data errors that must be fixed before exporting data to the Census Bureau. All faces in a county must be assigned to a VTD or specifically coded as “unassigned.” Non-contiguous failures are warnings. The Census would like you to review these non-contiguous entities, but recognizes they may be valid.

**Table 46** explains how to run the **VTD Criteria Review** Tool.


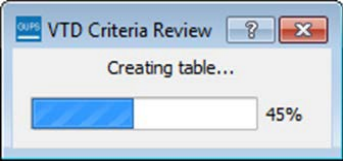
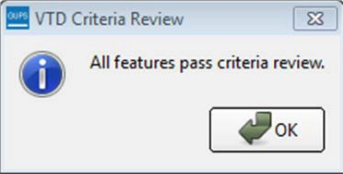


**Note:** You must run the **VTD Criteria Review** Tool before exporting your file for submission to the Census Bureau. GUPS will not allow you to export your file if you have not run this tool.

**Table 45: VTD Criteria Review Tool Error and Warning Messages**

| Criteria                    | Error/Warning  | Fix/Ignore    |
|-----------------------------|----------------|---------------|
| Coverage (Unassigned Faces) | <b>Error</b>   | Must fix      |
| Non-contiguous              | <b>Warning</b> | Fix or Ignore |


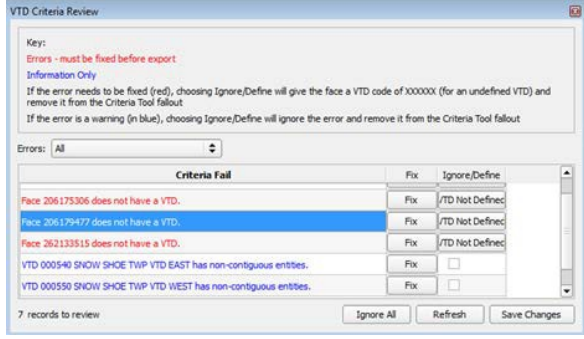
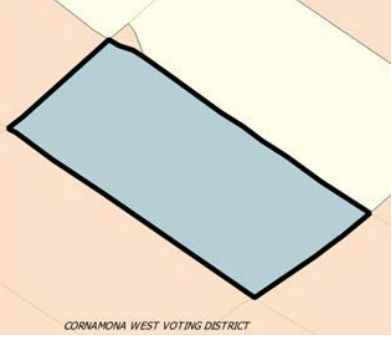
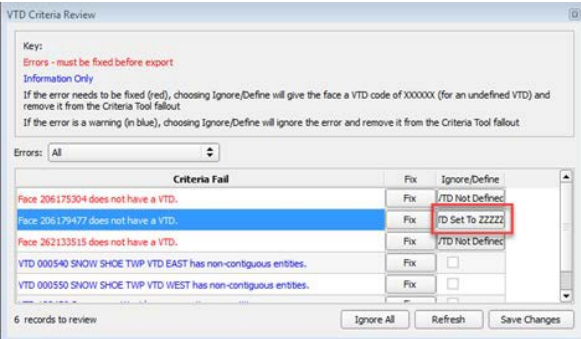
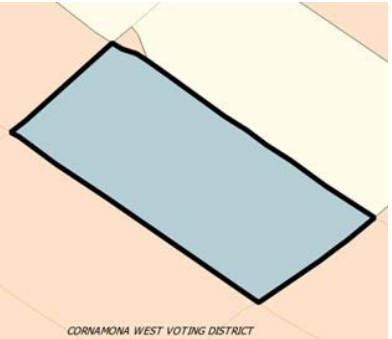
**Table 46: The VTD Criteria Review Tool**

| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 1</b></p> | <p>Begin by selecting the <b>VTD Criteria Review</b> tool from the VTD toolbar to start the review.</p>  <p><b>Please note that this process may take several minutes to complete.</b></p> <p>Once clicked, the following dialog box will appear indicating the tool's progress in executing all criteria checks.</p>    |
| <p><b>Step 2</b></p> | <p>If there are no unassigned faces or noncontiguous VTDs, the following dialog box will pop-up. In this scenario, all features have passed the criteria review.</p>  <p>Click <b>OK</b>.</p> <p>If errors are identified, a <b>VTD Criteria Review</b> table will open and show a list of coverage failure errors (unassigned faces) in red and non-contiguous failure warnings in blue. See <b>Section 8.7.1.1</b> for reviewing and resolving coverage failures, and <b>Section 8.7.1.2</b> for resolving non-contiguous failures.</p> |


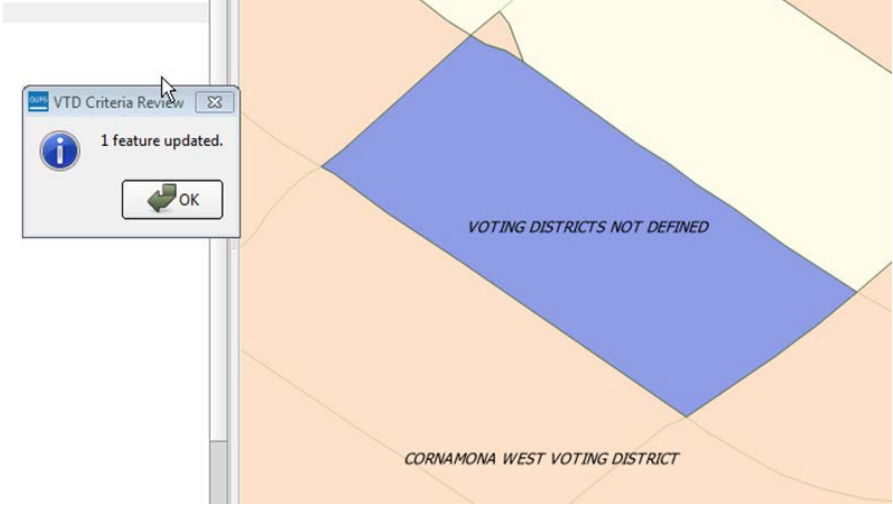
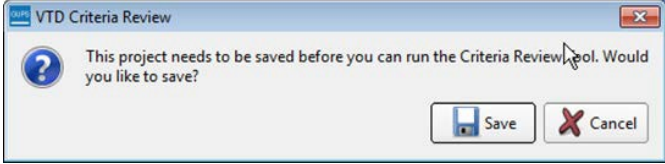
### 8.7.1.1 VTD Coverage Failures (Unassigned Faces)

VTD Coverage failures will always appear in red in the **VTD Criteria Review** table, and provide the face ID with the message that the face “does not have a VTD.” **You must fix these VTD coverage failures before you can export the file to the Census Bureau. However, you can create a Share with Participant File with coverage failures.**

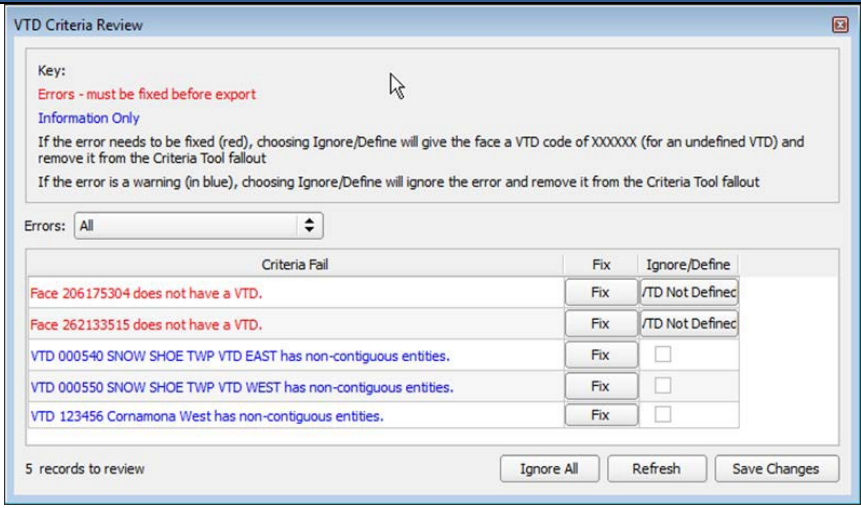
**Table 47: Unassigned Faces**

| Step  | Action and Result  |
|---|--|
|  | <p><b>Note:</b> You can use the Errors drop-down to filter which types of errors display in the <b>Criteria Fail Table</b>.</p>  |
| <p><b>Step 1</b></p>  | <p>You can address VTD coverage failures in two ways:</p> <p style="padding-left: 40px;">A. Confirming that the area does not belong to any VTD and assigning it a VTD code of ZZZZZZ (not defined) as described in steps 2- 4 below,</p> <p><b>OR</b></p> <p style="padding-left: 40px;">B. Assigning the area to a VTD as described in steps 5- 7.</p> <p>Click on the <b>“Face does not have a VTD”</b> message in the <b>Criteria Fail column</b> to zoom to that face on the map.</p> <div style="display: flex; justify-content: space-between; align-items: center;">   </div> |
| <p><b>To keep the area unassigned to any VTD:</b></p>                             |  |
| <p><b>Step 2</b></p>  | <p>To keep the area unassigned to any VTD, click on the <b>“VTD Not Defined”</b> button in the <b>Ignore/Delete column</b> next to the area. <i>The text on the button will change to read “VTD Set to ZZZZZZ.” (ZZZZZZ is the code the Census Bureau assigns to area not part of any VTD.) Assigning the ZZZZZZ code to faces should only be done sparingly.</i></p> <div style="display: flex; justify-content: space-between; align-items: center;">   </div>  |



|   |  |
|---|--|
|   | Click <b>Save Changes</b> in the lower right corner of the <b>VTD Criteria Review dialog</b> box   |
|  | Clicking <b>Refresh</b> will cause the VTD Criteria Review to run again, which can take several minutes. You may wish to fix/define multiple or all failures before refreshing.  |
| <b>Step 3</b>   | <p>Click <b>Refresh</b>. A dialog box will appear telling you how many features were updated and the face(s) in the map view will be labeled <b>"VOTING DISTRICTS NOT DEFINED."</b></p>   |
| <b>Step 4</b>   | <p>Click <b>OK</b>.</p> <p>If more features need to be addressed, the <b>VTD Criteria Review</b> dialog box appears to tell you the project needs to be saved before running the <b>Criteria Review Tool</b>. Click <b>Save</b> and the project will save and the <b>VTD Criteria Review</b> tool will run again.</p>  <p>The face you assigned to ZZZZZZ no longer appears in the Criteria Fail list.</p> |

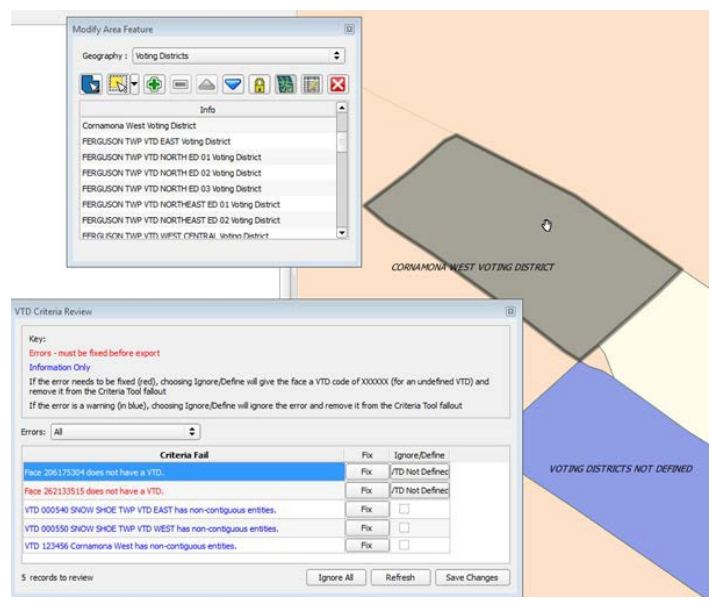
| Step | Action and Result |
|------|-------------------|
|------|-------------------|



Address other failures as needed.

**To assign area to an existing VTD or create a new VTD:**

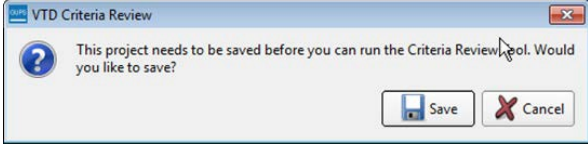
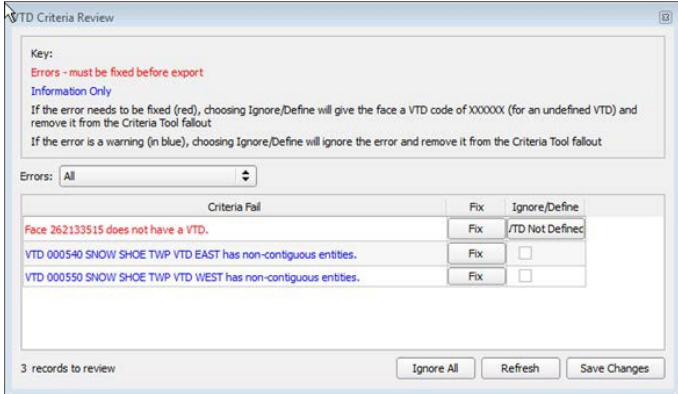
**Step 5** To assign the area to a VTD, click on the **Fix** button next to the failure. Selecting the **Fix** button will bring up the **Modify Area Feature** tool. At this time, you have to decide if you want to add the face to an existing VTD (See **Section 8.2.1**) or create a new VTD (See **Section 8.2.3**).



Once addressed, the failure will not disappear from the Criteria Fail list until you click the **Refresh** button at the bottom of the dialog box.

|  |   |
|--|---|
|  | Clicking <b>Refresh</b> will cause the VTD Criteria Review to run again, which can take several minutes. You may wish to fix/define multiple or all failures before refreshing. |
|--|---|

|               |                        |
|---------------|------------------------|
| <b>Step 6</b> | Click <b>Refresh</b> . |
|---------------|------------------------|

| Step                 | Action and Result   |
|----------------------|---|
|                      | <p>The <b>VTD Criteria Review dialog box</b> appears to tell you the project needs to be saved before running the <b>Criteria Review Tool</b>. Click <b>Save</b> and the project will save and the <b>VTD Criteria Review</b> tool will run again.</p>  |
| <p><b>Step 7</b></p> | <p>The <b>VTD Criteria Check</b> reruns, and the face you assigned to an existing VTD no longer appears in the <b>Criteria Fail</b> list.</p>   |

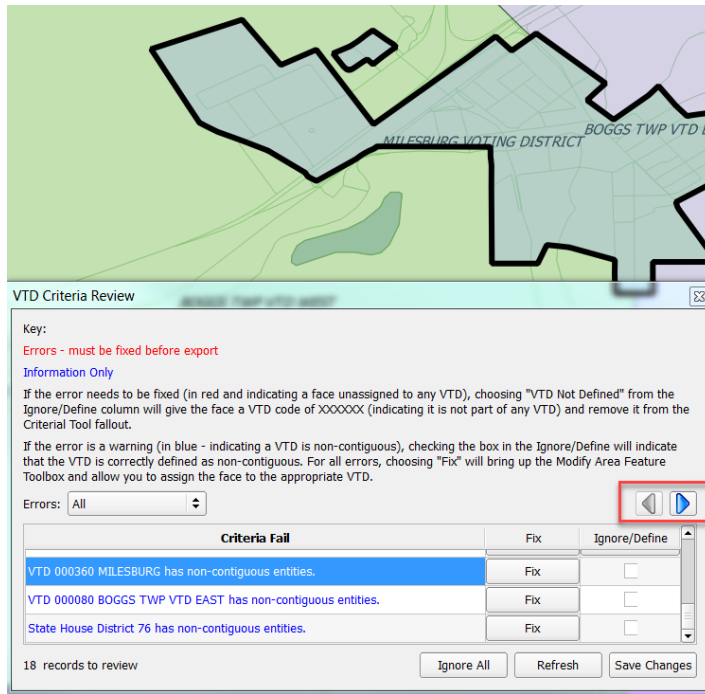
### 8.7.1.2 Non-Contiguous VTD, CD or SLD Failures

Non-contiguous VTDs appear in blue in the **VTD Criteria Review table**, and provides the names of VTDs, CDs, and/or SLDs with non-contiguous pieces. Non-contiguous failures are warnings and are not required to be reviewed or fixed before sending your file to the Census Bureau, because some VTDs, CDs and SLDs may legitimately be non-contiguous. Non-contiguous entity warnings can be useful if, for example, you have created a new VTD but have missed selecting some faces from other existing VTDs.

**Table 48: Addressing Non-Contiguous VTDs**

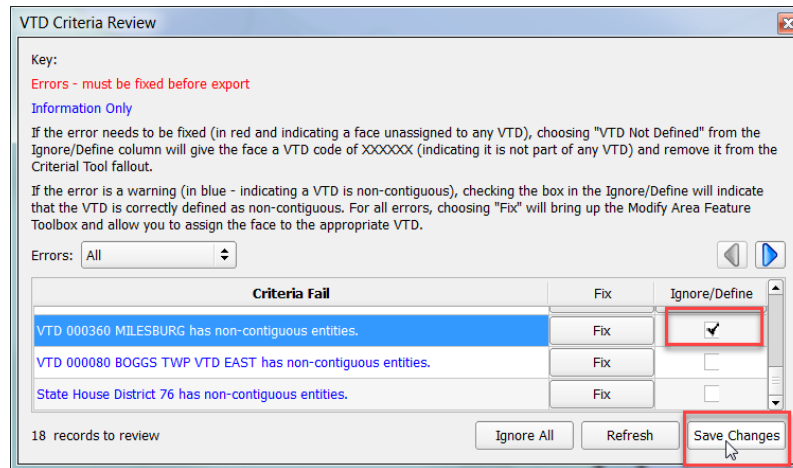
| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 1</b></p> | <p>After running the <b>VTD Criteria Check</b> the <b>VTD Criteria Review dialog box</b> appears. You can address the non-contiguous VTD, CDs, or SLDs in two ways: <b>Ignore</b> (described in Steps 2 through 4) or <b>Fix</b> by assigning a face(s) to another VTD, CD or SLD (described in Step 5 through 10).</p> |
| <p><b>Step 2</b></p> | <p>Click on the <b>&lt;entity&gt; has non-contiguous entities</b> failure in the <b>Criteria Fail</b> column to zoom to the entity (VTD, CD, or SLD) with the failure. In the example below, we will address a non-contiguous failures with VTDs, but GUPS will work the same for resolving CD or SLD failures.</p>     |

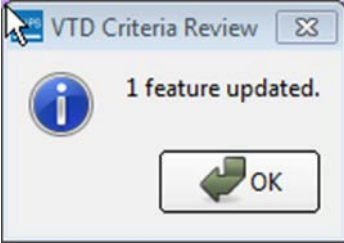

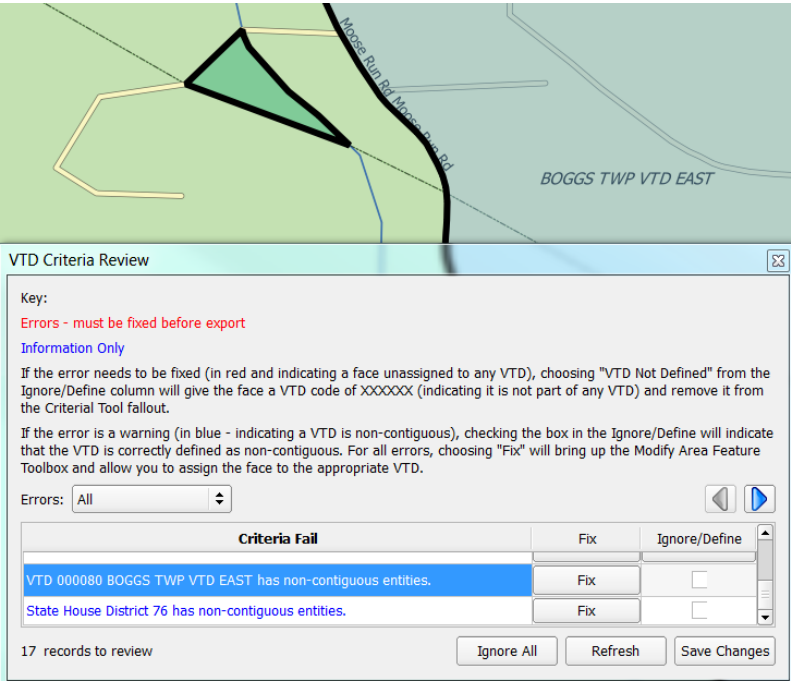
| Step | Action and Result |
|------|-------------------|
|------|-------------------|

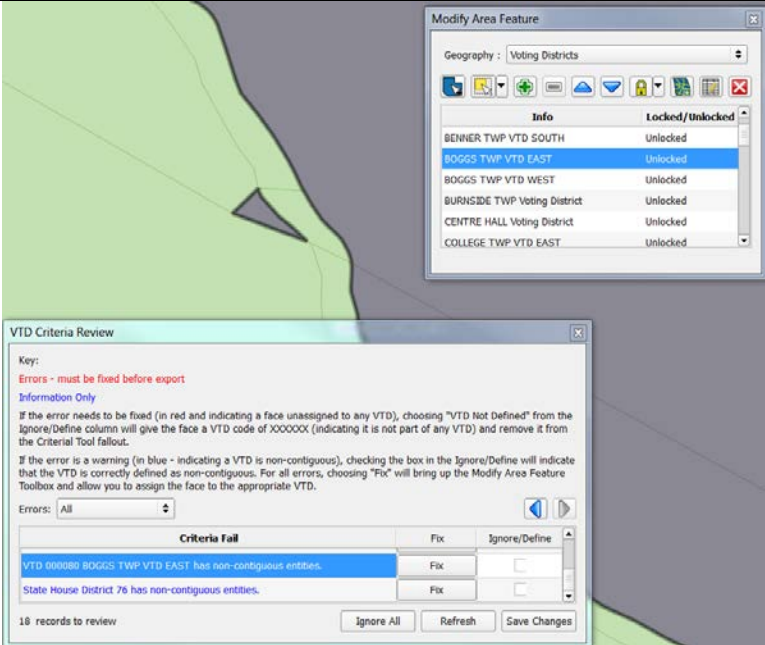

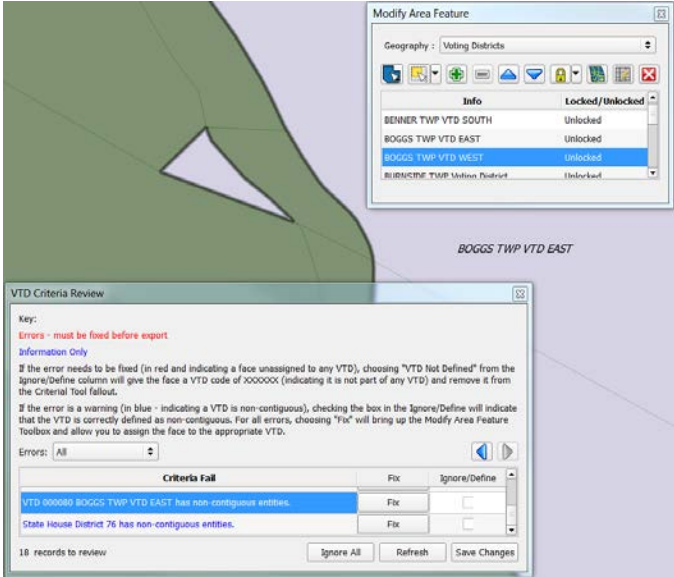



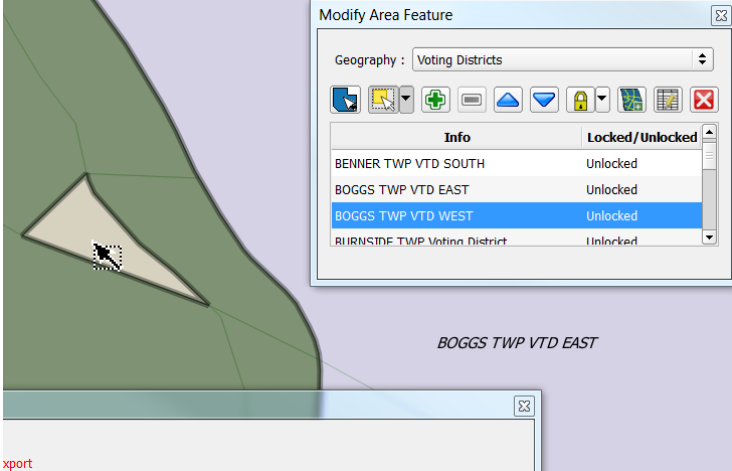
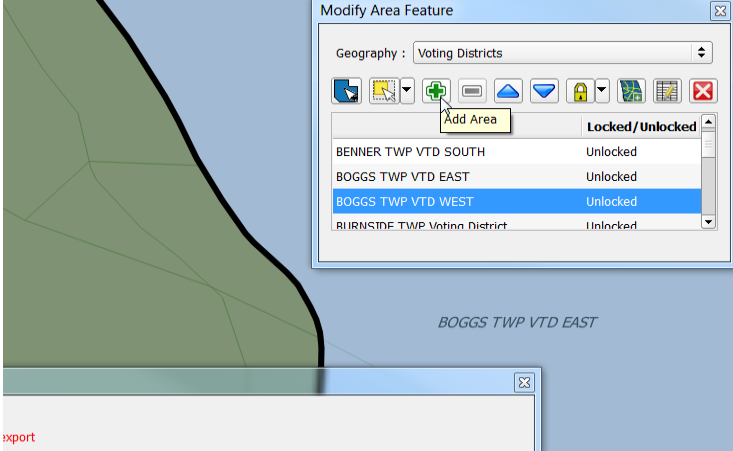
Initially, clicking on the failure will zoom you to the extent of the entire VTD. Click on the blue arrow just above the criteria fail list to zoom to each individual non-contiguous piece of the entity.

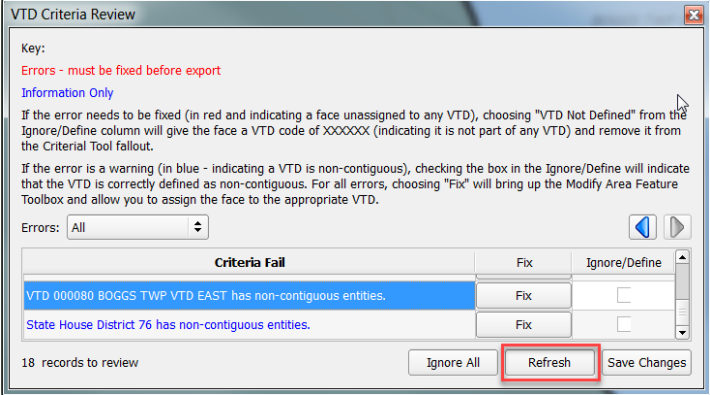
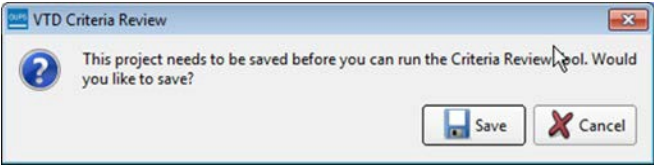
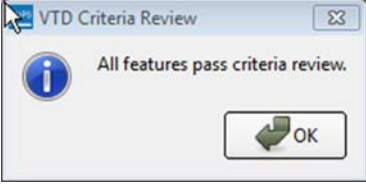
|               |  |
|---------------|--|
| <b>Step 3</b> | <p>If you determine the VTD should be non-contiguous, as we have in this example for the MILESBURG VTD, check the <b>box</b> in the <b>“Ignore/Define”</b> column. Click <b>“Save Changes”</b> in the bottom right of the <b>VTD Criteria Review</b> dialog box.</p> |
|---------------|--|



|   |   |
|---|---|
| <p><b>Step 4</b></p>  | <p>A pop-up message will appear indicated that you have updated the feature.</p>  <p>Click <b>OK</b>.</p>   |
|  | <p>Clicking <b>Save Changes</b> will cause the <b>VTD Criteria Review tool</b> to close. You will have to rerun it to see additional failures. You may wish to just check the <b>"Ignore"</b> box and work on other failures before clicking <b>Save Changes</b>, as running the tool can take several minutes.</p>   |
| <p><b>Step 5</b></p>  | <p>If you determine the VTD should not be non-contiguous and realize you need to correct a digitizing error, as we have with BOGGS TWP VTD EAST, you can use the <b>Modify Areas Feature</b> tool to fix the problem.</p> <p>Click on the <b>VTD has non-contiguous entities</b> failure in the <b>Criteria Fail</b> column to zoom to the VTD with the failure. Again, initially, GUPS will zoom to the entire VTD area. Click on the blue arrow to zoom to each individual piece.</p>  |
| <p><b>Step 6</b></p>  | <p>In this example, it appears that when adding area to the BOGGS TWP VTD West VTD (in light green) from BOGGS EAST TWP VTD (in blue), a face was missed from the selection. Click the <b>Fix</b> button next to the failure in the <b>Criteria Fail</b> list.</p> <p>The <b>Modify Area tool</b> opens and BOGGS TWP VTD EAST is the target VTD as indicated by the shading and that it is highlighted in the Info box of the <b>Modify Area Feature tool</b>.</p>   |

| Step                 | Action and Result   |
|----------------------|---|
|                      |   |
| <p><b>Step 7</b></p> | <p>Because this face needs to be added to BOGGS TWP VTD WEST VTD to correct the problem, make that VTD the target layer, either by selecting it in the <b>Info List</b> in the <b>Modify Area Feature tool</b>, or clicking the “<b>Select Target Area</b>”  button in the <b>Modify Area Feature tool</b> and then clicking on BOGGS TWP VTD WEST on the map.</p>  |
| <p><b>Step 8</b></p> | <p>In the <b>Modify Area Feature tool</b>, click on the <b>Select Feature Tool</b>  and then click on the face that needs to be added to BOGGS TWP VTD WEST on the map.</p>  |

| Step                  | Action and Result  |
|-----------------------|--|
|                       |    |
| <p><b>Step 9</b></p>  | <p>Click on <b>Add Area</b> button in the <b>Modify Area tool</b> to add the face to the target VTD (BOGGS TWP VTD WEST).</p>  <p><i>The face is now assigned to the correct VTD.</i></p> |
| <p><b>Step 10</b></p> | <p>In the <b>VTD Criteria Review tool</b>, click on the <b>Refresh</b> button.</p>   |

| Step                  | Action and Result   |
|-----------------------|---|
|                       |   |
| <p><b>Step 11</b></p> | <p>You will get a pop-up telling you the project needs to be saved before re-running the <b>Criteria Review Tool</b>. Click <b>Save</b>.</p>  <p>Once all the failures have been resolved and you click <b>Save</b>, a pop-up appears stating that <b>all features pass criteria review</b>.</p>  <p>Click <b>OK</b>.</p> |

### 8.7.2 Reviewing Change Polygons

You will be required to run this QC Tool if you make any legal boundary updates. The tool checks for commonly made digitizing errors.


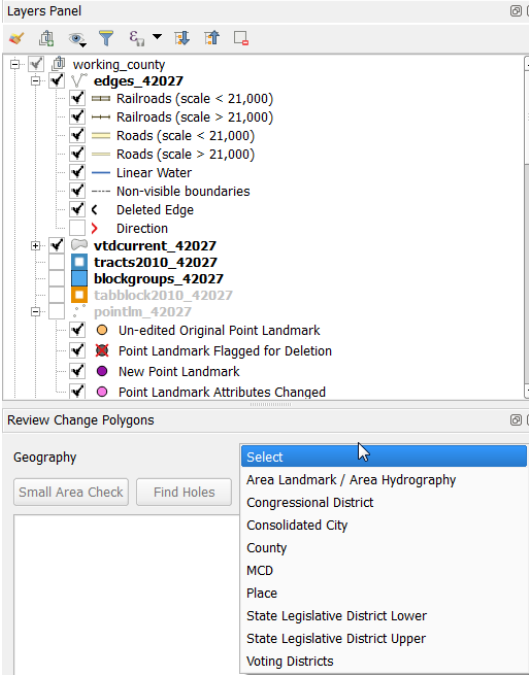

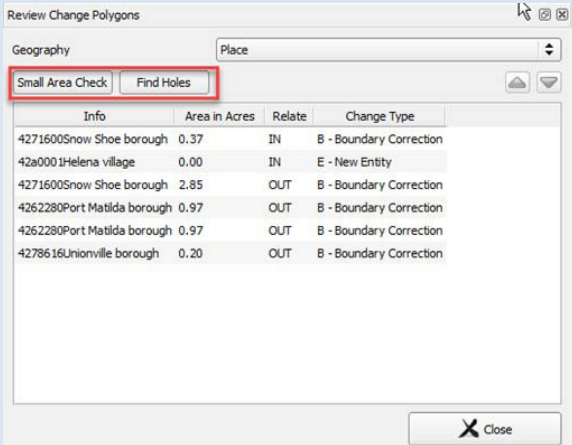
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**Note:** VTD edits can be viewed in this tool but the tool is not required for VTD QC.

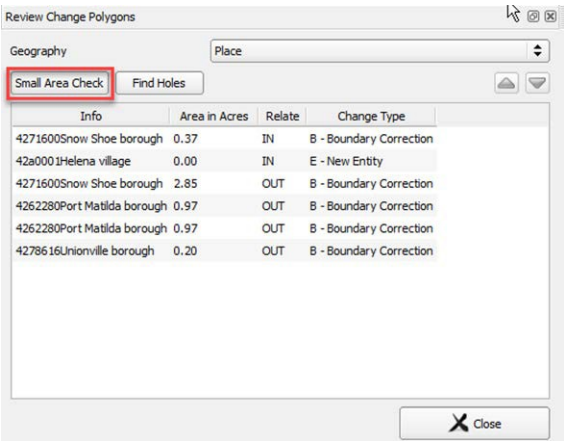

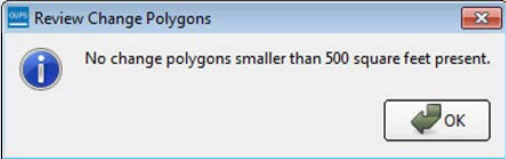
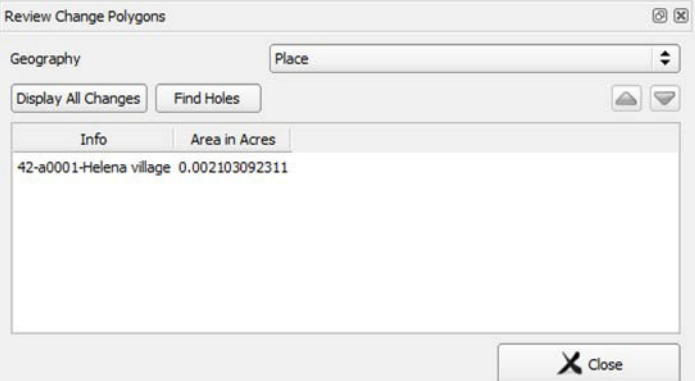
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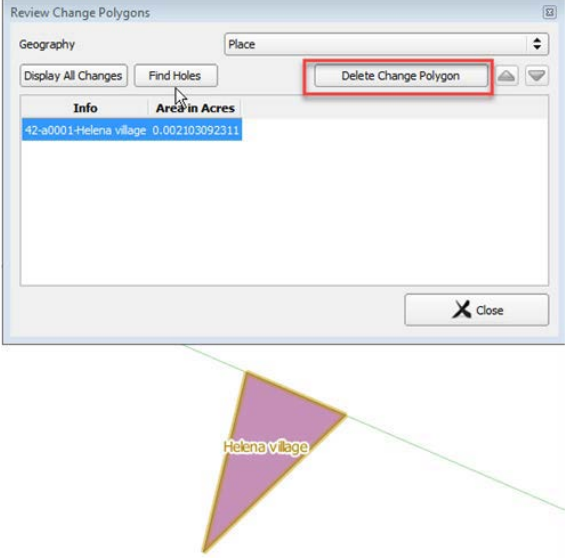
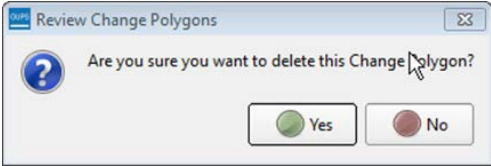

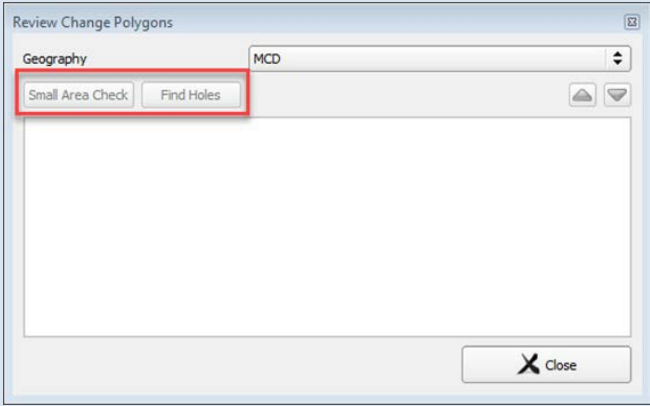


**Table 49: Review Change Polygons**

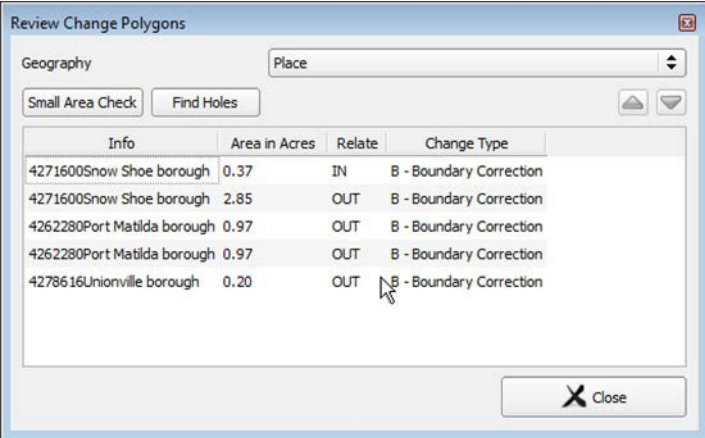
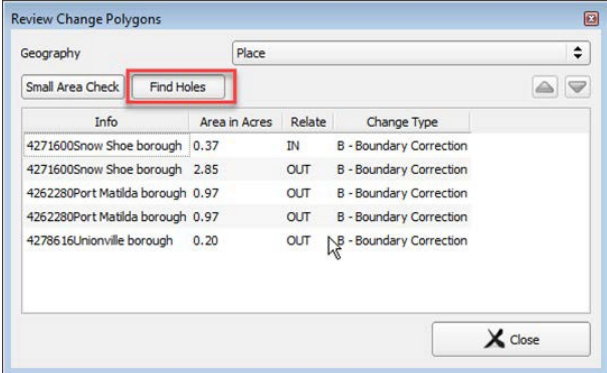

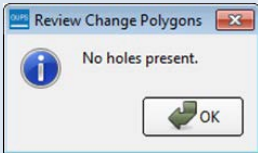
| Step  | Action and Result   |        |                         |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
|---|---|--------|-------------------------|--------|-------------|--------------------------|------|----|-------------------------|------------------------|------|----|----------------|--------------------------|------|-----|-------------------------|-----------------------------|------|-----|-------------------------|-----------------------------|------|-----|-------------------------|---------------------------|------|-----|-------------------------|
| <p><b>Step 1</b></p>  | <p>Click on the <b>Review Change Polygons</b> button on the VTD Toolbar.</p>    |        |                         |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| <p><b>Step 2</b></p>  | <p><i>The <b>Review Change Polygons</b> box opens directly below the <b>Table of Contents</b> window.</i> The dialog box can be undocked and moved anywhere on the page. Choose the geography you want to review from the <b>Geography</b> drop-down menu.</p>   |        |                         |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
|  | <p>The <b>Small Area Check</b> and <b>Find Holes</b> buttons become activated. All change polygons for the geography type you selected appear in the Info list window. See <b>Table 50</b> for instructions on running the <b>Small Area Check</b>, and <b>Table 51</b> for instructions on running the <b>Find Holes</b> check.</p>  <table border="1" data-bbox="623 1514 1172 1682"> <thead> <tr> <th>Info</th> <th>Area in Acres</th> <th>Relate</th> <th>Change Type</th> </tr> </thead> <tbody> <tr> <td>4271600Snow Shoe borough</td> <td>0.37</td> <td>IN</td> <td>B - Boundary Correction</td> </tr> <tr> <td>42a000 iHelena village</td> <td>0.00</td> <td>IN</td> <td>E - New Entity</td> </tr> <tr> <td>4271600Snow Shoe borough</td> <td>2.85</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4262280Port Matilda borough</td> <td>0.97</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4262280Port Matilda borough</td> <td>0.97</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4278616Unionville borough</td> <td>0.20</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> </tbody> </table> | Info   | Area in Acres           | Relate | Change Type | 4271600Snow Shoe borough | 0.37 | IN | B - Boundary Correction | 42a000 iHelena village | 0.00 | IN | E - New Entity | 4271600Snow Shoe borough | 2.85 | OUT | B - Boundary Correction | 4262280Port Matilda borough | 0.97 | OUT | B - Boundary Correction | 4262280Port Matilda borough | 0.97 | OUT | B - Boundary Correction | 4278616Unionville borough | 0.20 | OUT | B - Boundary Correction |
| Info  | Area in Acres   | Relate | Change Type             |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4271600Snow Shoe borough  | 0.37  | IN     | B - Boundary Correction |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 42a000 iHelena village  | 0.00  | IN     | E - New Entity          |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4271600Snow Shoe borough  | 2.85  | OUT    | B - Boundary Correction |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4262280Port Matilda borough   | 0.97  | OUT    | B - Boundary Correction |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4262280Port Matilda borough   | 0.97  | OUT    | B - Boundary Correction |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4278616Unionville borough   | 0.20  | OUT    | B - Boundary Correction |        |             |                          |      |    |                         |                        |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |

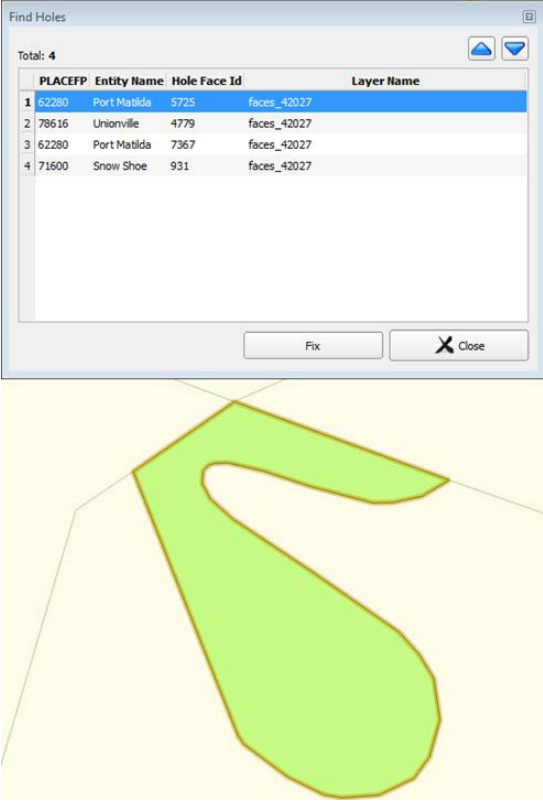
**Table 50: Conducting the Small Area Check**

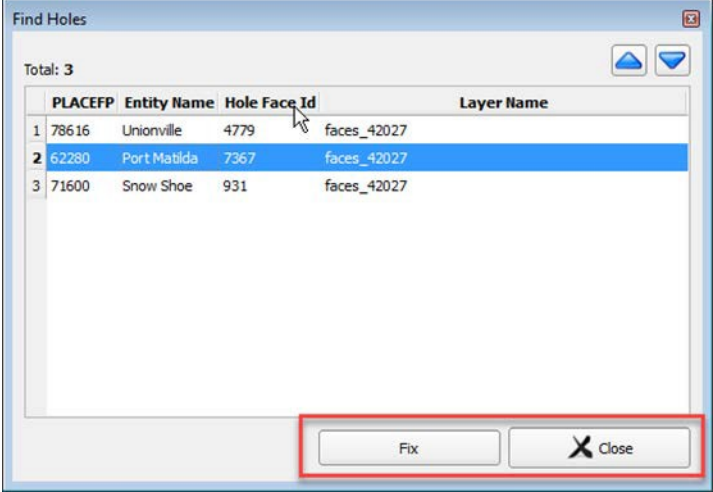
| Step  | Action and Result   |        |                         |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
|---|---|--------|-------------------------|-------------------------|----------------|--------------------------|------|----|-------------------------|-----------------------|------|----|----------------|--------------------------|------|-----|-------------------------|-----------------------------|------|-----|-------------------------|-----------------------------|------|-----|-------------------------|---------------------------|------|-----|-------------------------|
| <p><b>Step 1</b></p>  | <p>Click the “<b>Small Area Check</b>” button. This check identifies any change polygon less than 500 square feet, which are too small to be reported and may indicate a delineation error.</p>  <table border="1" data-bbox="618 562 1052 716"> <thead> <tr> <th>Info</th> <th>Area in Acres</th> <th>Relate</th> <th>Change Type</th> </tr> </thead> <tbody> <tr> <td>4271600Snow Shoe borough</td> <td>0.37</td> <td>IN</td> <td>B - Boundary Correction</td> </tr> <tr> <td>42a0001Helena village</td> <td>0.00</td> <td>IN</td> <td>E - New Entity</td> </tr> <tr> <td>4271600Snow Shoe borough</td> <td>2.85</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4262280Port Matilda borough</td> <td>0.97</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4262280Port Matilda borough</td> <td>0.97</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4278616Unionville borough</td> <td>0.20</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> </tbody> </table> | Info   | Area in Acres           | Relate                  | Change Type    | 4271600Snow Shoe borough | 0.37 | IN | B - Boundary Correction | 42a0001Helena village | 0.00 | IN | E - New Entity | 4271600Snow Shoe borough | 2.85 | OUT | B - Boundary Correction | 4262280Port Matilda borough | 0.97 | OUT | B - Boundary Correction | 4262280Port Matilda borough | 0.97 | OUT | B - Boundary Correction | 4278616Unionville borough | 0.20 | OUT | B - Boundary Correction |
| Info  | Area in Acres   | Relate | Change Type             |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4271600Snow Shoe borough  | 0.37  | IN     | B - Boundary Correction |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 42a0001Helena village   | 0.00  | IN     | E - New Entity          |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4271600Snow Shoe borough  | 2.85  | OUT    | B - Boundary Correction |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4262280Port Matilda borough   | 0.97  | OUT    | B - Boundary Correction |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4262280Port Matilda borough   | 0.97  | OUT    | B - Boundary Correction |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4278616Unionville borough   | 0.20  | OUT    | B - Boundary Correction |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
|  | <p><i>If there are no change polygons smaller than 500 square feet, the message below pops up. Click the <b>OK</b> button and repeat the <b>Small Area Check</b> for each of the other types of geography on the drop-down menu for which you created change polygons.</i></p>    |        |                         |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| <p><b>Step 2</b></p>  | <p><i>If there are change polygons smaller than 500 square feet, they appear in the <b>Info</b> window along with their <b>Area in Acres</b>. Note that the <b>Small Area Check</b> button is replaced with the <b>Display All Changes</b> button, which allows you to toggle back to see all change polygons in the list.</i></p>  <table border="1" data-bbox="565 1493 906 1696"> <thead> <tr> <th>Info</th> <th>Area in Acres</th> </tr> </thead> <tbody> <tr> <td>42-a0001-Helena village</td> <td>0.002103092311</td> </tr> </tbody> </table>   | Info   | Area in Acres           | 42-a0001-Helena village | 0.002103092311 |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| Info  | Area in Acres   |        |                         |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 42-a0001-Helena village   | 0.002103092311  |        |                         |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| <p><b>Step 3</b></p>  | <p>Click on a row in the list. <i>The map view zooms you to the change polygon and the <b>Delete Change Polygon</b> button is activated. Click the <b>Delete Change Polygon</b> button</i></p>  |        |                         |                         |                |                          |      |    |                         |                       |      |    |                |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |

| Step  | Action and Result  |
|---|--|
|   |    |
| <p><b>Step 4</b></p>  | <p>The <b>Review Change Polygons dialog box</b> opens for deletion confirmation. Click the <b>Yes</b> button. The polygon is removed from the list, the map, and the attribute table.</p>   |
| <p><b>Step 5</b></p>  | <p>Repeat the steps above for each geography type for which you created change polygons. Click on the drop-down menu to choose another geography type.</p>   |
|  | <p>GUPS lets you know whether you have created change polygons for a geography type. The <b>Small Area Check</b> and <b>Find Holes</b> buttons are grayed out and unavailable for selection if no change polygons were created for a particular geography type. In this example, MCD was selected and both buttons are grayed out, so we know there were no change polygons created for MCDs.</p>  |

**Table 51: Conducting the Find Holes Check**

| Step  | Action and Result   |        |                         |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
|---|---|--------|-------------------------|--------|-------------|--------------------------|------|----|-------------------------|--------------------------|------|-----|-------------------------|-----------------------------|------|-----|-------------------------|-----------------------------|------|-----|-------------------------|---------------------------|------|-----|-------------------------|
| <p><b>Step 1</b></p>  | <p>While still in the <b>Review Change Polygons</b> dialog box (or you can click on the <b>Review Change Polygons</b> button on the VTD toolbar again), choose the Geography type for the review from the drop-down menu.</p> <p><i>The info window again populates with all the change polygons.</i></p>  <table border="1" data-bbox="570 590 1227 831"> <thead> <tr> <th>Info</th> <th>Area in Acres</th> <th>Relate</th> <th>Change Type</th> </tr> </thead> <tbody> <tr> <td>4271600Snow Shoe borough</td> <td>0.37</td> <td>IN</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4271600Snow Shoe borough</td> <td>2.85</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4262280Port Matilda borough</td> <td>0.97</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4262280Port Matilda borough</td> <td>0.97</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> <tr> <td>4278616Unionville borough</td> <td>0.20</td> <td>OUT</td> <td>B - Boundary Correction</td> </tr> </tbody> </table> | Info   | Area in Acres           | Relate | Change Type | 4271600Snow Shoe borough | 0.37 | IN | B - Boundary Correction | 4271600Snow Shoe borough | 2.85 | OUT | B - Boundary Correction | 4262280Port Matilda borough | 0.97 | OUT | B - Boundary Correction | 4262280Port Matilda borough | 0.97 | OUT | B - Boundary Correction | 4278616Unionville borough | 0.20 | OUT | B - Boundary Correction |
| Info  | Area in Acres   | Relate | Change Type             |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4271600Snow Shoe borough  | 0.37  | IN     | B - Boundary Correction |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4271600Snow Shoe borough  | 2.85  | OUT    | B - Boundary Correction |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4262280Port Matilda borough   | 0.97  | OUT    | B - Boundary Correction |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4262280Port Matilda borough   | 0.97  | OUT    | B - Boundary Correction |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| 4278616Unionville borough   | 0.20  | OUT    | B - Boundary Correction |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| <p><b>Step 2</b></p>  | <p>Click the <b>Find Holes</b> button.</p>   |        |                         |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
|  | <p>If there are no holes, you receive the message below in the Review Change Polygon dialog box. Click the <b>OK</b> button.</p>    |        |                         |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |
| <p><b>Step 3</b></p>  | <p>If there are holes, the <b>Find Holes dialog box</b> opens directly under the <b>Table of Contents</b>. The number of holes is listed in the dialog box. The change polygons representing the holes populates in the window. Click on a change polygon in the list to zoom to it on the map.</p>   |        |                         |        |             |                          |      |    |                         |                          |      |     |                         |                             |      |     |                         |                             |      |     |                         |                           |      |     |                         |

| Step      | Action and Result  |              |             |              |            |   |       |              |      |             |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |
|-----------|--|--------------|-------------|--------------|------------|---|-------|--------------|------|-------------|---|-------|------------|------|-------------|---|-------|--------------|------|-------------|---|-------|-----------|-----|-------------|
|           |  <p>The screenshot shows the 'Find Holes' dialog box with a table containing 4 rows of data. Below the table is a map showing a green polygon with a hole in the center.</p> <table border="1"> <thead> <tr> <th>PLACEMENT</th> <th>Entity Name</th> <th>Hole Face Id</th> <th>Layer Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>62280</td> <td>Port Matilda</td> <td>5725</td> <td>faces_42027</td> </tr> <tr> <td>2</td> <td>78616</td> <td>Unionville</td> <td>4779</td> <td>faces_42027</td> </tr> <tr> <td>3</td> <td>62280</td> <td>Port Matilda</td> <td>7367</td> <td>faces_42027</td> </tr> <tr> <td>4</td> <td>71600</td> <td>Snow Shoe</td> <td>931</td> <td>faces_42027</td> </tr> </tbody> </table> | PLACEMENT    | Entity Name | Hole Face Id | Layer Name | 1 | 62280 | Port Matilda | 5725 | faces_42027 | 2 | 78616 | Unionville | 4779 | faces_42027 | 3 | 62280 | Port Matilda | 7367 | faces_42027 | 4 | 71600 | Snow Shoe | 931 | faces_42027 |
| PLACEMENT | Entity Name  | Hole Face Id | Layer Name  |              |            |   |       |              |      |             |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |
| 1         | 62280  | Port Matilda | 5725        | faces_42027  |            |   |       |              |      |             |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |
| 2         | 78616  | Unionville   | 4779        | faces_42027  |            |   |       |              |      |             |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |
| 3         | 62280  | Port Matilda | 7367        | faces_42027  |            |   |       |              |      |             |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |
| 4         | 71600  | Snow Shoe    | 931         | faces_42027  |            |   |       |              |      |             |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |

| <p><b>Step 4</b></p> | <p>Click on the <b>Fix</b> button to delete the change polygon if the hole in the geography should not exist. The face will be assigned to the place surrounding it. If it is a legitimate change (an enclave, for example) and not due to a digitizing error, move to the next item in the list for review, or if you are done reviewing the holes, click the <b>Close</b> button</p>  <p>The screenshot shows the 'Find Holes' dialog box with a table containing 3 rows of data. The 'Fix' button is highlighted with a red box.</p> <table border="1"> <thead> <tr> <th>PLACEMENT</th> <th>Entity Name</th> <th>Hole Face Id</th> <th>Layer Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>78616</td> <td>Unionville</td> <td>4779</td> <td>faces_42027</td> </tr> <tr> <td>2</td> <td>62280</td> <td>Port Matilda</td> <td>7367</td> <td>faces_42027</td> </tr> <tr> <td>3</td> <td>71600</td> <td>Snow Shoe</td> <td>931</td> <td>faces_42027</td> </tr> </tbody> </table> | PLACEMENT    | Entity Name | Hole Face Id | Layer Name | 1 | 78616 | Unionville | 4779 | faces_42027 | 2 | 62280 | Port Matilda | 7367 | faces_42027 | 3 | 71600 | Snow Shoe | 931 | faces_42027 |
|----------------------|--|--------------|-------------|--------------|------------|---|-------|------------|------|-------------|---|-------|--------------|------|-------------|---|-------|-----------|-----|-------------|
| PLACEMENT            | Entity Name  | Hole Face Id | Layer Name  |              |            |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |
| 1                    | 78616  | Unionville   | 4779        | faces_42027  |            |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |
| 2                    | 62280  | Port Matilda | 7367        | faces_42027  |            |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |
| 3                    | 71600  | Snow Shoe    | 931         | faces_42027  |            |   |       |            |      |             |   |       |              |      |             |   |       |           |     |             |

## 8.8 Managing Data Files and Sharing Projects and Work

GUPS includes a number of tools to assist users in managing their files and sharing projects with liaisons, designees, other colleagues, and the Census Bureau.

### 8.8.1 GUPS Data Settings Tool

The **GUPS Data Settings Tool (Figure 19)** is found on the Standard Toolbar. In earlier versions of GUPS, this tool was known as the GUPS Clean Up Tool, and allowed you to delete all the files associated with a GUPS project if you need to start your project over. The Tool has been expanded to a) allow you to change the working directory where you store your GUPS folder, and b) display the location of your files, which is helpful if you need to send the Census Bureau any log files or other files needed to troubleshoot any issues. **Section 8.7.1.1** describes how to change your working directory using the tool. **Section 8.7.1.2** describes the GUPS Clean Up. The tool also includes an “Explore” button, explained in **Section 8.7.1.2.4**, which will automatically open up file explorer to your GUPS folder locations.



Figure 19. GUPS Data Settings Tool

#### 8.8.1.1 Changing the Working Directory


When you first open GUPS after installing the software, GUPS creates a GUPSGIS folder where your GUPS files are saved. Changing the **Working Directory** allows you to change the location of this folder. This can be helpful if you have space restrictions or personal preferences for where you store your files.

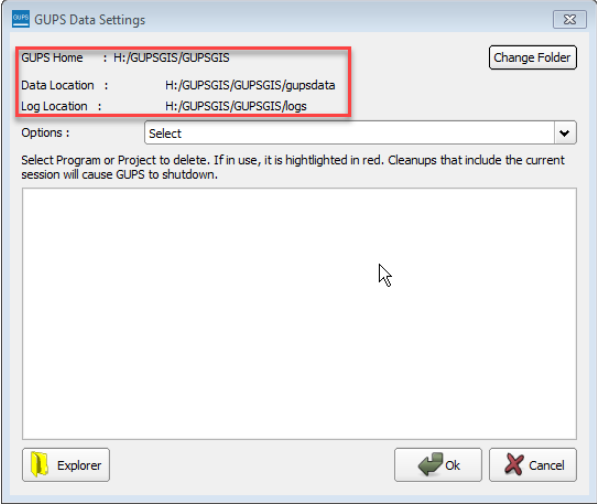
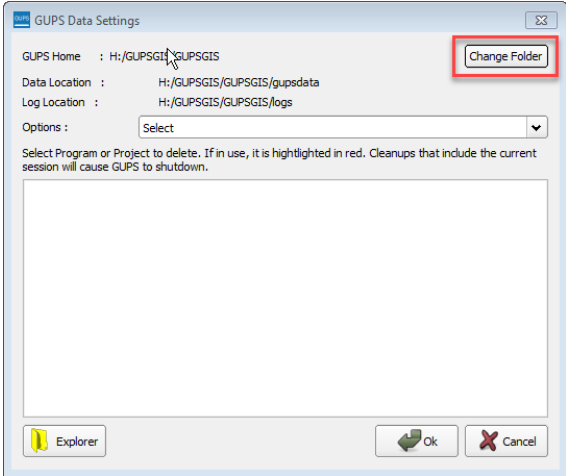
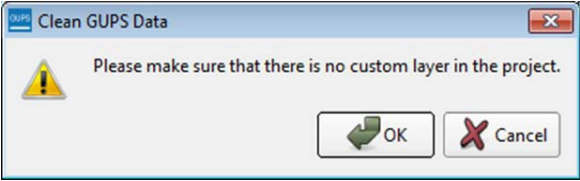
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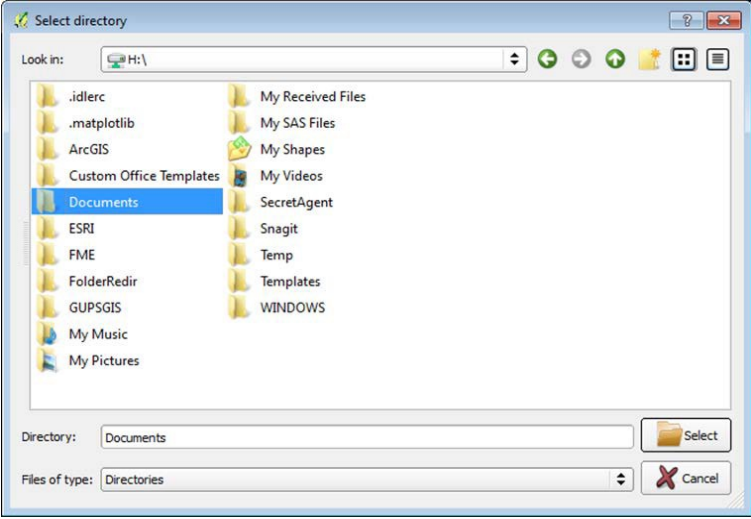
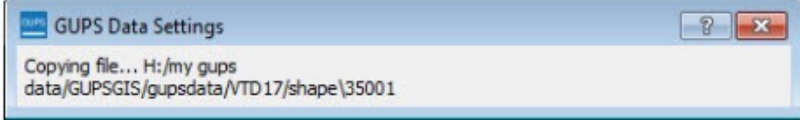
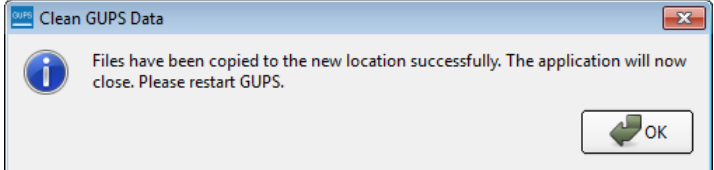
**Note:** To change the location of your GUPS folder, you cannot have an existing project open. You must close all projects first in order to change the working directory.

---

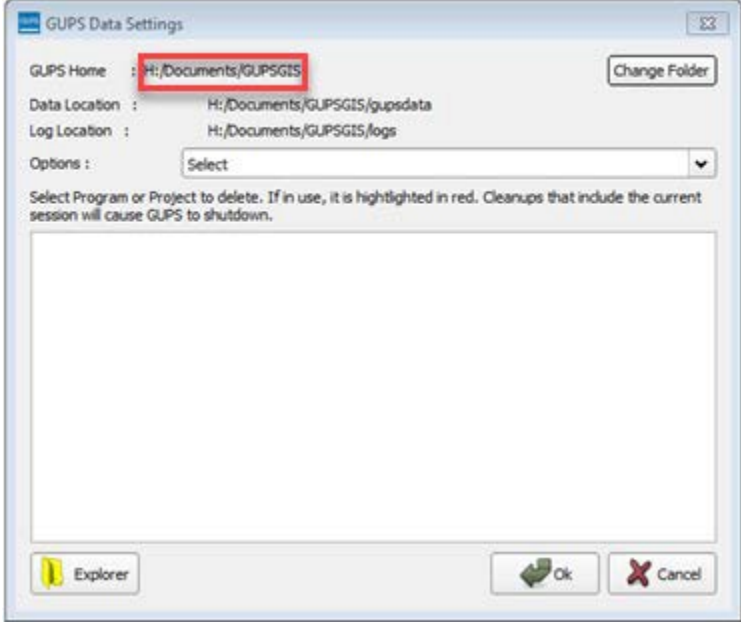

Table 52: Changing your GUPS Working Directory

| Step   | Action and Result  |
|--------|--|
| Step 1 | Making sure you do not have a project currently open, click on the <b>GUPS Data Setting</b> button in the Main Tool Bar.<br> |

| Step                 | Action and Result  |
|----------------------|--|
|                      | <p>The <b>GUPS Data Setting</b> dialog box opens. You can see at the top of the dialog box, your current Home Directory where your GUPSGIS folder is currently located.</p>    |
| <p><b>Step 2</b></p> | <p>Click the <b>Change Folder</b> button in the <b>GUPS Data Settings</b> tool.</p>  <p>A notification dialog box will pop-up to remind you of any custom layers that you may have in your project. Custom layers are any data that are stored in a folder that is not the GUPSGIS data folder. If you have, for example, any non-Census shapefile layers stored in another folder location, those files will not be copied through this action.</p>  |
| <p><b>Step 3</b></p> | <p>Click <b>OK</b>. The <b>Select Directory</b> dialog box appears.</p>  |

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 4</b></p> | <p>In the Select Directory dialog box, choose the location for your new working directory. In this example, the <b>Documents</b> folder has been chosen as the new location for the GUPSGIS data folder. Click the <b>Select</b> button.</p>  |
| <p><b>Step 5</b></p> | <p><i>GUPS will display a status message to indicate that it is moving the folders and contents of those folders to the new directory.</i></p>   |
| <p><b>Step 6</b></p> | <p><i>Once all files have been copied, GUPS will then display a final notification informing you that the move was successful and that you will need to restart GUPS.</i></p>   |
| <p><b>Step 7</b></p> | <p>To confirm that the working directory has been changed, open the <b>GUPS Data Settings</b> tool and check to make sure the correct location is showing in the <b>GUPS Home</b> line at the top of the dialog box.</p>  |



| Step  | Action and Result  |
|---|--|
|   |    |
|  | <p>If GUPS displays error messages when you are attempting to move your files, please check to make sure you have permissions to move files to that directory and that there is sufficient space to store the files.</p> |

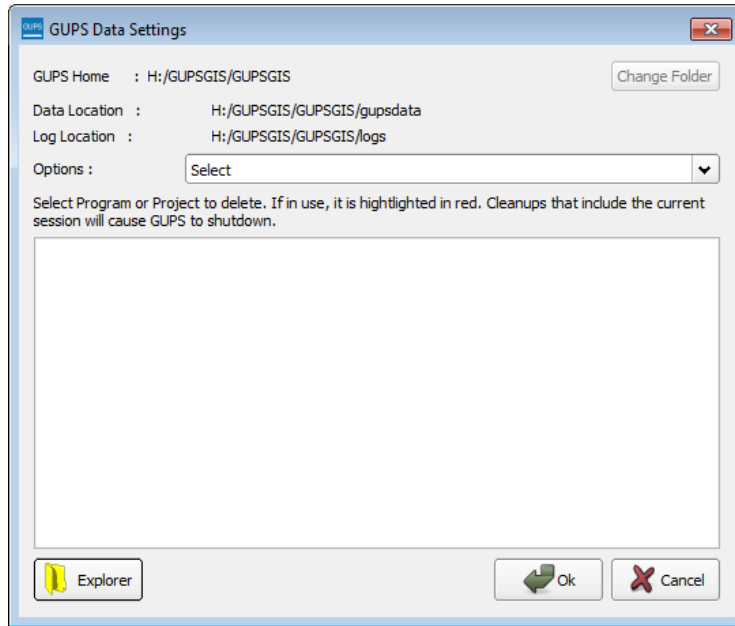
### 8.8.1.2 Cleaning GUPS Data

The **GUPS Data Setting** Tool also allows you to delete all the files associated with a GUPS project(s) if you want to start over. You can access the **GUPS Data Setting** Tool on the **Standard Tool Bar** before or after you open a project. (Note that the tool bars might look slightly different depending on whether you have a project open or not.)



Figure 20. GUPS Data Setting Tool Located on the Standard Tool Bar

The **GUPS Data Settings** tool (Figure 21) offers you three clean data options: **Clean by Project**, **Clean by Program**, and **Clean All GUPS Data**.




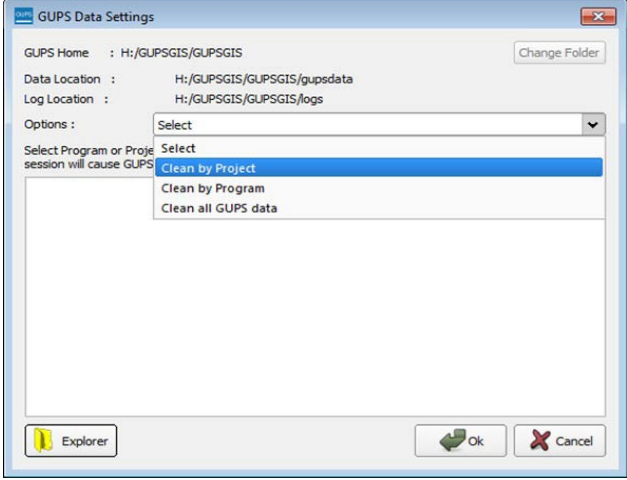
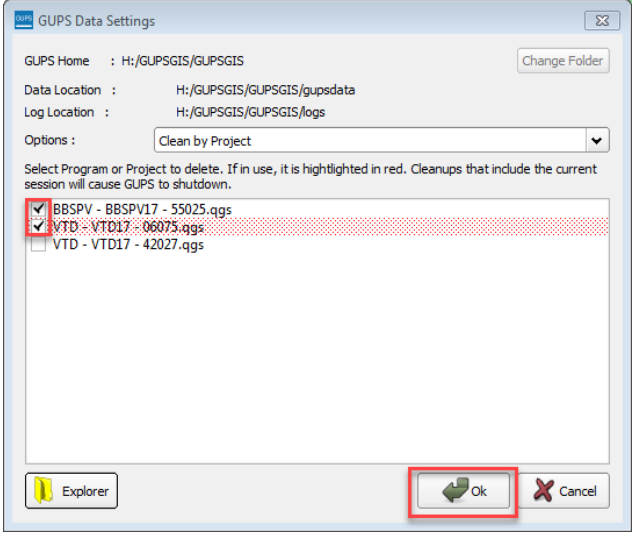
**Figure 21. GUPS Data Settings Window**

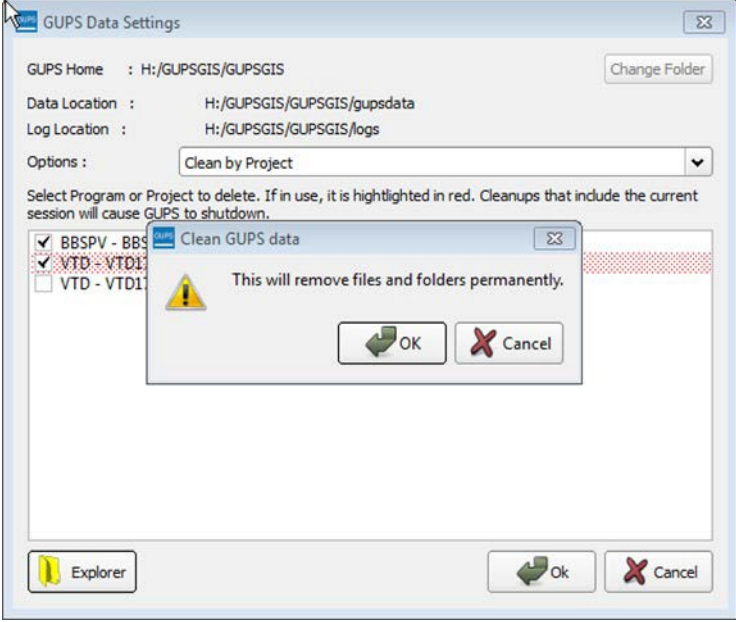
### 8.8.1.2.1 Cleaning by Project

If you have created multiple projects, **Clean by Project** 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 you want to download the original Census Bureau data without any of the edits that you might have made for that project.

**Table 53: Cleaning GUPS Data by Project  
(Deleting All GUPS Data Associated with a Project)**

| Step          | Action and Result  |
|---------------|--|
| <b>Step 1</b> | <p>Click on the <b>GUPS Data Settings</b> Tool.</p>  <p><i>The <b>GUPS Data Settings</b> dialog box opens.</i></p> |
| <b>Step 2</b> | <p>From the <b>Options</b> drop-down menu, select <b>Clean by Project</b>. Click <b>OK</b>.</p>  |


| Step                 | Action and Result  |
|----------------------|--|
|                      |  <p>A list of all of your GUPS projects will appear. The red dotted highlight indicates a project that is currently open in GUPS.</p>  |
| <p><b>Step 3</b></p> | <p>Select the checkbox next to the project(s) you want to delete and select <b>OK</b>.</p>  <p>A warning message will appear reminding you that all files and folders associated with the project(s) will be permanently deleted.</p> |

| Step | Action and Result   |
|------|---|
|      |  <p>Click <b>OK</b>.</p> <p>If you deleted a project that was open, GUPS will automatically shut down and all files and data associated with that project will be deleted. If you delete a project that is not open, the dialog and warning box will disappear. <b>We recommended that you restart GUPS by closing the program and reopening it, to ensure that all data and files associated with the project are deleted.</b></p> |

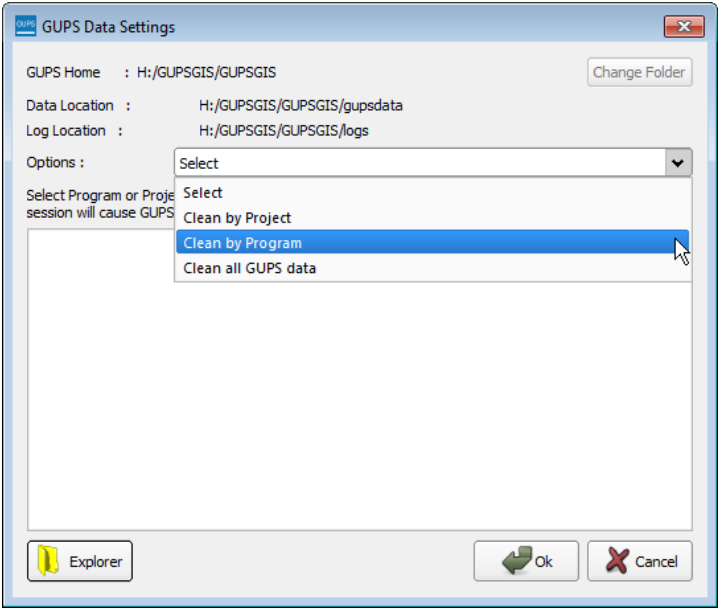
### 8.8.1.2.2 Clean by Program

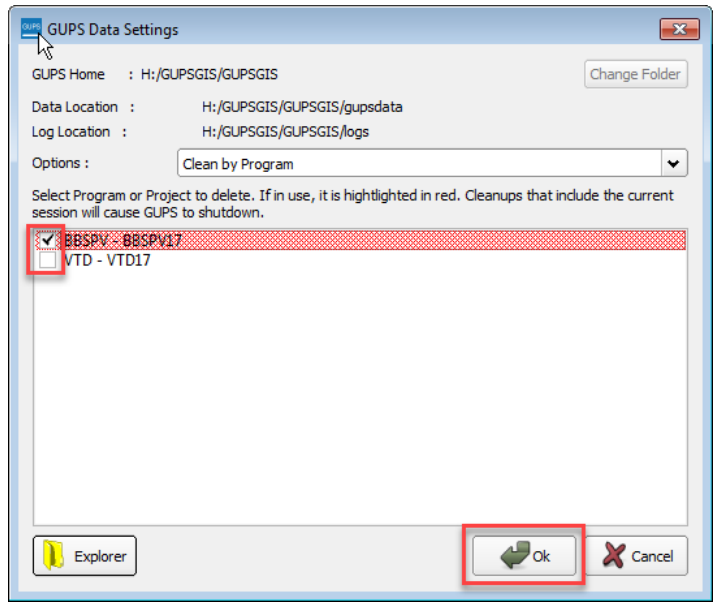
If you would rather delete all projects associated with a certain program, you can opt to choose to **Clean by Program**. This will delete all projects associated with a single program. You might find this useful if you had worked on other Census Bureau programs that used GUPS, such as the BBSP for example, and want to delete old projects associated with that program.

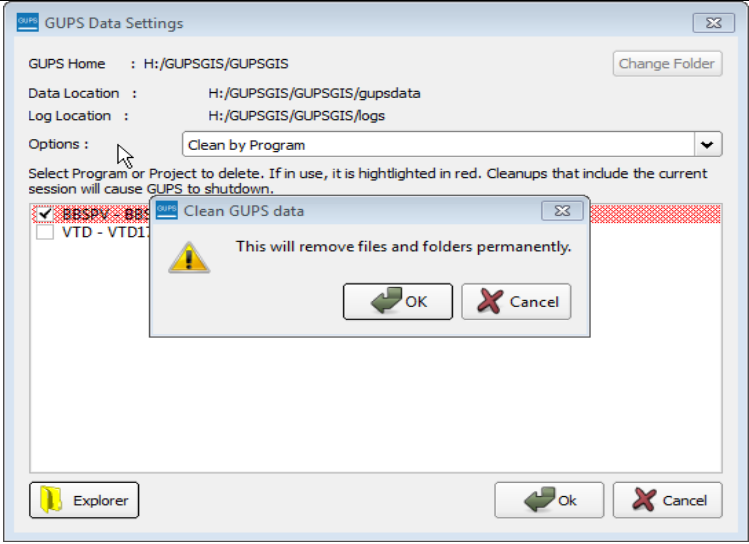
**Table 54: Cleaning GUPS Data by Program**

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 1</b></p> | <p>Click on the <b>GUPS Data Settings</b> Tool.</p>  <p>The <b>GUPS Data Settings</b> dialog box opens.</p> |

| Step | Action and Result |
|------|-------------------|
|------|-------------------|

|               |   |
|---------------|---|
| <b>Step 2</b> | <p>From the <b>Options</b> drop-down menu, select <b>Clean by Program</b>. Click <b>OK</b>.</p>  <p><i>A list of all of Programs you have projects associated with appears. The red dotted highlight indicates a program that has a project currently open.</i></p> |
|---------------|---|


|               |   |
|---------------|---|
| <b>Step 3</b> | <p>Select the checkbox next to the program(s) whose projects you want to delete and then select <b>OK</b>.</p>  <p><i>A warning message will appear reminding you that all files and folders associated with the project(s) for this program will be permanently deleted.</i></p> |
|---------------|---|

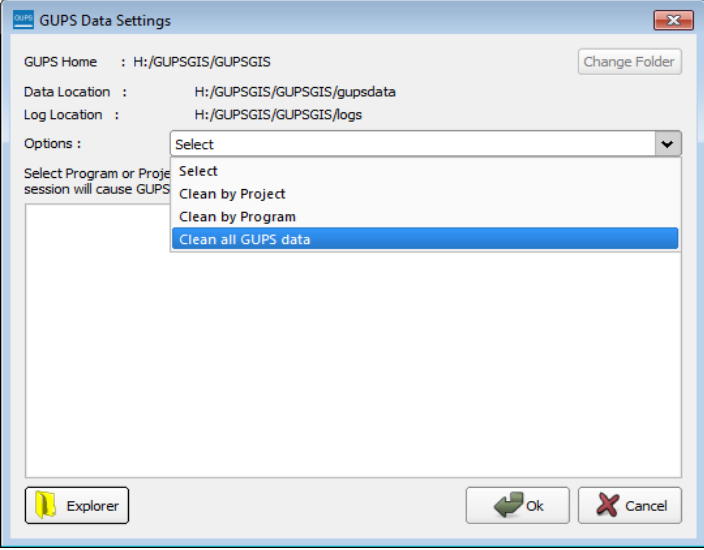
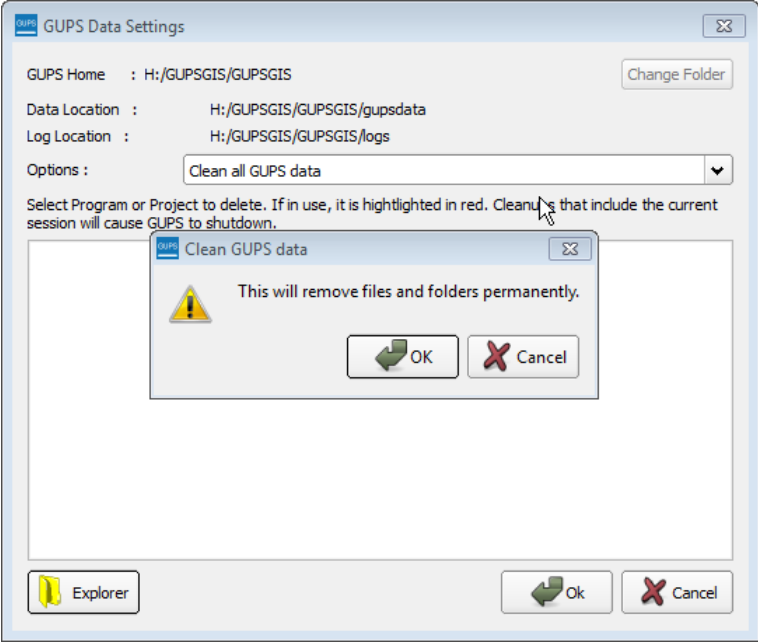
| Step | Action and Result   |
|------|---|
|      |  <p>Click <b>OK</b>.</p> <p>If you deleted by program, and a project for that program was open, GUPS will automatically shut down and all files and data associated with projects for that program will be deleted. If you delete by program and do not have a project for that program open, the dialog and warning box will disappear. <b>We recommended that you restart GUPS by closing the program and reopening it, to ensure that all data and files associated with the projects are deleted.</b></p> |

### 8.8.1.2.3 Cleaning All GUPS Data

You may wish to delete all GUPS data and folders associated with all of your programs and projects. The **Clean All GUPS Data** will delete all GUPS data that is located in the GUPGIS data folder in your home directory. This will permanently delete all files and folders, so once the tool has run, files and folders cannot be recovered.

**Table 55: Cleaning All GUPS Data**


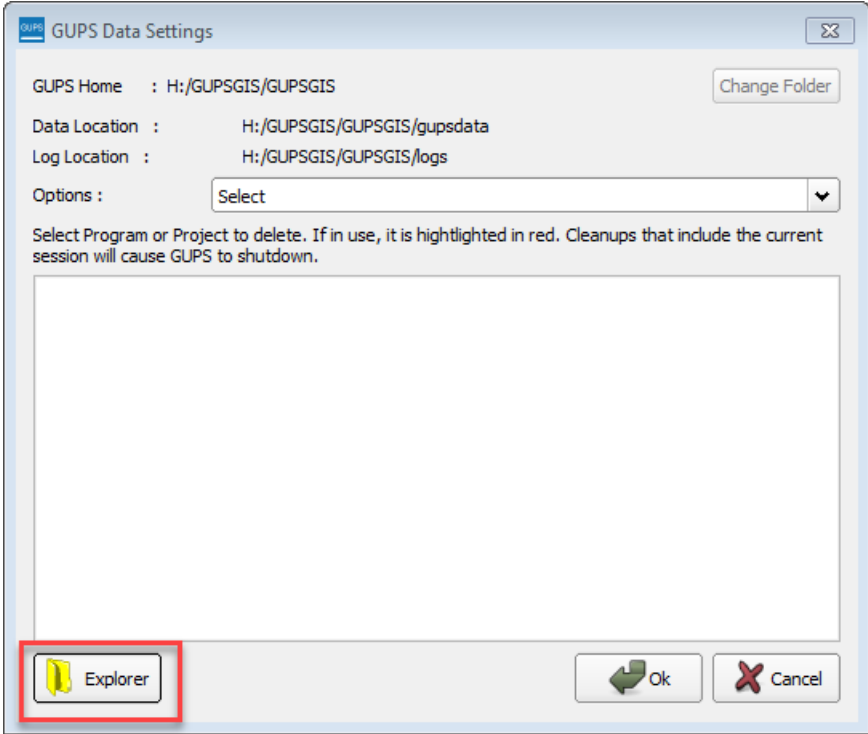
| Step                 | Action and Result  |
|----------------------|--|
| <p><b>Step 1</b></p> | <p>Click on the <b>GUPS Data Setting Tool</b>.</p>  <p>The <b>GUPS Data Settings</b> dialog box opens.</p> |
| <p><b>Step 2</b></p> | <p>From the <b>Options</b> drop-down menu, select <b>Clean all GUPS Data</b>.</p>  |

| Step          | Action and Result   |
|---------------|---|
|               |  <p>Click <b>OK</b>.</p> <p>A warning message will appear reminding you that all files and folders associated with the project(s) for this program will be permanently deleted.</p>  |
| <b>Step 3</b> | Click <b>OK</b> . GUPS will shut down and all files and data associated with all of your GUPS projects will be deleted.   |

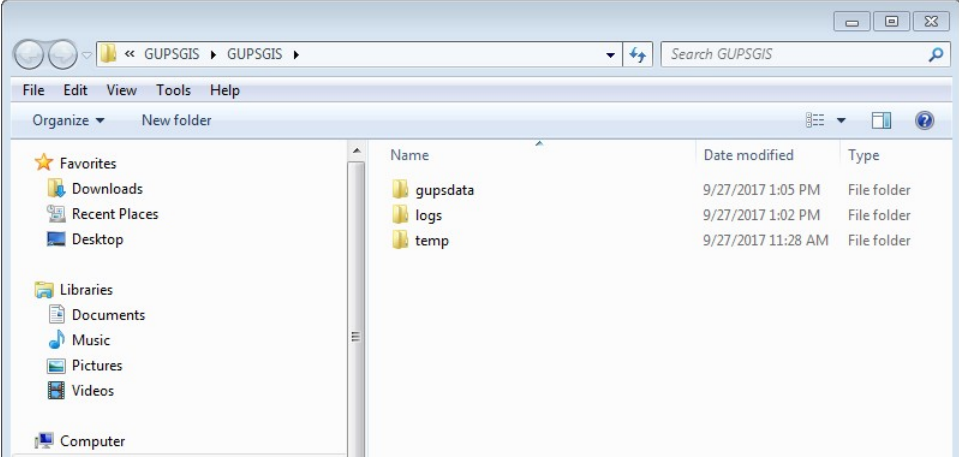
### 8.8.1.2.4 Opening Your GUPS Folder with the Explorer Button

The **GUPS Data Settings** tool also includes an **Explorer** button, which will open file explorer on your computer to the location of your GUPS files.

**Table 56: Opening GUPS with the Explorer Button**

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 1</b></p> | <p>Click on the <b>GUPS Data Setting Tool</b>.</p>  <p>The <b>GUPS Data Settings</b> dialog box opens.</p>  |
| <p><b>Step 2</b></p> | <p>In the bottom left hand corner, click on the <b>Explorer</b> button.</p>  <p><i>File Explorer will open the folder where your GUPSGIS data folders are located.</i></p> |



| Step | Action and Result  |
|------|--|
|      |  |

### 8.8.2 Exporting a VTD Tabular Equivalency File

This export option, described in **Table 58** allows you to export the current VTD layer you are working on as a tabular (2010 Census Block) equivalency file. This gives you the opportunity to share the file with others in a format other than as a shapefile.

When you export your layer as a tabular equivalency file, GUPS creates three comma delimited TEF versions: Simple, GEOID, and Extended GEOID. The headers (fields) for each of these TEF versions and an example format are shown in **Table 57** below.


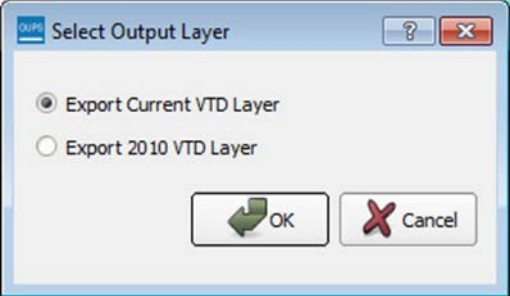
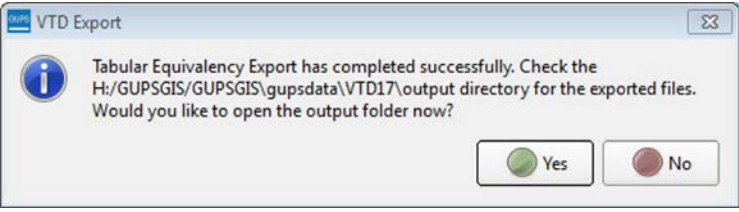
- Simple TEFs have the state codes, county codes, tract codes, block codes, voting district codes and name information separated from each other by commas.
- GEOID (Geographic Identification Code) TEFs have the state, county, tract, and block codes concatenated into one 15-digit code (the GEOID), separated by a comma from the VTD code and separated by another comma from the name information.
- Extended TEFs have the state, county, tract, block, and Voting District codes concatenated into one 21-digit code (the Extended GEOID), separated by a comma from the name information.


**Table 57: TEF Version and Example Formats**

| Tabular File | Headers   | Example format   |
|--------------|---|--|
| Simple TEF   | ST, COU, TRACT, BLOCK, VOTING DISTRICT, NAMELSAD      | 01, 001, 000001, 0001, 000001, Example Voting District |
| GEOID TEF    | GEOID (ST+COU+TRACT+BLOCK), Voting District, NAMELSAD | 010010000010001, 000001, Example Voting District       |
| Extended TEF | Extended GEOID (GEOID+ VTD), NAMELSAD                 | 010010000010001000001, Example Voting District         |

ST=2 digit state code, COU=3 digit county code, TRACT=6 digit tract code, BLOCK=4 digit 2010 tabulation block code, VOTING DISTRICT=6 character VTD code, NAMELSAD=the (up to) 120 character name combined with the legal/statistical area definition (LSAD).

**Table 58: Export to Tabular Equivalency File**

| Step          | Action and Result   |
|---------------|---|
| <b>Step 1</b> | <p>Click on the <b>Export to Tabular Equivalency File</b> button on the VTD Toolbar.</p>  <p>The <b>Select Output Layer</b> dialog box appears.</p>   |
| <b>Step 2</b> | <p>Choose whether you want to export the Current VTD Layer (will include your VTD updates) or the 2010 VTD layer provided by the Census Bureau.</p>  <p>A dialog box will appear stating that your export completed successfully and where it was saved.</p>  |

| Step  | Action and Result  |
|---|--|
| <b>Step 3</b>   | If you want to open the folder where the TEF was saved, click Yes. Click No to close the dialog box and continue working on our project. |
|  | <b>Note:</b> To open the TEF in GUPS, see <b>Section 7.2</b> .   |

### 8.8.3 Exporting Project as a ZIP File to Share with Another Participant


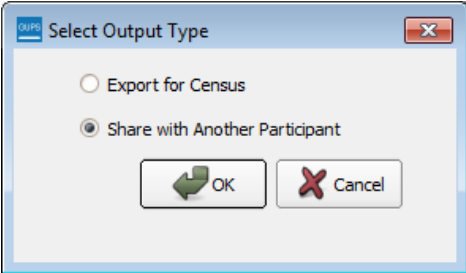
Export file to share with another participant is useful if you complete your VTD updates and want to send the results to a co-worker or the RDP Liaison for review before sending to the Census Bureau. Export to Share with Another Participant does not require all errors to be resolved and will export all the files for the entire project, including all of the reference files and the files with changes, into a zip file.

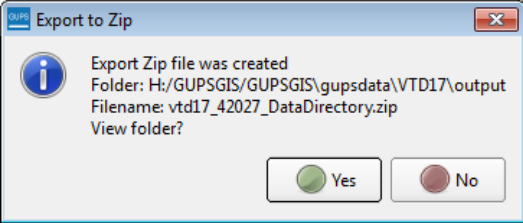

---

**Note:** See **Section 6.1 Table 8** for instructions on importing a Share with Participant zip file into GUPS for further review.

---

**Table 59: Exporting a Zip File to Share with another Participant**



| Step          | Action and Result  |
|---------------|--|
| <b>Step 1</b> | Click the <b>Export to Zip</b> button on the VTD Toolbar.<br>  |
| <b>Step 2</b> | <i>The <b>Select Output Type</b> dialog box opens.</i><br><br>Click the <b>Share with Another Participant</b> radio button and then the <b>OK</b> button.<br><b>Note:</b> It may take several minutes for the GUPS to create the zip file. |
| <b>Step 3</b> | The Zip File Output dialog box opens. Your file directory in the message will look similar to this.  |

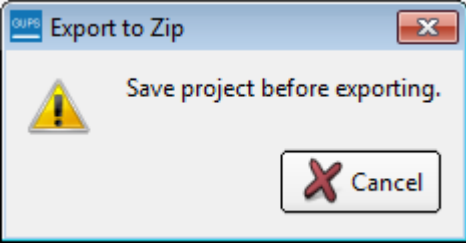
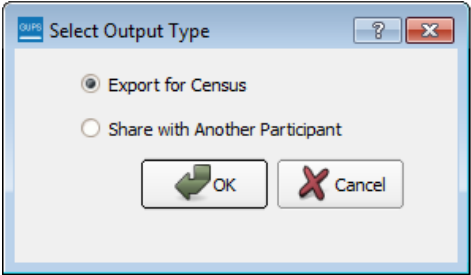
| Step  | Action and Result   |
|---|---|
|   | <p><b>Note:</b> Files created using the <b>Export to Census</b> radio button will have the naming convention <b>vtd&lt;yy&gt;_&lt;ssccc&gt;_DataDirectory.zip</b>, where <b>yy</b> indicates the year and <b>ssccc</b> is the state and county code.</p> <div data-bbox="639 352 1159 573" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;">  </div> <p>Click the <b>Yes</b> button to view the directory folder or the <b>No</b> button if you do not want to view the directory.</p> |
| <b>Step 4</b>   | <p>If you clicked the Yes button to view the folder, the Windows Explorer window with the GUPS directories is opened. All zip data output files for the VTD are stored in the directory: <b>\GUPSGIS\gupsdata\VTD&lt;yy&gt;\output\</b>. (&lt;yy&gt; in the file name will indicate the year. The home directly will differ depending on the drive where you installed the software or specified your GUPS directory.)</p>  |
|  | <p>Do not save the <b>vtd&lt;yy&gt;_&lt;ssccc&gt;_DataDirectory.zip</b> files you receive from your designees in the \shape folder in the directory <b>C:\Users\&lt;username&gt;\GUPSGIS\gupsdata\vtd\shape\</b>. You must save zip files in a different directory on your computer for GUPS to recognize and import the zip files.</p>   |

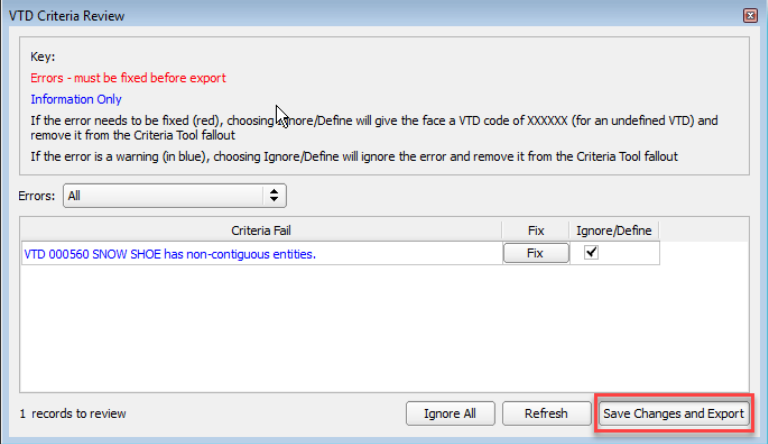
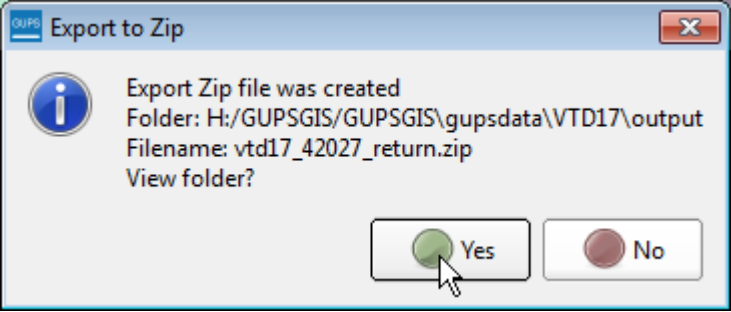
### 8.8.4 Exporting Project as Zip File to Submit to the Census Bureau

**Export Project to Submit to the Census Bureau** will package the necessary GUPS files (change files) and create a zip file that you will submit to the Census Bureau as described in **Section 9**. You are required to run the **VTD Criteria Check** and the **Review Change Polygons** tools before you can submit. **Table 60** below describes the steps for creating zip files and submitting them to the Census Bureau.

**Table 60: Creating VTD Submission for the Census Bureau**

| Step  | Action and Result   |
|---|---|
|  | <p>Make sure to save your project by clicking the <b>Save</b> button before beginning the export process.</p>   |
| <b>Step 1</b>   | <p>Click the <b>Export to Zip</b> button on the VTD Toolbar.</p> <div data-bbox="386 1654 1398 1717" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;">  </div> |
| <b>Step 2</b>   | <p>If you did not save your project before beginning the export to zip process, you receive a reminder message to save your project. Click the <b>Cancel</b> button and save your</p>   |

| Step                 | Action and Result   |
|----------------------|---|
|                      | <p>project by clicking on the <b>Save</b> button on the Standard toolbar. Click the <b>Export to Zip</b> button again.</p>    |
| <p><b>Step 3</b></p> | <p>The <b>Select Output Type</b> dialog box opens.</p>  <p>Click the <b>Export for Census</b> radio button and then the <b>OK</b> button.</p> <p><b>Note:</b> It may take several minutes for the GUPS to create the zip file</p>   |
| <p><b>Step 4</b></p> | <p>The <b>VTD Criteria Check</b> and the <b>Change Polygon Review</b> will run in the background.</p> <p>If GUPS does not find any failures, the <b>Zip File Output</b> dialog box appears (Go to Step 5).</p> <p>If GUPS finds any failures, the <b>VTD Criteria Check</b> dialog box and/or the <b>Review Change Polygons</b> dialog box will appear. Refer to <b>Section 8.6</b> for instructions on resolving these failures. You must resolve the failures before you can proceed with exporting the file to Census.</p> <p>After addressing the <b>VTD Criteria Review failures</b> during the export process, you can click on the <b>Save Changes and Export</b> button in the lower right. This will return you to the exportation process. (When just running the <b>VTD Criteria Review</b> tool outside of the Export process, the button in the <b>Criteria Review</b> dialog box says <b>Save Changes</b>.)</p> |

| Step                 | Action and Result   |
|----------------------|---|
|                      |   |
| <p><b>Step 5</b></p> | <p><i>The <b>Zip File Output</b> dialog box opens.</i> Your file directory in the message will look similar to this, with the exception of the filename.</p> <p>Files created using the <b>Export to Census</b> radio button will have the naming convention <b>vtd&lt;yy&gt;_&lt;ssccc&gt;_return.zip</b>.</p>  <p>Click the <b>Yes</b> button to view the directory folder or the <b>No</b> button if you do not want to view the directory.</p>   |
| <p><b>Step 6</b></p> | <p>If you clicked the <b>Yes</b> button to view the folder, <i>the <b>Windows Explorer</b> window with the <b>GUPS</b> directories is opened.</i> All zip data output files for the VTD are stored in the directory: <b>\GUPSGIS\gupsdata\VTD&lt;yy&gt;\output\</b>. (The home directory will differ depending on the drive where you installed the software or specified your GUPS directory.)</p> <p><b>Note:</b> Files created using the <b>Export to Census</b> radio button will have the naming convention <b>vtd&lt;yy&gt;_&lt;ssccc&gt;_return.zip</b>.</p> <p>Submit files to the Census Bureau using the instructions in <b>Section 9 File Submission through SWIM</b>.</p> |

## Section 9. File Submission through SWIM

SWIM is a tool for U.S. Census Bureau partners to send their geospatial data to a Census Bureau server. For security reasons, we cannot accept files sent via email or through our former FTP site. Note that SWIM cannot accept files larger than 250MB or zip files that contain zip files. SWIM supports the current and last previous versions of Internet Explorer, Google Chrome, Mozilla Firefox and Apple Safari browsers.

The Census Bureau will only accept files submitted by the State RDP Liaison. If a county, agency, or contractor is performing work on behalf of the state, the State RDP Liaison must submit the files.

To establish a SWIM account, the Census Bureau must first provide a user a registration token, which is a unique, single-use 12-digit number associated to an individual. Every user must have a unique token in order to register. Once the token has been used to establish your account, it is no longer required to access your account.

If you have submitted files for BBSP or BBSPV, use the same SWIM account.

To access the SWIM, enter the following URL in a new browser window:

<<https://respond.census.gov/swim/>>. Follow the directions below for account access and file upload.

### 9.1 Login Page

The Login page is the first page you see, as shown in **Figure 22**.

**If you already have a SWIM Account:**

1. Enter your Email address and Password.
2. Click the **Login** button, which directs you to the **Welcome** page.

**SWIM - Secure Web Incoming Module**

### Please Login

Welcome to the Census Bureau's Secure Web Incoming Module (SWIM). The SWIM is the official web portal for uploading partnership materials to the Census Bureau.

Please note: sessions will expire after 15 minutes of inactivity.

Email:

Password:

[Forgot your password?](#)

**If you already have a SWIM account, type in your Email and Password and click the Login button.**

**If you do not have a SWIM account, click Register Account. You must first have a SWIM token to create your account.**

**\*\* WARNING \*\***

You have accessed a UNITED STATES GOVERNMENT computer. Use of this computer without authorization or for purposes for which authorization has not been extended is a violation of Federal law and can be punished with fines or imprisonment (PUBLIC LAW 99-474). System usage may be monitored, recorded, and subject to audit. Any information you enter into this system may be used by the Census Bureau for statistical purposes, including but not limited to improving the efficiency of our data collection programs. For information regarding the use of this system, and how your privacy is protected, visit our online privacy webpage at <http://www.census.gov/privacy/>. Use of this system indicates consent to the collection, monitoring, recording, and use of information provided inside this system.

**Figure 22. SWIM Login Screen**

## If you do not yet have a SWIM Account:

1. Click the Register Account button, which directs you to the Account Registration page, shown in Figure 23.
2. Enter the **12-digit Registration Token** number provided to you by the Census Bureau. If you do not have a token, contact the CRVRDO at 301-763-4039 or [rdo@census.gov](mailto:rdo@census.gov).
3. Complete all other fields. Note that email addresses are case sensitive, but passwords and security question answers are not. Click the **Submit** button.

The screenshot shows the 'Account Registration' page of the SWIM (Secure Web Incoming Module). The page has a blue header with the SWIM logo and the text 'Secure Web Incoming Module'. In the top right corner, there is a link for 'Already Registered? Login here'. The main content area contains a registration form with the following fields: 'Registration Token', 'First Name', 'Last Name', 'Phone Number' (with a dropdown for country code and a '#' symbol), 'Agency', 'Email', 'Confirm Email', 'Password', 'Confirm Password', 'Security Question' (a dropdown menu with the text 'Please select a verification question'), and 'Answer'. A 'Submit' button is located at the bottom left of the form. Three yellow callout boxes with blue arrows provide instructions: the first points to the 'Registration Token' field with the text 'Enter the Registration Token number provided to you by the Census Bureau.'; the second points to the 'First Name' field with the text 'The name you enter as "First Name" will be the name that appears on the Welcome Page.'; and the third points to the remaining fields with the text 'Complete all the other fields.'

Figure 23. SWIM Account Registration Screen

## 9.2 Welcome Page

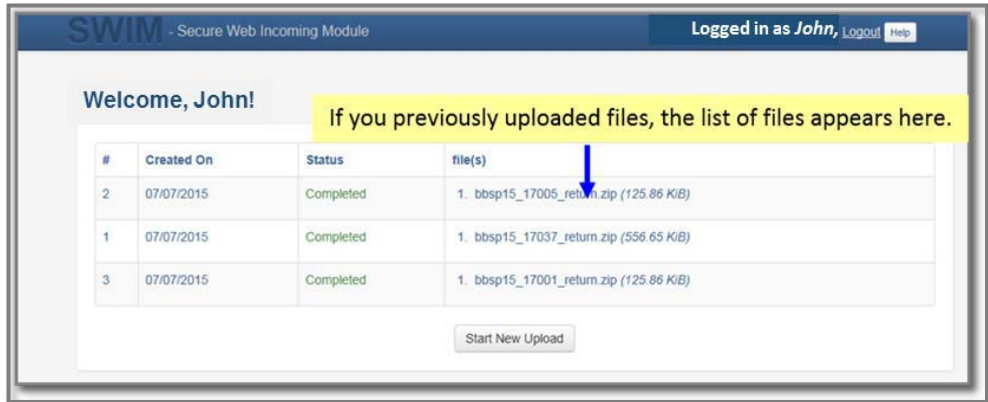
The Welcome Page is where you initiate the file upload process. Because the SWIM tracks files submitted and the submission date, the page appearance will change after you have successfully uploaded files. **Figure 24** depicts the Welcome Page if you have not yet uploaded any files. **Figure 25** depicts the Welcome Page appearance after you have uploaded files.

To submit a file, click the **Start New Upload** button.





**Figure 24. SWIM Welcome Page (no previous files uploaded)**



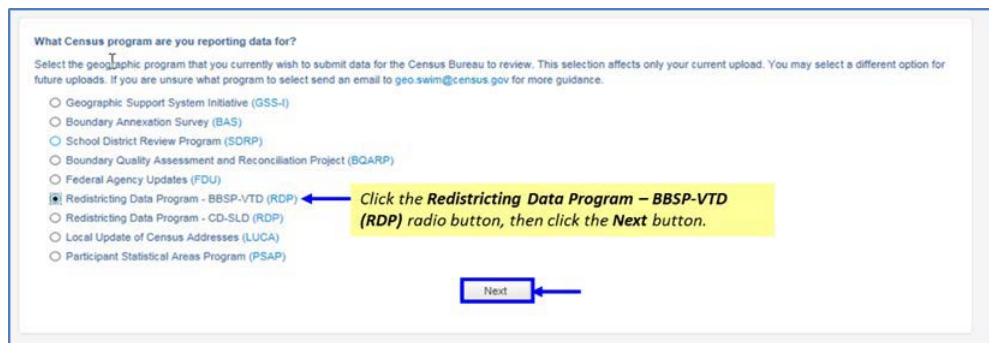
**Figure 25. SWIM Welcome Page (files previously uploaded)**

### 9.3 Geographic Program Page

The Geographic Program Page, shown in **Figure 26**, allows you to select the partnership program for which you are submitting data.

Click on the radio button next to **Redistricting Data Program – BBSP-VTD (RDP)**.

Click the **Next** button.



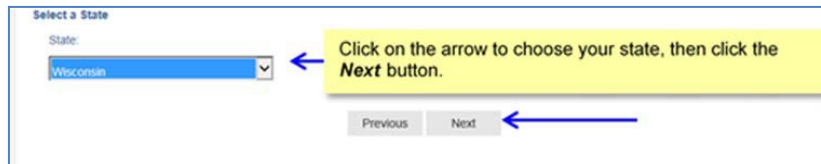
**Figure 26. SWIM Geographic Program Page**

## 9.4 Select a State

After choosing the **Redistricting Data Program – BBSP-VTD (RDP)**, you must specify the state for which you are submitting data, as shown in **Figure 27**.

From the drop-down list, click on your **State** name.

Click on the **Next** button.



**Figure 27. SWIM Select a State Page (for BBSP-VTD)**

## 9.5 Select a Zip File to Upload

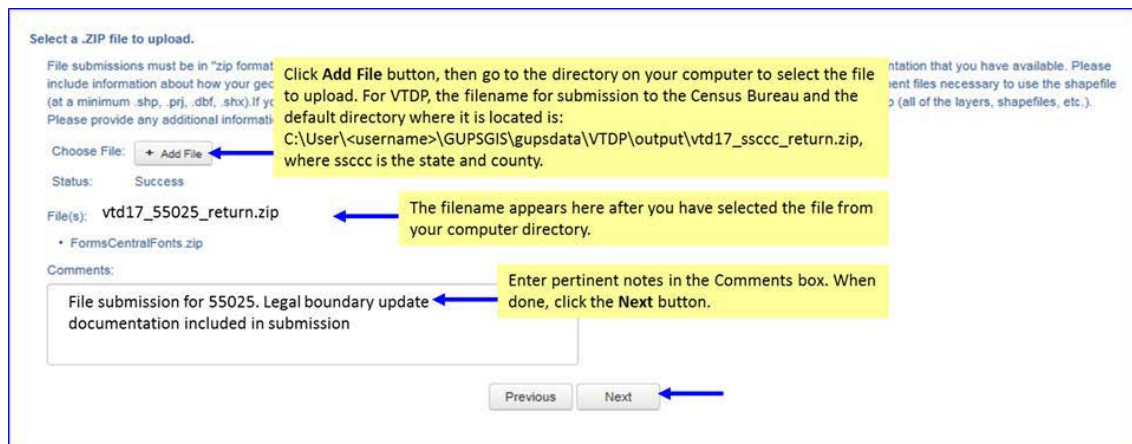
**Figure 28** depicts the file upload page for the Redistricting Data Program. The GUPS will automatically create a separate zip file for each county.

Click on the **+ Add File** button.

Navigate to the directory on your computer to choose the zip file to upload.

Complete the **Comments** box, including pertinent information about data projection or supporting documentation.

Click on the **Next** button.



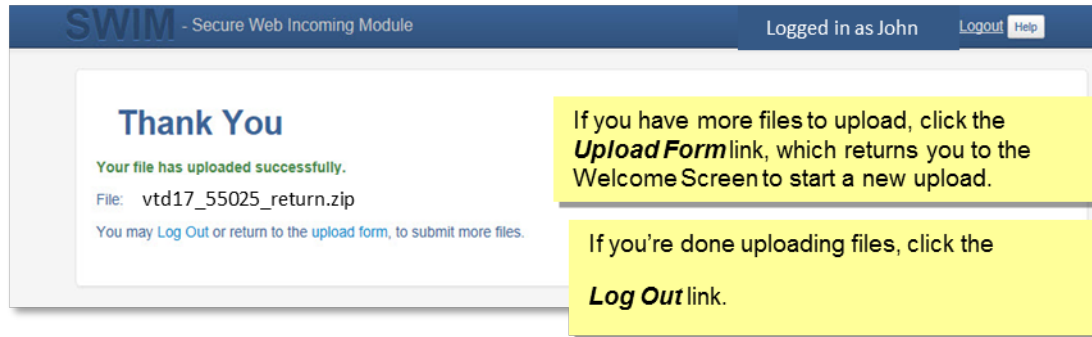
**Figure 28. SWIM Select a Zip File to Upload Page**

## 9.6 Thank You Page

The “**Thank You**” page, as shown below, confirms the receipt of your file submission.

If you do not have any additional files to upload, click on **Log Out**. The Census Bureau will acknowledge the receipt of the uploaded file.

If you have additional files to upload, click on **Upload Form**. This choice returns you to the **Welcome** screen.



**Figure 29: SWIM Thank You Page**

# Appendices

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## APPENDIX A Updates Allowed by MTFCC

The following three tables list, by MTFCC, the geographic updates permitted for area landmarks, linear features, and point landmarks.

**Table 61: Area Landmark Updates Permitted**

| MTFCC | DESCRIPTION   |
|-------|---|
| C3023 | Island  |
| H2030 | Lake/Pond   |
| H2040 | Reservoir   |
| H2041 | Treatment Pond  |
| H2051 | Bay/Estuary/Gulf/Sound  |
| H2081 | Glacier   |
| K1231 | Hospital  |
| K1235 | Juvenile Institution  |
| K1236 | Local Jail or Detention Center  |
| K1237 | Federal Penitentiary, State Prison, or Prison Farm  |
| K2110 | Military Installation   |
| K2131 | Hospital/Hospice/Urgent Care Facility   |
| K2180 | Park  |
| K2181 | National Park Service Land  |
| K2182 | National Forest or Other Federal Land   |
| K2183 | Tribal Park, Forest, or Recreation Area   |
| K2184 | State Park, Forest, or Recreation Area  |
| K2185 | Regional Park, Forest, or Recreation Area   |
| K2186 | County Park, Forest, or Recreation Area   |
| K2187 | County Subdivision Park, Forest, or Recreation Area                                       |
| K2188 | Incorporated Place Park, Forest, or Recreation Area                                       |
| K2189 | Private Park, Forest, or Recreation Area  |
| K2190 | Other Park, Forest, or Recreation Area (quasi-public, independent park, commission, etc.) |
| K2424 | Marina  |

| MTFCC | DESCRIPTION                   |
|-------|-------------------------------|
| K2457 | Airport - Area Representation |
| K2540 | University or College         |
| K2561 | Golf Course                   |
| K2582 | Cemetery                      |

**Table 62: Linear Feature Updates Permitted**

\*These features are only accepted as adds when used as a boundary for geographic area or as a suggested block boundary.

| MTFCC | DESCRIPTION  |
|-------|--|
| C3024 | Levee  |
| C3027 | Dam  |
| H3010 | Stream/River   |
| H3013 | Braided Stream   |
| H3020 | Canal, Ditch, or Aqueduct  |
| K2432 | Pier/Dock  |
| K2459 | Runway/Taxiway   |
| L4010 | Pipeline*  |
| L4020 | Power Line*  |
| L4110 | Fence Line*  |
| L4121 | Ridge Line*  |
| L4125 | Cliff/Escarpment*  |
| L4130 | Point-to Point Line*   |
| L4140 | Property/Parcel Line (includes PLSS)*  |
| L4165 | Ferry Crossing*  |
| P0001 | Nonvisible Legal/Statistical Boundary  |
| P0002 | Perennial Shoreline  |
| P0003 | Intermittent Shoreline   |
| P0004 | Other non-visible bounding edge (e.g., Census water boundary, boundary of areal feature) |
| R1011 | Railroad Feature (Main, Spur, or Yard  |

| MTFCC | DESCRIPTION  |
|-------|--|
| R1051 | Carline, Streetcar Tract Monorail, Other Mass                          |
| R1052 | Cog Rail Line, Incline Rail Line, Tram                                 |
| S1100 | Primary Road   |
| S1200 | Secondary Road   |
| S1400 | Local Neighborhood Road, Rural Road, City Street                       |
| S1500 | Vehicular Trail (4WD)  |
| S1630 | Ramp   |
| S1640 | Service Drive usually along a limited access highway                   |
| S1730 | Alley  |
| S1740 | Private Road for service vehicles (logging, oil fields, ranches, etc.) |
| S1820 | Bike Path or Trail   |

## APPENDIX B Street Type Abbreviations

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The MAF/TIGER system uses the U.S. Postal Service standard abbreviations for street name types. The table below lists the street name type and the standard abbreviation to use when updating or adding street names to the MAF/TIGER system.

**Table 63: Street Type Abbreviations**

| Street Name Type | Standard Abbreviation |
|------------------|-----------------------|
| ALLEY            | ALY                   |
| ANEX             | ANX                   |
| ARCADE           | ARC                   |
| AVENUE           | AVE                   |
| BAYOU            | BYU                   |
| BEACH            | BCH                   |
| BEND             | BND                   |
| BLUFF            | BLF                   |
| BLUFFS           | BLFS                  |
| BOTTOM           | BTM                   |
| BOULEVARD        | BLVD                  |
| BRANCH           | BR                    |
| BRIDGE           | BRG                   |
| BROOK            | BRK                   |
| BROOKS           | BRKS                  |
| BURG             | BG                    |
| BURGS            | BGS                   |
| BYPASS           | BYP                   |
| CAMP             | CP                    |
| CANYON           | CYN                   |
| CAPE             | CPE                   |
| CAUSEWAY         | CSWY                  |
| CENTER           | CTR                   |
| CENTERS          | CTRS                  |



| Street Name Type | Standard Abbreviation |
|------------------|-----------------------|
| CIRCLE           | CIR                   |
| CIRCLES          | CIRS                  |
| CLIFF            | CLF                   |
| CLIFFS           | CLFS                  |
| CLUB             | CLB                   |
| COMMON           | CMN                   |
| COMMONS          | CMNS                  |
| CORNER           | COR                   |
| CORNERS          | CORS                  |
| COURSE           | CRSE                  |
| COURT            | CT                    |
| COURTS           | CTS                   |
| COVE             | CV                    |
| COVES            | CVS                   |
| CREEK            | CRK                   |
| CRESCENT         | CRES                  |
| CREST            | CRST                  |
| CROSSING         | XING                  |
| CROSSROAD        | XRD                   |
| CROSSROADS       | XRDS                  |
| CURVE            | CURV                  |
| DALE             | DL                    |
| DAM              | DM                    |
| DIVIDE           | DV                    |
| DRIVE            | DR                    |
| DRIVES           | DRS                   |
| ESTATE           | EST                   |
| ESTATES          | ESTS                  |
| EXPRESSWAY       | EXPY                  |

| Street Name Type | Standard Abbreviation |
|------------------|-----------------------|
| EXTENSION        | EXT                   |
| EXTENSIONS       | EXTS                  |
| FALL             | FALL                  |
| FALLS            | FLS                   |
| FERRY            | FRY                   |
| FIELD            | FLD                   |
| FIELDS           | FLDS                  |
| FLAT             | FLT                   |
| FLATS            | FLTS                  |
| FORD             | FRD                   |
| FORDS            | FRDS                  |
| FOREST           | FRST                  |
| FORGE            | FRG                   |
| FORGES           | FRGS                  |
| FORK             | FRK                   |
| FORKS            | FRKS                  |
| FORT             | FT                    |
| FREEWAY          | FWY                   |
| GARDEN           | GDN                   |
| GARDENS          | GDNS                  |
| GATEWAY          | GTWY                  |
| GLEN             | GLN                   |
| GLENS            | GLNS                  |
| GREEN            | GRN                   |
| GREENS           | GRNS                  |
| GROVE            | GRV                   |
| GROVES           | GRVS                  |
| HARBOR           | HBR                   |
| HARBORS          | HBRS                  |

| Street Name Type | Standard Abbreviation |
|------------------|-----------------------|
| HAVEN            | HVN                   |
| HEIGHTS          | HTS                   |
| HIGHWAY          | HWY                   |
| HILL             | HL                    |
| HILLS            | HLS                   |
| HOLLOW           | HOLW                  |
| INLET            | INLT                  |
| ISLAND           | IS                    |
| ISLANDS          | ISS                   |
| ISLE             | ISLE                  |
| JUNCTION         | JCT                   |
| JUNCTIONS        | JCTS                  |
| KEY              | KY                    |
| KEYS             | KYS                   |
| KNOLL            | KNL                   |
| KNOLLS           | KNLS                  |
| LAKE             | LK                    |
| LAKES            | LKS                   |
| LAND             | LAND                  |
| LANDING          | LNDG                  |
| LANE             | LN                    |
| LIGHT            | LGT                   |
| LIGHTS           | LGTS                  |
| LOAF             | LF                    |
| LOCK             | LCK                   |
| LOCKS            | LCKS                  |
| LODGE            | LDG                   |
| LOOP             | LOOP                  |
| MALL             | MALL                  |

| Street Name Type | Standard Abbreviation |
|------------------|-----------------------|
| MANOR            | MNR                   |
| MANORS           | MNRS                  |
| MEADOW           | MDW                   |
| MEADOWS          | MDWS                  |
| MEWS             | MEWS                  |
| MILL             | ML                    |
| MILLS            | MLS                   |
| MISSION          | MSN                   |
| MOTORWAY         | MTWY                  |
| MOUNT            | MT                    |
| MOUNTAIN         | MTN                   |
| MOUNTAINS        | MTNS                  |
| NECK             | NCK                   |
| ORCHARD          | ORCH                  |
| OVAL             | OVAL                  |
| OVERPASS         | OPAS                  |
| PARK             | PARK                  |
| PARKS            | PARK                  |
| PARKWAY          | PKWY                  |
| PARKWAYS         | PKWY                  |
| PASS             | PASS                  |
| PASSAGE          | PSGE                  |
| PATH             | PATH                  |
| PIKE             | PIKE                  |
| PINE             | PNE                   |
| PINES            | PNES                  |
| PLACE            | PL                    |
| PLAIN            | PLN                   |
| PLAINS           | PLNS                  |

| Street Name Type | Standard Abbreviation |
|------------------|-----------------------|
| PLAZA            | PLZ                   |
| POINT            | PT                    |
| POINTS           | PTS                   |
| PORT             | PRT                   |
| PORTS            | PRTS                  |
| PRAIRIE          | PR                    |
| RADIAL           | RADL                  |
| RAMP             | RAMP                  |
| RANCH            | RNCH                  |
| RAPID            | RPD                   |
| RAPIDS           | RPDS                  |
| REST             | RST                   |
| RIDGE            | RDG                   |
| RIDGES           | RDGS                  |
| RIVER            | RIV                   |
| ROAD             | RD                    |
| ROADS            | RDS                   |
| ROUTE            | RTE                   |
| ROW              | ROW                   |
| RUE              | RUE                   |
| RUN              | RUN                   |
| SHOAL            | SHL                   |
| SHOALS           | SHLS                  |
| SHORE            | SHR                   |
| SHORES           | SHRS                  |
| SKYWAY           | SKWY                  |
| SPRING           | SPG                   |
| SPRINGS          | SPGS                  |
| SPUR             | SPUR                  |

| Street Name Type | Standard Abbreviation |
|------------------|-----------------------|
| SPURS            | SPUR                  |
| SQUARE           | SQ                    |
| SQUARES          | SQS                   |
| STATION          | STA                   |
| STRAVENUE        | STRA                  |
| STREAM           | STRM                  |
| STREET           | ST                    |
| STREETS          | STS                   |
| SUMMIT           | SMT                   |
| TERRACE          | TER                   |
| THROUGHWAY       | TRWY                  |
| TRACE            | TRCE                  |
| TRACK            | TRAK                  |
| TRAFFICWAY       | TRFY                  |
| TRAIL            | TRL                   |
| TRAILER          | TRLR                  |
| TUNNEL           | TUNL                  |
| TURNPIKE         | TPKE                  |
| UNDERPASS        | UPAS                  |
| UNION            | UN                    |
| UNIONS           | UNS                   |
| VALLEY           | VLY                   |
| VALLEYS          | VLYS                  |
| VIADUCT          | VIA                   |
| VIEW             | VW                    |
| VIEWS            | VWS                   |
| VILLAGE          | VLG                   |
| VILLAGES         | VLGS                  |
| VILLE            | VL                    |

| Street Name Type | Standard Abbreviation |
|------------------|-----------------------|
| VISTA            | VIS                   |
| WALK             | WALK                  |
| WALKS            | WALK                  |
| WALL             | WALL                  |
| WAY              | WAY                   |
| WAYS             | WAYS                  |
| WELL             | WL                    |
| WELLS            | WLS                   |

## APPENDIX C MTFCC Descriptions

The MAF/TIGER Feature Classification Code (MTFCC) is a 5-digit code assigned by the Census Bureau to classify and describe geographic objects or features in Census Bureau MAF/TIGER products. The table below describes each code. You can download a more comprehensive version of the table at <http://www.census.gov/geo/reference/mtfcc.html>.

**Table 64: Complete List of MTFCC Descriptions**

| MTFCC | Feature Class                                    | Feature Class Description  |
|-------|--|--|
| C3022 | Mountain Peak or Summit                          | A prominent elevation rising above the surrounding level of the Earth's surface.   |
| C3023 | Island   | An area of dry or relatively dry land surrounded by water or low wetland. [including archipelago, atoll, cay, hammock, hummock, isla, isle, key, moku and rock]  |
| C3024 | Levee  | An embankment flanking a stream or other flowing water feature to prevent overflow.  |
| C3026 | Quarry (not water-filled), Open Pit Mine or Mine | An area from which commercial minerals are or were removed from the Earth; not including an oilfield or gas field.   |
| C3027 | Dam  | A barrier built across the course of a stream to impound water and/or control water flow.  |
| C3061 | Cul-de-sac                                       | An expanded paved area at the end of a street used by vehicles for turning around. For mapping purposes, the U.S. Census Bureau maps it only as a point feature. |
| C3062 | Traffic Circle                                   | A circular intersection allowing for continuous movement of traffic at the meeting of roadways.  |
| C3066 | Gate   | A movable barrier across a road.   |
| C3067 | Toll Booth                                       | A structure or barrier where a fee is collected for using a road.  |
| C3071 | Lookout Tower                                    | A manmade structure, higher than its diameter, used for observation.   |
| C3074 | Lighthouse Beacon                                | A manmade structure, higher than its diameter, used for transmission of light and possibly sound generally to aid in navigation.                                 |
| C3075 | Tank/Tank Farm                                   | One or more manmade structures, each higher than its diameter, used for liquid (other than water) or gas storage or for distribution activities.                 |
| C3076 | Windmill Farm                                    | One or more manmade structures used to generate power from the wind.   |
| C3077 | Solar Farm                                       | One or more manmade structures used to generate power from the sun.  |
| C3078 | Monument or Memorial                             | A manmade structure to educate, commemorate, or memorialize an event, person, or feature.  |
| C3079 | Boundary Monument Point                          | A material object placed on or near a boundary line to preserve and identify the location of the boundary line on the ground.                                    |



| MTFCC | Feature Class                            | Feature Class Description  |
|-------|--|--|
| C3080 | Survey Control Point                     | A point on the ground whose position (horizontal or vertical) is known and can be used as a base for additional survey work.   |
| C3081 | Locality Point                           | A point that identifies the location and name of an unbounded locality (e.g., crossroad, community, populated place or locale).  |
| C3085 | Alaska Native Village Official Point     | A point that serves as the core of an Alaska Native village and is used in defining Alaska Native village statistical areas.   |
| G2100 | American Indian Area                     | A legally defined state- or federally recognized reservation and/or off-reservation trust land (excludes statistical American Indian areas).   |
| G2120 | Hawaiian Home Land                       | A legal area held in trust for the benefit of Native Hawaiians.  |
| G2130 | Alaska Native Village Statistical Area   | A statistical geographic entity that represents the residences, permanent and/or seasonal, for Alaska Natives who are members of or receiving governmental services from the defining legal Alaska Native Village corporation.   |
| G2140 | Oklahoma Tribal Statistical Area         | A statistical entity identified and delineated by the Census Bureau in consultation with federally recognized American Indian tribes that have no current reservation, but had a former reservation in Oklahoma.   |
| G2150 | State-designated Tribal Statistical Area | A statistical geographic entity identified and delineated for the Census Bureau by a state-appointed liaison for a state-recognized American Indian tribe that does not currently have a reservation and/or lands in trust.  |
| G2160 | Tribal Designated Statistical Area       | A statistical geographic entity identified and delineated for the Census Bureau by a federally recognized American Indian tribe that does not currently have a reservation and/or off-reservation trust land.  |
| G2170 | American Indian Joint Use Area           | An area administered jointly and/or claimed by two or more American Indian tribes.   |
| G2200 | Alaska Native Regional Corporation       | Corporate entities established to conduct both business and nonprofit affairs of Alaska Natives pursuant to the Alaska Native Claims Settlement Act of 1972 (Public Law 92-203). There are twelve geographically defined ANRCs and they are all within and cover most of the State of Alaska (the Annette Island Reserve-an American Indian reservation-is excluded from any ANRC). The boundaries of ANRCs have been legally established. |
| G2300 | Tribal Subdivision                       | Administrative subdivisions of federally recognized American Indian reservations, off-reservation trust lands, or Oklahoma tribal statistical areas (OTSAs). These entities are internal units of self-government or administration that serve social, cultural, and/or economic purposes for the American Indians on the reservations, off-reservation trust lands, or OTSAs.   |
| G2400 | Tribal Census Tract                      | A relatively small and permanent statistical subdivision of a federally recognized American Indian reservation and/or off-reservation trust land, delineated by American Indian tribal participants or the Census Bureau for the purpose of presenting demographic data.   |
| G2410 | Tribal Block Group                       | A cluster of census blocks within a single tribal census tract delineated by American Indian tribal participants or the Census Bureau for the purpose of presenting demographic data   |

| MTFCC | Feature Class  | Feature Class Description  |
|-------|--|--|
| G3100 | Combined Statistical Area  | A grouping of adjacent metropolitan and/or micropolitan statistical areas that have a degree of economic and social integration, as measured by commuting.   |
| G3110 | Metropolitan and Micropolitan Statistical Area                           | An area containing a substantial population nucleus together with adjacent communities having a high degree of economic and social integration with that core, as measured by commuting. Defined using whole counties and equivalents.   |
| G3120 | Metropolitan Division  | A county or grouping of counties that is a subdivision of a Metropolitan Statistical Area containing an urbanized area with a population of 2.5 million or more.   |
| G3200 | Combined New England City and Town Area                                  | A grouping of adjacent New England city and town areas that have a degree of economic and social integration, as measured by commuting.  |
| G3210 | New England City and Town Metropolitan and Micropolitan Statistical Area | An area containing a substantial population nucleus together with adjacent communities having a high degree of economic and social integration with that core, as measured by commuting. Defined using Minor Civil Divisions (MCDs) in New England.  |
| G3220 | New England City and Town Division                                       | A grouping of cities and towns in New England that is a subdivision of a New England City and Town Area containing an urbanized area with a population of 2.5 million or more.   |
| G3500 | Urban Area   | Densely settled territory that contains at least 2,500 people. The subtypes of this feature are Urbanized Area (UA), which consists of 50,000 + people and Urban Cluster, which ranges between 2,500 and 49,999 people.  |
| G4000 | State or Equivalent Feature  | The primary governmental divisions of the United States. The District of Columbia is treated as a statistical equivalent of a state for census purposes, as is Puerto Rico.  |
| G4020 | County or Equivalent Feature   | The primary division of a state or state equivalent area. The primary divisions of 48 states are termed County, but other terms are used such as Borough in Alaska, Parish in Louisiana, and Municipio in Puerto Rico. This feature includes independent cities, which are incorporated places that are not part of any county.                  |
| G4040 | County Subdivision   | The primary divisions of counties and equivalent features for the reporting of Census Bureau data. The subtypes of this feature are Minor Civil Division, Census County Division/Census Subarea, and Unorganized Territory. This feature includes independent places, which are incorporated places that are not part of any county subdivision. |
| G4050 | Estate   | Estates are subdivisions of the three major islands in the United States Virgin Islands (USVI).  |
| G4060 | Subbarrio (Subminor Civil Division)                                      | Legally defined divisions (subbarrios) of minor civil divisions (barrios-pueblo and barrios) in Puerto Rico.   |
| G4110 | Incorporated Place   | A legal entity incorporated under state law to provide general-purpose governmental services to a concentration of population. Incorporated places are generally designated as a city, borough, municipality, town, village, or, in a few instances, have no legal description.  |
| G4120 | Consolidated City  | An incorporated place that has merged governmentally with a county or minor civil division, but one or more of the incorporated  |

| MTFCC | Feature Class                              | Feature Class Description   |
|-------|--|---|
|       |  | places continues to function within the consolidation. It is a place that contains additional separately incorporated places.   |
| G4210 | Census Designated Place                    | A statistical area defined for a named concentration of population and the statistical counterpart of an incorporated place.  |
| G4300 | Economic Census Place                      | The lowest level of geographic area for presentation of some types of Economic Census data. It includes incorporated places, consolidated cities, census designated places (CDPs), minor civil divisions (MCDs) in selected states, and balances of MCDs or counties. An incorporated place, CDP, MCD, or balance of MCD qualifies as an economic census place if it contains 5,000 or more residents, or 5,000 or more jobs, according to the most current data available. |
| G5020 | Census Tract                               | Relatively permanent statistical subdivisions of a County or equivalent feature delineated by local participants as part of the Census Bureau's Participant Statistical Areas Program.  |
| G5030 | Block Group                                | A cluster of census blocks having the same first digit of their four-digit identifying numbers within a Census Tract. For example, block group 3 (BG 3) within a Census Tract includes all blocks numbered from 3000 to 3999.   |
| G5035 | Block Area Grouping                        | A user-defined group of islands forming a single census tabulation block. A BAG must: (1) consist of two or more islands, (2) have a perimeter entirely over water, (3) not overlap, and (4) not cross the boundary of other tabulation geographies, such as county or incorporated place boundaries.   |
| G5040 | Tabulation Block                           | The lowest-order census defined statistical area. It is an area, such as a city block, bounded primarily by physical features but sometimes by invisible city or property boundaries. A tabulation block boundary does not cross the boundary of any other geographic area for which the Census Bureau tabulates data. The subtypes of this feature are Count Question Resolution (CQR), current, and census.   |
| G5200 | Congressional District                     | The 435 areas from which people are elected to the U.S. House of Representatives. Additional equivalent features exist for state equivalents with nonvoting delegates or no representative. The subtypes of this feature are 106th, 107th, 108th, 109th, and 111th Congressional Districts, plus subsequent Congresses.   |
| G5210 | State Legislative District (Upper Chamber) | Areas established by a state or equivalent government from which members are elected to the upper or unicameral chamber of a state governing body. The upper chamber is the senate in a bicameral legislature, and the unicameral case is a single house legislature (Nebraska).  |
| G5220 | State Legislative District (Lower Chamber) | Areas established by a state or equivalent government from which members are elected to the lower chamber of a state governing body. The lower chamber is the House of Representatives in a bicameral legislature.  |
| G5240 | Voting District                            | The generic name for the geographic features, such as precincts, wards, and election districts, established by state, local, and tribal governments for the purpose of conducting elections.  |
| G5400 | Elementary School District                 | A geographic area within which officials provide public elementary grade-level educational services for residents.  |

| MTFCC | Feature Class                         | Feature Class Description   |
|-------|---------------------------------------|---|
| G5410 | Secondary School District             | A geographic area within which officials provide public secondary grade-level educational services for residents.   |
| G5420 | Unified School District               | A geographic area within which officials provide public educational services for all grade levels for residents.  |
| G6120 | Public-Use Microdata Area             | A decennial census area with a population of at least 100,000 or more persons for which the Census Bureau provides selected extracts of household-level data that are screened to protect confidentiality   |
| G6300 | Traffic Analysis District             | An area delineated by Metropolitan Planning Organizations (MPOs) and state Departments of Transportation (DOTs) for tabulating journey-to-work and place-of-work data. A Traffic Analysis District (TAD) consists of one or more Traffic Analysis Zones (TAZs). |
| G6320 | Traffic Analysis Zone                 | An area delineated by Metropolitan Planning Organizations (MPOs) and state Departments of Transportation (DOTs) for tabulating journey-to-work and place-of-work data.  |
| G6330 | Urban Growth Area                     | An area defined under state authority to manage urbanization that the U.S. Census Bureau includes in the MAF/TIGER® Database in agreement with the state.   |
| G6350 | Zip Code Tabulation Area (Five-Digit) | An approximate statistical-area representation of a U.S. Postal Service (USPS) 5-digit Zip Code service area.   |
| G6400 | Commercial Region                     | For the purpose of presenting economic statistical data, municipios in Puerto Rico are grouped into commercial regions.   |
| H1100 | Connector                             | A known, but nonspecific, hydrographic connection between two nonadjacent water features.   |
| H2025 | Swamp/Marsh                           | A poorly drained wetland, fresh or saltwater, wooded or grassy, possibly covered with open water. [includes bog, cienega, marais and pocosin]   |
| H2030 | Lake/Pond                             | A standing body of water that is surrounded by land.  |
| H2040 | Reservoir                             | An artificially impounded body of water.  |
| H2041 | Treatment Pond                        | An artificial body of water built to treat fouled water.  |
| H2051 | Bay/Estuary/Gulf/Sound                | A body of water partly surrounded by land. [includes arm, bight, cove and inlet]  |
| H2053 | Ocean/Sea                             | The great body of salt water that covers much of the earth.   |
| H2060 | Gravel Pit/Quarry filled with water   | A body of water in a place or area from which commercial minerals were removed from the Earth.  |
| H2081 | Glacier                               | A body of ice moving outward and down slope from an area of accumulation; an area of relatively permanent snow or ice on the top or side of a mountain or mountainous area. [includes ice field and ice patch]  |
| H3010 | Stream/River                          | A natural flowing waterway. [includes anabranch, awawa, branch, brook, creek, distributary, fork, kill, pup, rio, and run]  |
| H3013 | Braided Stream                        | A natural flowing waterway with an intricate network of interlacing channels.   |
| H3020 | Canal, Ditch or Aqueduct              | An artificial waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft. [includes lateral]  |

| MTFCC | Feature Class   | Feature Class Description   |
|-------|---|---|
| K1225 | Crew-of-Vessel Location                                     | A point or area in which the population of military or merchant marine vessels at sea are assigned, usually being at or near the home port pier.  |
| K1231 | Hospital/Hospice/Urgent Care Facility                       | One or more structures where the sick or injured may receive medical or surgical attention. [including infirmary]   |
| K1235 | Juvenile Institution  | A facility (correctional or non-correctional) where groups of juveniles reside; this includes training schools, detention centers, residential treatment centers and orphanages.  |
| K1236 | Local Jail or Detention Center                              | One or more structures that serve as a place for the confinement of adult persons in lawful detention, administered by a local (county, municipal, etc.) government.  |
| K1237 | Federal Penitentiary, State Prison, or Prison Farm          | An institution that serves as a place for the confinement of adult persons in lawful detention, administered by the federal government or a state government.   |
| K1238 | Other Correctional Institution                              | One or more structures that serve as a place for the confinement of adult persons in lawful detention, not elsewhere classified or administered by a government of unknown jurisdiction.                                  |
| K1239 | Convent, Monastery, Rectory, Other Religious Group Quarters | One or more structures intended for use as a residence for those having a religious vocation.   |
| K1246 | Community Center  | Community Center.   |
| K2110 | Military Installation                                       | An area owned and/or occupied by the Department of Defense for use by a branch of the armed forces (such as the Army, Navy, Air Force, Marines, or Coast Guard), or a state owned area for the use of the National Guard. |
| K2165 | Government Center   | A place used by members of government (either federal, state, local, or tribal) for administration and public business.   |
| K2167 | Convention Center   | An exhibition hall or conference center with enough open space to host public and private business and social events.   |
| K2180 | Park  | Parkland defined and administered by federal, state, and local governments.   |
| K2181 | National Park Service Land                                  | Area—National parks, National Monuments, and so forth—under the jurisdiction of the National Park Service.  |
| K2182 | National Forest or Other Federal Land                       | Land under the management and jurisdiction of the federal government, specifically including areas designated as National Forest, and excluding areas under the jurisdiction of the National Park Service.                |
| K2183 | Tribal Park, Forest, or Recreation Area                     | A place or area set aside for recreation or preservation of a cultural or natural resource and under the administration of an American Indian tribe.  |
| K2184 | State Park, Forest, or Recreation Area                      | A place or area set aside for recreation or preservation of a cultural or natural resource and under the administration of a state government.  |

| MTFCC | Feature Class   | Feature Class Description  |
|-------|---|--|
| K2185 | Regional Park, Forest, or Recreation Area   | A place or area set aside for recreation or preservation of a cultural or natural resource and under the administration of a regional government.  |
| K2186 | County Park, Forest, or Recreation Area   | A place or area set aside for recreation or preservation of a cultural or natural resource and under the administration of a county government.  |
| K2187 | County Subdivision Park, Forest, or Recreation Area                                       | A place or area set aside for recreation or preservation of a cultural or natural resource and under the administration of a minor civil division (town/township) government.  |
| K2188 | Incorporated Place Park, Forest, or Recreation Area                                       | A place or area set aside for recreation or preservation of a cultural or natural resource and under the administration of a municipal government.   |
| K2189 | Private Park, Forest, or Recreation Area  | A privately owned place or area set aside for recreation or preservation of a cultural or natural resource.  |
| K2190 | Other Park, Forest, or Recreation Area (quasi-public, independent park, commission, etc.) | A place or area set aside for recreation or preservation of a cultural or natural resource and under the administration of some other type of government or agency such as an independent park authority or commission.    |
| K2191 | Post Office   | An official facility of the U.S. Postal Service used for processing and distributing mail and other postal material.   |
| K2193 | Fire Department   | Fire Department.   |
| K2194 | Police Station  | Police Station.  |
| K2195 | Library   | Library.   |
| K2196 | City/Town Hall  | City/Town Hall.  |
| K2400 | Transportation Terminal   | A facility where one or more modes of transportation can be accessed by people or for the shipment of goods; examples of such a facility include marine terminal, bus station, train station, airport and truck warehouse. |
| K2432 | Pier/Dock   | A platform built out from the shore into the water and supported by piles. This platform may provide access to ships and boats, or it may be used for recreational purposes.   |
| K2451 | Airport or Airfield   | A manmade facility maintained for the use of aircraft. [including airstrip, landing field and landing strip]   |
| K2452 | Train Station, Trolley or Mass Transit Rail Station                                       | A place where travelers can board and exit rail transit lines, including associated ticketing, freight, and other commercial offices.  |
| K2453 | Bus Terminal  | A place where travelers can board and exit mass motor vehicle transit, including associated ticketing, freight, and other commercial offices.  |
| K2454 | Marine Terminal   | A place where travelers can board and exit water transit or where cargo is handled, including associated ticketing, freight, and other commercial offices.   |

| MTFCC | Feature Class   | Feature Class Description  |
|-------|---|--|
| K2455 | Seaplane Anchorage  | A place where an airplane equipped with floats for landing on or taking off from a body of water can debark and load.  |
| K2456 | Airport—<br>Intermodal<br>Transportation<br>Hub/Terminal                | A major air transportation facility where travelers can board and exit airplanes and connect with other (i.e. non-air) modes of transportation.  |
| K2457 | Airport—<br>Statistical<br>Representation                               | The area of an airport adjusted to include whole 2000 census blocks used for the delineation of urban areas  |
| K2458 | Park and Ride<br>Facility/Parking<br>Lot                                | A place where motorists can park their cars and transfer to other modes of transportation.   |
| K2459 | Runway/Taxiway  | A fairly level and usually paved expanse used by airplanes for taking off and landing at an airport.   |
| K2460 | Helicopter<br>Landing Pad   | A fairly level and usually paved expanse used by helicopters for taking off and landing.   |
| K2540 | University or<br>College  | A building or group of buildings used as an institution for post-secondary study, teaching, and learning. [including seminary]   |
| K2543 | School or<br>Academy  | A building or group of buildings used as an institution for preschool, elementary or secondary study, teaching, and learning. [including elementary school and high school]                    |
| K2545 | Museum, Visitor<br>Center, Cultural<br>Center, or Tourist<br>Attraction | An attraction of historical, cultural, educational or other interest that provides information or displays artifacts.  |
| K2561 | Golf Course   | A place designed for playing golf.   |
| K2582 | Cemetery  | A place or area for burying the dead. [including burying ground and memorial garden]   |
| K2586 | Zoo   | A facility in which terrestrial and/or marine animals are confined within enclosures and displayed to the public for educational, preservation, and research purposes.                         |
| K3544 | Place of Worship  | A sanctified place or structure where people gather for religious worship; examples include church, synagogue, temple, and mosque.   |
| L4010 | Pipeline  | A long tubular conduit or series of pipes, often underground, with pumps and valves for flow control, used to transport fluid (e.g., crude oil, natural gas), especially over great distances. |
| L4020 | Powerline   | One or more wires, often on elevated towers, used for conducting high-voltage electric power.  |
| L4031 | Aerial<br>Tramway/Ski Lift  | A conveyance that transports passengers or freight in carriers suspended from cables and supported by a series of towers.  |
| L4110 | Fence Line  | A man-made barrier enclosing or bordering a field, yard, etc., usually made of posts and wire or wood, used to prevent entrance, to confine, or to mark a boundary.                            |
| L4121 | Ridge Line  | The line of highest elevation along a ridge.   |
| L4125 | Cliff/Escarpment  | A very steep or vertical slope. [including bluff, crag, head, headland, nose, palisades, precipice, promontory, rim and rimrock]   |
| L4130 | Point-to-Point<br>Line  | A line defined as beginning at one location point and ending at another, both of which are in sight.   |

| MTFCC | Feature Class   | Feature Class Description  |
|-------|---|--|
| L4140 | Property/Parcel Line (Including PLSS)   | This feature class may denote a nonvisible boundary of either public or private lands (e.g., a park boundary) or it may denote a Public Land Survey System or equivalent survey line.  |
| L4150 | Coastline   | The line that separates either land or Inland water from Coastal, Territorial or Great Lakes water. Where land directly borders Coastal, Territorial or Great Lakes water, the shoreline represents the Coastline. Where Inland water (such as a river) flows into Coastal, Territorial or Great Lakes water, the closure line separating the Inland water from the other class of water represents the Coastline. |
| L4165 | Ferry Crossing  | The route used to carry or convey people or cargo back and forth over a waterbody in a boat.   |
| P0001 | Nonvisible Linear Legal/Statistical Boundary  | A legal/statistical boundary line that does not correspond to a shoreline or other visible feature on the ground.  |
| P0002 | Perennial Shoreline   | The more-or-less permanent boundary between land and water for a water feature that exists year-round.   |
| P0003 | Intermittent Shoreline  | The boundary between land and water (when water is present) for a water feature that does not exist year-round.  |
| P0004 | Other non-visible bounding Edge (e.g., Census water boundary, boundary of an areal feature) | A bounding Edge that does not represent a legal/statistical boundary, and does not correspond to a shoreline or other visible feature on the ground. Many such Edges bound area landmarks, while many others separate water features from each other (e.g., where a bay meets the ocean).  |
| R1011 | Railroad Feature (Main, Spur, or Yard)  | A line of fixed rails or tracks that carries mainstream railroad traffic. Such a rail line can be a main line or spur line, or part of a rail yard.  |
| R1051 | Carline, Streetcar Track, Monorail, Other Mass Transit                                      | Mass transit rail lines (including lines for rapid transit, monorails, streetcars, light rail, etc.) that are typically inaccessible to mainstream railroad traffic and whose tracks are not part of a road right-of-way.  |
| R1052 | Cog Rail Line, Incline Rail Line, Tram  | A special purpose rail line for climbing steep grades that is typically inaccessible to mainstream railroad traffic. Note that aerial tramways and streetcars (which may also be called "trams") are accounted for by other MTFCCs and do not belong in R1052  |
| S1100 | Primary Road  | Primary roads are generally divided, limited-access highways within the interstate highway system or under state management, and are distinguished by the presence of interchanges. These highways are accessible by ramps and may include some toll highways.   |
| S1200 | Secondary Road  | Secondary roads are main arteries, usually in the U.S. Highway, State Highway or County Highway system. These roads have one or more lanes of traffic in each direction, may or may not be divided, and usually have at-grade intersections with many other roads and driveways. They often have both a local name and a route number.   |
| S1400 | Local Neighborhood Road, Rural Road, City Street  | Generally a paved non-arterial street, road, or byway that usually has a single lane of traffic in each direction. Roads in this feature class may be privately or publicly maintained. Scenic park roads  |



| MTFCC | Feature Class  | Feature Class Description  |
|-------|--|--|
|       |  | would be included in this feature class, as would (depending on the region of the country) some unpaved roads.   |
| S1500 | Vehicular Trail (4WD)  | An unpaved dirt trail where a four-wheel drive vehicle is required. These vehicular trails are found almost exclusively in very rural areas. Minor, unpaved roads usable by ordinary cars and trucks belong in the S1400 category. |
| S1630 | Ramp   | A road that allows controlled access from adjacent roads onto a limited access highway, often in the form of a cloverleaf interchange. These roads are unaddressable and do not carry a name in MAF/TIGER.                         |
| S1640 | Service Drive usually along a limited access highway                   | A road, usually paralleling a limited access highway that provides access to structures along the highway. These roads can be named and may intersect with other roads.  |
| S1710 | Walkway/Pedestrian Trail   | A path that is used for walking, being either too narrow for or legally restricted from vehicular traffic.   |
| S1720 | Stairway   | A pedestrian passageway from one level to another by a series of steps.  |
| S1730 | Alley  | A service road that does not generally have associated addressed structures and is usually unnamed. It is located at the rear of buildings and properties and is used for deliveries.  |
| S1740 | Private Road for service vehicles (logging, oil fields, ranches, etc.) | A road within private property that is privately maintained for service, extractive, or other purposes. These roads are often unnamed.   |
| S1750 | Internal U.S. Census Bureau use  | Internal U.S. Census Bureau use.   |
| S1780 | Parking Lot Road   | The main travel route for vehicles through a paved parking area.   |
| S1820 | Bike Path or Trail   | A path that is used for manual or small, motorized bicycles, being either too narrow for or legally restricted from vehicular traffic.   |
| S1830 | Bridle Path  | A path that is used for horses, being either too narrow for or legally restricted from vehicular traffic.  |
| S2000 | Road Median  | The unpaved area or barrier between the carriageways of a divided road.  |

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**Note:** The information in this table was last updated in November 2016.

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## APPENDIX D Shapefile Data Dictionary

The Census Bureau’s partnership shapefiles consist of numerous layers and their accompanying tables representing different geographies. **Table 65** lists the shapefile layer name and the geography each layer represents. **Table 66** through **Table 99** list the data table for each of the layers listed in **5**, with the attribute fields, their length, type, and description.

**Table 65: Shapefile Layer Names/Tables**

| SHAPEFILE LAYER   | GEOGRAPHIC LEVEL | <LAYER> NAME |
|---|------------------|--------------|
| American Indian Areas (AIA) – Legal                         | County/State     | Aial         |
| American Indian / Alaska Native Areas (AIANA) - Statistical | County/State     | Aias         |
| American Indian Tribal Subdivisions (AITS) - Legal          | County/State     | Aitsl        |
| American Indian Tribal Subdivisions (AITS) - Statistical    | County/State     | Aitss        |
| Alaska Native Regional Corporations (ANRC)                  | County/State     | Anrc         |
| Area Landmark   | County only      | Arealm       |
| Block Area Grouping   | County/State     | Bag          |
| Census Block Groups   | County only      | Bg           |
| Block Size Indicator  | County only      | Block        |
| Metropolitan/ Micropolitan Statistical Area                 | County/State     | Cbsa         |
| County Subdivisions – Statistical                           | County/State     | Ccd          |
| Congressional Districts (CD)                                | County/State     | Cd           |
| Census Designated Places (CDP)                              | County/State     | Cdp          |
| Consolidated Cities   | County only      | Concity      |
| Counties and Equivalent Areas                               | County/State     | County       |
| Census Tracts   | County only      | Curtracts    |
| Edges (All Lines)   | County only      | Edges        |
| School Districts (Elementary)                               | County/State     | Elsd         |
| County Subdivisions – Legal                                 | County/State     | Mcd          |
| New England City and Town Area                              | County/State     | Necta        |
| Offsets   | County only      | Offset       |
| Incorporated Places   | County/State     | Place        |
| Point Landmarks   | County only      | Pointlm      |

| SHAPEFILE LAYER  | GEOGRAPHIC LEVEL | <LAYER> NAME |
|--|------------------|--------------|
| Public Use Microdata Areas – Census 2010               | County/State     | Puma2010     |
| School Districts (Secondary)                           | County/State     | Scsd         |
| State Legislative Districts (Lower/House)              | County/State     | Sldl         |
| State Legislative Districts (Upper/Senate)             | County/State     | Sldu         |
| States and Equivalent Areas                            | State only       | State        |
| Subbarrios   | County only      | Submcd       |
| Census Blocks – Current                                | County only      | Tabblock     |
| Census Blocks – Census 2010                            | County only      | Tabblock2010 |
| Traffic Analysis Districts – Census 2010               | County only      | Tad2010      |
| Traffic Analysis Zone                                  | County only      | Taz2010      |
| Tribal Block Group                                     | County/State     | Tbg          |
| Census Tracts – Census 2010                            | County/State     | Tracts2010   |
| Urban Area/ Urban Cluster – Census 2010                | County/State     | Uac          |
| Urban Growth Areas (UGA)                               | County only      | Uga          |
| School Districts (Unified)                             | County/State     | Unsd         |
| Voting District  | County only      | VTD          |
| Hydrography – Area                                     | County only      | Water        |
| Address Ranges (Relationship Table)                    | County           | Addr         |
| Linear Feature Names (Relationship Table)              | County           | Allnames     |
| Topological Faces - Area Landmark Relationship         | County           | Areafaces    |
| Topological Faces (Listing of faces with all geocodes) | County           | Faces        |
| Topological Faces - Area Hydrography Relationship      | County           | Hydrofaces   |

**Table 66: American Indian Areas - Legal**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION   |
|-----------------|--------|--------|---|
| STATEFP         | 2      | String | FIPS State Code   |
| COUNTYFP*       | 3      | String | FIPS County Code  |
| AIANNHCE        | 4      | String | Census AIANNH Code  |
| COMPTYP         | 1      | String | Indicates if reservation (or equivalent) or off-reservation trust land is present, or both                    |
| AIANNHFSR       | 1      | String | Flag indicating level of recognition of an American Indian, Alaska Native, or Native Hawaiian tribe or group. |

| ATTRIBUTE FIELD | LENGTH | TYPE                       | DESCRIPTION                              |
|-----------------|--------|----------------------------|--|
| NAMELSAD        | 100    | String                     | Name with translated LSAD                |
| AIANNHNS        | 8      | String                     | ANSI numeric identifier for AIANNH Areas |
| LSAD            | 2      | String                     | Legal/Statistical Area Description       |
| FUNCSTAT        | 1      | String                     | Functional Status                        |
| CLASSFP         | 2      | String                     | FIPS55 class code describing entity      |
| PARTFLG*        | 1      | String                     | Part Flag Indicator                      |
| CHNG_TYPE       | 2      | String                     | Type of area update                      |
| EFF_DATE        | 8      | String                     | Effective Date or Vintage                |
| DOCU            | 120    | String                     | Supporting documentation                 |
| FORM_ID         | 4      | String                     | Record ID for any boundary update        |
| AREA            | 10     | Numeric (3 decimal places) | Acreage of area update                   |
| RELATE          | 120    | String                     | Relationship description                 |
| JUSTIFY         | 150    | Char                       | Justification                            |
| NAME            | 100    | String                     | Name                                     |
| VINTAGE         | 2      | String                     | Vintage updated with returned data       |

**Table 67: American Indian /Alaska Native Areas - Statistical**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION   |
|-----------------|--------|--------|---|
| STATEFP         | 2      | String | FIPS State Code   |
| COUNTYFP*       | 3      | String | FIPS County Code  |
| AIANNHCE        | 4      | String | Census AIANNH Code  |
| COMPTYP         | 1      | String | Indicates if reservation (or equivalent) or off-reservation trust land is present, or both                    |
| AIANNHFSR       | 1      | String | Flag indicating level of recognition of an American Indian, Alaska Native, or Native Hawaiian tribe or group. |
| NAMELSAD        | 100    | String | Name with translated LSAD   |
| AIANNHNS        | 8      | String | ANSI numeric identifier for AIANNH Areas  |
| LSAD            | 2      | String | Legal/Statistical Area Description  |
| FUNCSTAT        | 1      | String | Functional Status   |
| CLASSFP         | 2      | String | FIPS55 class code describing entity   |
| PARTFLG*        | 1      | String | Part Flag Indicator   |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| CHNG_TYPE       | 2      | String | Type of area update                |
| EFF_DATE        | 8      | String | Effective Date or Vintage          |
| RELATE          | 120    | String | Relationship description           |
| JUSTIFY         | 150    | Char   | Justification                      |
| VINTAGE         | 2      | String | Vintage updated with returned data |
| NAME            | 100    | String | Name                               |

**Table 68: American Indian Tribal Subdivisions - Legal**

| ATTRIBUTE FIELD | LENGTH | TYPE                       | DESCRIPTION   |
|-----------------|--------|----------------------------|---|
| STATEFP         | 2      | String                     | FIPS State Code   |
| COUNTYFP*       | 3      | String                     | FIPS County Code  |
| AIANNHCE        | 4      | String                     | Census AIANNH Code  |
| TRIBSUBCE       | 1      | String                     | Census Tribal subdivision   |
| NAMELSAD        | 100    | String                     | Name with translated LSAD   |
| AIANNHNS        | 8      | String                     | ANSI numeric identifier for AIANNH Areas  |
| LSAD            | 2      | String                     | Legal/Statistical Area Description  |
| FUNCSTAT        | 1      | String                     | Functional Status   |
| CLASSFP         | 2      | String                     | FIPS55 class code describing entity   |
| PARTFLG*        | 1      | String                     | Part Flag Indicator   |
| CHNG_TYPE       | 2      | String                     | Type of area update   |
| EFF_DATE        | 8      | String                     | Effective Date or Vintage   |
| DOCU            | 120    | String                     | Supporting documentation  |
| FORM_ID         | 4      | String                     | Record ID for any boundary update   |
| AREA            | 10     | Numeric (3 decimal places) | Acreage of area update  |
| RELATE          | 120    | String                     | Relationship description  |
| JUSTIFY         | 150    | Char                       | Justification   |
| NAME            | 100    | String                     | Name  |
| VINTAGE         | 2      | String                     | Vintage updated with returned data  |
| AIANNHFSR       | 1      | String                     | Flag indicating level of recognition of an American Indian, Alaska Native, or Native Hawaiian tribe or group. |

**Table 69: American Indian Tribal Subdivisions - Statistical**

| ATTRIBUTE FIELD | LENGTH | TYPE                          | DESCRIPTION   |
|-----------------|--------|-------------------------------|---|
| STATEFP         | 2      | String                        | FIPS State Code   |
| COUNTYFP*       | 3      | String                        | FIPS County Code  |
| AIANNHCE        | 4      | String                        | Census AIANNH Code  |
| TRIBSUBCE       | 1      | String                        | Census Tribal subdivision   |
| NAMELSAD        | 100    | String                        | Name with translated LSAD   |
| AIANNHNS        | 8      | String                        | ANSI numeric identifier for AIANNH Areas  |
| LSAD            | 2      | String                        | Legal/Statistical Area Description  |
| FUNCSTAT        | 1      | String                        | Functional Status   |
| CLASSFP         | 2      | String                        | FIPS55 class code describing entity   |
| PARTFLG*        | 1      | String                        | Part Flag Indicator   |
| CHNG_TYPE       | 2      | String                        | Type of area update   |
| EFF_DATE        | 8      | String                        | Effective Date or Vintage   |
| DOCU            | 120    | String                        | Supporting documentation  |
| FORM_ID         | 4      | String                        | Record ID for any boundary update   |
| AREA            | 10     | Numeric<br>(3 decimal places) | Acreage of area update  |
| RELATE          | 120    | String                        | Relationship description  |
| JUSTIFY         | 150    | Char                          | Justification   |
| NAME            | 100    | String                        | Name  |
| VINTAGE         | 2      | String                        | Vintage updated with returned data  |
| AIANNHFSR       | 1      | String                        | Flag indicating level of recognition of an American Indian, Alaska Native, or Native Hawaiian tribe or group. |

**Table 70: Alaska Native Regional Corporations**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                  |
|-----------------|--------|--------|------------------------------|
| STATEFP         | 2      | STRING | FIPS STATE CODE              |
| COUNTYFP*       | 3      | STRING | FIPS COUNTY CODE             |
| ANRCFP          | 5      | STRING | FIPS ANRC CODE (STATE BASED) |
| ANRCCE          | 2      | STRING | CURRENT CENSUS ANRC CODE     |
| NAMELSAD        | 100    | STRING | NAME WITH TRANSLATED LSAD    |

| ATTRIBUTE FIELD | LENGTH | TYPE                                | DESCRIPTION   |
|-----------------|--------|-------------------------------------|---|
| LSAD            | 2      | STRING                              | LEGAL/STATISTICAL AREA DESCRIPTION  |
| AIANNHNS        | 8      | STRING                              | ANSI NUMERIC IDENTIFIER FOR AIANNH AREAS  |
| FUNCSTAT        | 1      | STRING                              | FUNCTIONAL STATUS   |
| CLASSFP         | 2      | STRING                              | FIPS55 CLASS CODE DESCRIBING ENTITY   |
| PARTFLG*        | 1      | STRING                              | PART FLAG INDICATOR   |
| CHNG_TYPE       | 2      | STRING                              | TYPE OF AREA UPDATE   |
| EFF_DATE        | 8      | STRING                              | EFFECTIVE DATE OR VINTAGE   |
| DOCU            | 120    | STRING                              | SUPPORTING DOCUMENTATION  |
| FORM_ID         | 4      | STRING                              | RECORD ID FOR ANY BOUNDARY UPDATE   |
| AREA            | 10     | NUMERIC<br>(3<br>DECIMAL<br>PLACES) | ACREAGE OF AREA UPDATE  |
| RELATE          | 120    | STRING                              | RELATIONSHIP DESCRIPTION  |
| JUSTIFY         | 150    | CHAR                                | JUSTIFICATION   |
| NAME            | 100    | STRING                              | NAME  |
| VINTAGE         | 2      | STRING                              | VINTAGE UPDATED WITH RETURNED DATA  |
| AIANHFSR        | 1      | STRING                              | FLAG INDICATING LEVEL OF RECOGNITION OF AN AMERICAN INDIAN, ALASKA NATIVE, OR NATIVE HAWAIIAN TRIBE OR GROUP. |

**Table 71: Block Size Indicator**

| ATTRIBUTE FIELD | LENGTH | TYPE                       | DESCRIPTION   |
|-----------------|--------|----------------------------|---|
| STATEFP         | 2      | String                     | FIPS State Code   |
| COUNTYFP        | 3      | String                     | FIPS County Code  |
| TRACTCE         | 6      | String                     | Census Tract Code   |
| BLOCKCE         | 4      | String                     | Tabulation Block Number   |
| BLOCKID         | 19     | String                     | FIPS State Code, FIPS County Code, Census Tract Code, Tabulation Block Number, Census Block Suffix 1, Census Block Suffix 2 |
| AREALAND        | 14     | Numeric (3 decimal places) | Current Area Land in Square Meters  |

| ATTRIBUTE FIELD | LENGTH | TYPE                       | DESCRIPTION  |
|-----------------|--------|----------------------------|--|
| AREAWATER       | 10     | Numeric (3 decimal places) | Current Area Water in Square Meters                                    |
| LWBLKTYP        | 1      | String                     | Land/Water Block Type: B = Both Land and Water; L = Land; W = Water    |
| PERIMETER       | 9      | String                     | Perimeter of Block in Square Meters                                    |
| SHAPEIDX        | 9      | String                     | $(\sqrt{4\pi A/P^2})$ , where A=Area of block & P = Perimeter of block |
| BLKSZIND        | 1      | String                     | Block Size Indicator   |

**Table 72: Congressional Districts**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| STATEFP         | 2      | String | FIPS State Code                    |
| COUNTYFP*       | 3      | String | FIPS County Code                   |
| CDFP            | 2      | String | Congressional District Code        |
| CDTYP           | 1      | String | Congressional District Type        |
| NAMELSAD        | 100    | String | Name with translated LSAD          |
| LSAD            | 2      | String | Legal/Statistical Area Description |
| CHNG_TYPE       | 2      | String | Type of Area Update                |
| EFF_DATE        | 8      | String | Effective date or vintage          |
| NEW_CODE        | 2      | String | New Congressional District Code    |
| RELTYPE1        | 2      | String | Relationship Type 1                |
| RELTYPE2        | 2      | String | Relationship Type 2                |
| RELTYPE3        | 2      | String | Relationship Type 3                |
| RELTYPE4        | 2      | String | Relationship Type 4                |
| RELTYPE5        | 2      | String | Relationship Type 5                |
| REL_ENT1        | 8      | String | Relationship Entity 1              |
| REL_ENT2        | 8      | String | Relationship Entity 2              |
| REL_ENT3        | 8      | String | Relationship Entity 3              |
| REL_ENT4        | 8      | String | Relationship Entity 4              |
| REL_ENT5        | 8      | String | Relationship Entity 5              |
| RELATE          | 120    | String | Relationship Description           |
| JUSTIFY         | 150    | Char   | Justification                      |



| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                         |
|-----------------|--------|--------|-------------------------------------|
| CDSSESN         | 3      | String | Congressional District Session Code |
| NAME            | 100    | String | Name                                |
| VINTAGE         | 2      | String | Vintage updated with returned data  |
| FUNCSTAT        | 1      | String | Functional Status                   |

**Table 73: Hawaiian Homelands**

| ATTRIBUTE FIELD | LENGTH | TYPE                       | DESCRIPTION   |
|-----------------|--------|----------------------------|---|
| STATEFP         | 2      | String                     | FIPS State Code   |
| COUNTYFP*       | 3      | String                     | FIPS County Code  |
| AIANNHCE        | 4      | String                     | Census AIANNH Code  |
| COMPTYP         | 1      | String                     | Indicates if reservation (or equivalent) or off-reservation trust land is present, or both                    |
| NAMELSAD        | 100    | String                     | Name with translated LSAD   |
| AIANNHNS        | 8      | String                     | ANSI numeric identifier for AIANNH Areas  |
| LSAD            | 2      | String                     | Legal/Statistical Area Description  |
| FUNCSTAT        | 1      | String                     | Functional Status   |
| CLASSFP         | 2      | String                     | FIPS55 class code describing entity   |
| PARTFLG*        | 1      | String                     | Part Flag Indicator   |
| CHNG_TYPE       | 2      | String                     | Type of area update   |
| EFF_DATE        | 8      | String                     | Effective Date or Vintage   |
| DOCU            | 120    | String                     | Supporting documentation  |
| FORM_ID         | 4      | String                     | Record ID for any boundary update   |
| AREA            | 10     | Numeric (3 decimal places) | Acreage of area update  |
| RELATE          | 120    | String                     | Relationship description  |
| JUSTIFY         | 150    | Char                       | Justification   |
| VINTAGE         | 2      | String                     | Vintage updated with returned data  |
| AIANNHFSR       | 1      | String                     | Flag indicating level of recognition of an American Indian, Alaska Native, or Native Hawaiian tribe or group. |
| NAME            | 100    | String                     | Name  |

**Table 74: School Districts**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION  |
|-----------------|--------|---------|--|
| STATEFP         | 2      | String  | FIPS State Code  |
| COUNTYFP*       | 3      | String  | FIPS County Code   |
| SDLEA           | 5      | String  | Current Local Education Agency Code                                      |
| NAME            | 100    | String  | Name of School District  |
| LSAD            | 2      | Integer | Legal/Statistical Area Description                                       |
| HIGRADE         | 2      | String  | Highest grade for which the district is financially responsible          |
| LOGRADE         | 2      | String  | Lowest grade for which the district is financially responsible           |
| PARTFLG*        | 1      | String  | Part Flag Indicator  |
| POLYID          | 4      | String  | Record ID for each update polygon for linking back to the submission log |
| CHNG_TYPE       | 1      | String  | Type of area update  |
| EFF_DATE        | 8      | String  | Effective Date or Vintage  |
| RELATE          | 120    | String  | Relationship description   |
| JUSTIFY         | 150    | Char    | Justification  |
| FUNCSTAT        | 3      | String  | Functional Status  |
| VINTAGE         | 2      | String  | Vintage updated with returned data                                       |

**Table 75: State Legislative Districts (Upper/Senate)**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| STATEFP         | 2      | String | FIPS State Code                    |
| COUNTYFP*       | 3      | String | FIPS County Code                   |
| SLDUST          | 3      | String | SLD Upper Chamber Code             |
| NAMELSAD        | 100    | String | Name with translated LSAD          |
| LSAD            | 2      | String | Legal/Statistical Area Description |
| PARTFLG*        | 1      | String | Part Flag Indicator                |
| CHNG_TYPE       | 2      | String | Type of area update                |
| EFF_DATE        | 8      | String | Effective Date or Vintage          |
| NEW_NAME        | 100    | String | New SLDU Name                      |
| NEW_CODE        | 3      | String | New SLDU Code                      |
| RELTYPE1        | 2      | String | Relationship Type 1                |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| RELTYPE2        | 2      | String | Relationship Type 2                |
| RELTYPE3        | 2      | String | Relationship Type 3                |
| RELTYPE4        | 2      | String | Relationship Type 4                |
| RELTYPE5        | 2      | String | Relationship Type 5                |
| REL_ENT1        | 8      | String | Relationship Entity 1              |
| REL_ENT2        | 8      | String | Relationship Entity 2              |
| REL_ENT3        | 8      | String | Relationship Entity 3              |
| REL_ENT4        | 8      | String | Relationship Entity 4              |
| REL_ENT5        | 8      | String | Relationship Entity 5              |
| RELATE          | 120    | String | Relationship Description           |
| JUSTIFY         | 150    | Char   | Justification                      |
| LSY             | 4      | String | Legislative Session Year           |
| NAME            | 100    | String | Name                               |
| VINTAGE         | 2      | String | Vintage updated with returned data |
| FUNCSTAT        | 1      | String | Functional Status                  |

**Table 76: State Legislative Districts (Lower/House)**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| STATEFP         | 2      | String | FIPS State Code                    |
| COUNTYFP*       | 3      | String | FIPS County Code                   |
| SLDLST          | 3      | String | SLD Lower Chamber Code             |
| NAMELSAD        | 100    | String | Name with translated LSAD          |
| LSAD            | 2      | String | Legal/Statistical Area Description |
| PARTFLG*        | 1      | String | Part Flag Indicator                |
| CHNG_TYPE       | 2      | String | Type of area update                |
| EFF_DATE        | 8      | String | Effective Date or Vintage          |
| NEW_NAME        | 100    | String | New SLDL Name                      |
| NEW_CODE        | 3      | String | New SLDL Code                      |
| RELTYPE1        | 2      | String | Relationship Type 1                |
| RELTYPE2        | 2      | String | Relationship Type 2                |
| RELTYPE3        | 2      | String | Relationship Type 3                |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| RELTYPE4        | 2      | String | Relationship Type 4                |
| RELTYPE5        | 2      | String | Relationship Type 5                |
| REL_ENT1        | 8      | String | Relationship Entity 1              |
| REL_ENT2        | 8      | String | Relationship Entity 2              |
| REL_ENT3        | 8      | String | Relationship Entity 3              |
| REL_ENT4        | 8      | String | Relationship Entity 4              |
| REL_ENT5        | 8      | String | Relationship Entity 5              |
| RELATE          | 120    | String | Relationship Description           |
| JUSTIFY         | 150    | Char   | Justification                      |
| LSY             | 4      | String | Legislative Session Year           |
| NAME            | 100    | String | Name                               |
| VINTAGE         | 2      | String | Vintage updated with returned data |
| FUNCSTAT        | 1      | String | Functional Status                  |

**Table 77: Urban Growth Areas**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| STATEFP         | 2      | String | FIPS State Code                    |
| COUNTYFP        | 3      | String | FIPS County Code                   |
| UGACE           | 5      | String | Urban Growth Area Code             |
| UGATYP          | 1      | String | Urban Growth Area Type             |
| NAMELSAD        | 100    | String | Name with translated LSAD          |
| LSAD            | 2      | String | Legal/Statistical Area Description |
| PARTFLG         | 1      | String | Part Flag Indicator                |
| CHNG_TYPE       | 1      | String | Type of Area Update                |
| EFF_DATE        | 8      | String | Effective Date or Vintage          |
| AREA            | 10     | Double | Acreage of Update                  |
| RELATE          | 120    | String | Relationship Description           |
| JUSTIFY         | 150    | Char   | Justification                      |
| VINTAGE         | 2      | String | Vintage updated with returned data |
| NAME            | 100    | String | Name                               |

**Table 78: Census Block Groups**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION  |
|-----------------|--------|--------|--|
| STATEFP         | 2      | String | FIPS State Code  |
| COUNTYFP        | 3      | String | FIPS County Code   |
| TRACTCE         | 6      | String | Census Tract Code  |
| BLKGRPCE        | 1      | String | Block Group Code   |
| BLKGRPID        | 12     | String | FIPS State Code, FIPS County Code, Census Tract Code, Block Group Code |
| CHNG_TYPE       | 2      | String | Type of Area Update  |
| EFF_DATE        | 8      | String | Effective Date or Vintage  |
| BGTYP           | 1      | String | Block Group Characteristic Flag  |
| RELATE          | 120    | String | Relationship Description   |
| JUSTIFY         | 150    | Char   | Justification  |
| VINTAGE         | 2      | String | Vintage updated with returned data                                     |

**Table 79: Census Blocks - Current**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION   |
|-----------------|--------|--------|---|
| STATEFP         | 2      | String | FIPS State Code   |
| COUNTYFP        | 3      | String | FIPS County Code  |
| STATEFP10       | 2      | String | FIPS 2010 State Code  |
| COUNTYFP10      | 3      | String | FIPS 2010 County Code   |
| TRACTCE10       | 6      | String | Census Tract Code   |
| BLOCKCE         | 4      | String | Tabulation Block Number   |
| SUFFIX1CE       | 2      | String | Census Block Suffix 1   |
| SUFFIX2CE       | 2      | String | Census Block Suffix 2   |
| BLOCKID         | 19     | String | FIPS State Code, FIPS County Code, Census Tract Code, Tabulation Block Number, Census Block Suffix 1, Census Block Suffix 2 |

**Table 80: Census Blocks - Census 2010**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION           |
|-----------------|--------|--------|-----------------------|
| STATEFP10       | 2      | String | FIPS 2010 State Code  |
| COUNTYFP10      | 3      | String | FIPS 2010 County Code |

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION   |
|-----------------|--------|---------|---|
| TRACTCE10       | 6      | String  | Census Tract Code   |
| BLOCKCE         | 4      | String  | Tabulation Block Number   |
| BLOCKID10       | 15     | String  | FIPS State Code, FIPS County Code, Census Tract Code, Tabulation Block Number |
| PARTFLG         | 1      | String  | Part Flag Indicator   |
| HOUSING10       | 9      | Integer | 2010 Housing  |
| POP10           | 9      | Integer | Census 2010 population count  |

**Table 81: Census Tracts**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION  |
|-----------------|--------|--------|--|
| STATEFP         | 2      | String | FIPS State Code                                      |
| COUNTYFP        | 3      | String | FIPS County Code                                     |
| TRACTCE         | 6      | String | Census Tract Code                                    |
| NAME            | 100    | String | Name   |
| TRACTID         | 11     | String | FIPS State Code, FIPS County Code, Census Tract Code |
| CHNG_TYPE       | 2      | String | Type of area update                                  |
| EFF_DATE        | 8      | String | Effective Date or Vintage                            |
| TRACTTYP        | 1      | String | Tract Characteristic Flag                            |
| RELATE          | 120    | String | Relationship Description                             |
| JUSTIFY         | 150    | Char   | Justification  |
| TRACTLABEL      | 7      | String | Tract number used for LUCA geocoding                 |
| VINTAGE         | 2      | String | Vintage updated with returned data                   |

**Table 82: Census Designated Places**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                     |
|-----------------|--------|--------|---------------------------------|
| STATEFP         | 2      | String | FIPS State Code                 |
| COUNTYFP*       | 3      | String | FIPS County Code                |
| PLACEFP         | 5      | String | FIPS 55 Place Code              |
| PLACENS         | 5      | String | ANSI feature code for the place |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                             |
|-----------------|--------|--------|---|
| NAMELSAD        | 100    | String | Name with translated LSAD               |
| LSAD            | 2      | String | Legal/Statistical Area Description      |
| FUNCSTAT        | 1      | String | Functional Status                       |
| CLASSFP         | 2      | String | FIPS 55 Class Code describing an entity |
| PARTFLG         | 1      | String | Part Flag Indicator                     |
| CHNG_TYPE       | 1      | String | Type of Area Update                     |
| EFF_DATE        | 8      | String | Effective Date or Vintage               |
| RELATE          | 120    | String | Relationship Description                |
| JUSTIFY         | 150    | Char   | Justification                           |
| NAME            | 100    | String | Name                                    |
| VINTAGE         | 2      | String | Vintage updated with returned data      |

**Table 83: Consolidated City**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                             |
|-----------------|--------|--------|---|
| STATEFP         | 2      | String | FIPS State Code                         |
| COUNTYFP        | 3      | String | FIPS County Code                        |
| CONCITYFP       | 5      | String | FIPS 55 Place Code                      |
| CONCITYCE       | 4      | String | Census Consolidated City 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 an entity |
| CHNG_TYPE       | 1      | String | Type of Area Update                     |
| EFF_DATE        | 8      | String | Effective Date or Vintage               |
| DOCU            | 120    | String | Supporting Documentation                |
| FORM_ID         | 4      | String | (GUPS and Web BAS only)                 |
| AREA            | 10     | Double | Acreage of Update                       |
| RELATE          | 120    | String | Relationship Description                |
| JUSTIFY         | 150    | Char   | Justification                           |

**Table 84: County and Equivalent Areas**

| 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       | 1      | String | Type of area update                                    |
| EFF_DATE        | 8      | String | Effective Date or Vintage                              |
| DOCU            | 120    | String | Supporting Documentation                               |
| FORM_ID         | 4      | String | (GUPS and Web BAS only)                                |
| AREA            | 10     | Double | Acreage of Area Update                                 |
| RELATE          | 120    | String | Relationship description                               |
| JUSTIFY         | 150    | Char   | Justification  |
| NAME            | 100    | String | Name   |
| VINTAGE         | 2      | String | Vintage updated with returned data                     |

**Table 85: County Subdivisions - Legal (MCD)**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                                  |
|-----------------|--------|--------|--|
| STATEFP         | 2      | String | FIPS State Code                              |
| COUNTYFP        | 3      | String | FIPS County Code                             |
| COUSUBFP        | 5      | String | FIPS 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       | 1      | String | Type of Area Update                          |
| EFF_DATE        | 8      | String | Effective Date or Vintage                    |



| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| DOCU            | 120    | String | Supporting Documentation           |
| FORM_ID         | 4      | String | (GUPS and Web BAS only)            |
| AREA            | 10     | Double | Acreage of Update                  |
| RELATE          | 120    | String | Relationship Description           |
| JUSTIFY         | 150    | Char   | Justification                      |
| NAME            | 100    | String | Name                               |
| VINTAGE         | 2      | String | Vintage updated with returned data |

**Table 86: County Subdivisions - Statistical (CCD)**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                                  |
|-----------------|--------|--------|--|
| STATEFP         | 2      | String | FIPS State Code                              |
| COUNTYFP        | 3      | String | FIPS County Code                             |
| COUSUBFP        | 5      | String | FIPS 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       | 1      | String | Type of Area Update                          |
| RELATE          | 120    | String | Relationship Description                     |
| JUSTIFY         | 150    | Char   | Justification                                |
| NAME            | 100    | String | Name   |
| VINTAGE         | 2      | String | Vintage updated with returned data           |

**Table 87: Incorporated 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 |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                             |
|-----------------|--------|--------|---|
| LSAD            | 2      | String | Legal/Statistical Area Description      |
| FUNCSTAT        | 1      | String | Functional Status                       |
| CLASSFP         | 2      | String | FIPS 55 Class Code describing an entity |
| PARTFLG         | 1      | String | Part Flag Indicator                     |
| CHNG_TYPE       | 1      | String | Type of Area Update                     |
| EFF_DATE        | 8      | String | Effective Date or Vintage               |
| DOCU            | 120    | String | Supporting Documentation                |
| FORM_ID         | 4      | String | (GUPS and Web BAS only)                 |
| AREA            | 10     | Double | Acreage of Update                       |
| RELATE          | 120    | String | Relationship Description                |
| JUSTIFY         | 150    | Char   | Justification                           |
| NAME            | 100    | String | Name                                    |
| VINTAGE         | 2      | String | Vintage updated with returned data      |

**Table 88: States and Equivalent Areas**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION                        |
|-----------------|--------|---------|------------------------------------|
| STATEFP         | 2      | String  | FIPS State Code                    |
| STATEUSPS       | 3      | String  | USPS State Abbreviation            |
| NAME            | 10     | Integer | Name                               |
| LSAD            | 5      | String  | Legal/Statistical Area Description |
| STATENS         | 120    | String  | ANSI feature code for the state    |

**Table 89: Subbarrios**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| STATEFP         | 2      | String | FIPS State Code                    |
| COUNTYFP        | 3      | String | FIPS County Code                   |
| COUSUBFP        | 5      | String | FIPS County Subdivision Code       |
| SUBMCDFP        | 5      | String | FIPS Sub-minor Civil Division Code |
| NAMELSAD        | 100    | String | Name with translated LSAD          |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION  |
|-----------------|--------|--------|--|
| SUBMCDNS        | 8      | String | ANSI feature code for the sub-minor civil division |
| LSAD            | 2      | String | Legal/Statistical Area Description                 |
| CHNG_TYPE       | 1      | String | Type of Area Update                                |
| EFF_DATE        | 8      | String | Effective Date or Vintage                          |
| AREA            | 10     | Double | Acreage of Update                                  |
| RELATE          | 120    | String | Relationship Description                           |
| JUSTIFY         | 150    | Char   | Justification                                      |
| FORM_ID         | 4      | String | (GUPS and Web BAS only)                            |
| NAME            | 100    | String | Name   |
| VINTAGE         | 2      | String | Vintage updated with returned data                 |
| FUNCSTAT        | 1      | String | Functional Status                                  |

**Table 90: Edges (All Lines)**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION  |
|-----------------|--------|---------|--|
| STATEFP         | 2      | String  | State FIPS Code  |
| COUNTYFP        | 3      | String  | County FIPS Code   |
| TLID            | 10     | Integer | Permanent Edge ID  |
| TFIDL           | 10     | Integer | Permanent Face ID (Left)   |
| TFIDR           | 10     | Integer | 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        | 120    | String  | Prefix qualifier code, prefix direction code, prefix type code, base name, suffix type code, suffix qualifier code |
| SMID            | 22     | String  | Spatial Tmeta ID   |
| VTDFLG          | 1      | String  | 2010 block boundary suggestion   |
| CBBFLG          | 1      | String  | Planned 2020 block boundary  |
| VTD_2020        | 1      | String  | VTD Participant suggested 2020 Census block boundary   |
| CHNG_TYPE       | 2      | String  | Type of linear update  |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION        |
|-----------------|--------|--------|--------------------|
| JUSTIFY         | 150    | Char   | Justification      |
| 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     |

**Table 91: Area Landmark**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION   |
|-----------------|--------|---------|---|
| STATEFP         | 2      | String  | FIPS State Code   |
| COUNTYFP        | 3      | String  | FIPS County Code  |
| MTFCC           | 5      | String  | MAF/TIGER Feature Class Code  |
| FULLNAME        | 120    | String  | Prefix direction code, prefix type code, base name, suffix type code, suffix direction code |
| AREAID          | 10     | Integer | Landmark identification number  |
| ANSICODE        | 8      | String  | ANSI code for area landmarks  |
| CHNG_TYPE       | 1      | String  | Type of Area Landmark update  |
| EFF_DATE        | 8      | String  | Effective Date or Vintage   |
| RELATE          | 120    | String  | Relationship description  |
| JUSTIFY         | 150    | Char    | Justification   |
| BAG             | 3      | String  | Block Area Grouping   |

**Table 92: Hydrography Area**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION  |
|-----------------|--------|--------|--|
| STATEFP         | 2      | String | FIPS State Code  |
| COUNTYFP        | 3      | String | FIPS County Code   |
| ANSICODE        | 8      | String | ANSI code for hydrography area   |
| MTFCC           | 5      | String | MAF/TIGER Feature Class Code   |
| FULLNAME        | 120    | String | Prefix direction code, prefix type code, base name, suffix type, suffix type code, suffix direction code |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                       |
|-----------------|--------|--------|-----------------------------------|
| CHNG_TYPE       | 1      | String | Type of Area Update               |
| HYDROID         | 10     | String | Hydrography Identification Number |
| RELATE          | 120    | String | Relationship description          |
| JUSTIFY         | 150    | Char   | Justification                     |

**Table 93: Point Landmarks**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION                                   |
|-----------------|--------|---------|---|
| STATEFP         | 2      | String  | FIPS State Code                               |
| COUNTYFP        | 3      | String  | FIPS County Code                              |
| POINTID         | 10     | Integer | Point Landmark Identification Number          |
| ANSICODE        | 8      | Char    | Official Code for Federal Agency use          |
| MTFCC           | 5      | String  | MAF/TIGER Feature Class Code                  |
| FULLNAME        | 120    | String  | Prefix type code, base name, suffix type code |
| CHNG_TYPE       | 1      | String  | Type of Area Update                           |
| JUSTIFY         | 150    | Char    | Justification                                 |

**Table 94: Topological Faces - Geographic Entity Relationships**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION  |
|-----------------|--------|---------|--|
| TFID            | 20     | Integer | Permanent Face ID  |
| STATEFP         | 2      | String  | FIPS State Code  |
| COUNTYFP        | 3      | String  | FIPS County Code   |
| TRIBSUBCE       | 3      | String  | Census Tribal Subdivision  |
| TTRACTCE        | 6      | String  | Tribal Census Tract Code   |
| TBLKGRPCE       | 1      | String  | Tribal Census Block Group Code   |
| AIANNHCE        | 4      | String  | Census AIANNH Code   |
| COMPTYP         | 1      | String  | Indicates if reservation (or equivalent) or off-reservation trust land is present, or both |
| ANRCFP          | 5      | String  | FIPS ANRC Code   |
| SLDUST          | 3      | String  | SLD Upper Chamber Code   |
| SLDLST          | 3      | String  | SLD Lower Chamber Code   |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                                    |
|-----------------|--------|--------|--|
| ELSD            | 5      | String | Current ELSD Local Education Agency (LEA) Code |
| SCSD            | 5      | String | Current SCSD Local Education Agency (LEA) Code |
| UNSD            | 5      | String | Current UNSD Local Education Agency (LEA) Code |
| CDFP            | 2      | String | Congressional District Code                    |
| TRACTCE         | 6      | String | Census Tract Code                              |
| UACE            | 5      | String | Census Urban Area Code                         |
| CBSAFP          | 5      | String | County-Based Metropolitan-Micropolitan Code    |
| NECTAFP         | 5      | String | New England City and Town Area Code            |
| BLKGRPCE        | 1      | String | Census Block Group Code                        |
| BLOCKCE         | 4      | String | Tabulation Block Number                        |
| SUFFIX1CE       | 2      | String | Census Block Suffix 1                          |
| SUFFIX2CE       | 2      | String | Census Block Suffix 2                          |
| TAZCE           | 6      | String | Traffic Analysis Zone Code                     |
| TADCE           | 8      | String | Traffic Analysis District Code                 |
| MPOCE           | 8      | String | Metropolitan Planning Organization Code        |
| PUMACE10        | 5      | String | Public Use Microdata Area Code                 |
| SUBMCDFP        | 5      | String | FIPS 55 Sub-minor Civil Division Code          |
| UGACE           | 5      | String | Urban Growth Area Code                         |
| STATEFP10       | 2      | String | FIPS 2010 State Code                           |
| COUNTYFP10      | 3      | String | FIPS 2010 County Code                          |
| TRACTCE10       | 6      | String | Census 2010 Tract Code                         |
| PLACEFP         | 5      | String | FIPS 55 Place Code                             |
| COUSUBFP        | 5      | String | FIPS 55 County Subdivision Code                |
| CONCITYFP       | 5      | String | FIPS 55 Place Code                             |
| CDSSESSN        | 3      | String | Congressional District Session                 |
| VTDST           | 6      | String | 2010 Voting District Code                      |
| LWFLG           | 1      | String | Land/Water Flag                                |

**Table 95: Topological Faces - Area Landmark Relationships**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION       |
|-----------------|--------|---------|-------------------|
| TFID            | 20     | Integer | Permanent Face ID |
| AREAID          | 22     | Integer | Object ID         |

**Table 96: Topological Faces - Hydrography Area Relationships**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION       |
|-----------------|--------|---------|-------------------|
| TFID            | 20     | Integer | Permanent Face ID |
| HYDROID         | 22     | Integer | Object ID         |

**Table 97: Address Ranges**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION            |
|-----------------|--------|---------|------------------------|
| 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 98: Linear Feature Names**

| ATTRIBUTE FIELD | LENGTH | TYPE    | DESCRIPTION                                     |
|-----------------|--------|---------|---|
| OID             | 22     | Integer | Object ID                                       |
| STATEFP         | 2      | String  | FIPS State Code                                 |
| COUNTYFP        | 3      | String  | FIPS County Code                                |
| NAME            | 100    | String  | Name  |
| PREDIR          | 2      | String  | Prefix Direction code component of feature name |
| PRETYP          | 3      | String  | Prefix Type code component of feature name      |

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                                     |
|-----------------|--------|--------|---|
| PREQUAL         | 2      | String | Prefix Qualifier code component of feature name |
| SUFDIR          | 2      | String | Suffix Direction code component of feature name |
| SUFTYP          | 3      | String | Suffix Type code component of feature name      |
| SUFQUAL         | 2      | String | Suffix Qualifier code component of feature name |
| MTFCC           | 5      | String | MAF/TIGER Feature Class Code                    |
| PAFLAG          | 1      | String | Primary/Alternate flag                          |

**Table 99: Voting Districts**

| ATTRIBUTE FIELD | LENGTH | TYPE   | DESCRIPTION                        |
|-----------------|--------|--------|------------------------------------|
| STATEFP         | 2      | String | FIPS State Code                    |
| COUNTYFP        | 3      | String | FIPS County Code                   |
| VTDST           | 6      | String | Voting District Code               |
| NAMELSAD        | 100    | String | Name with translated LSAD          |
| VTDI            | 1      | String | Voting District Indicator          |
| LSAD            | 2      | String | Legal/Statistical Area Description |
| CHNG_TYPE       | 2      | String | Type of Area Update                |
| ORIG_NAME       | 100    | String | Original VTD Name                  |
| ORIG_CODE       | 6      | String | Original VTD Code                  |
| RELATE          | 120    | String | Relationship                       |
| NAME            | 100    | String | Voting District Name               |
| VINTAGE         | 2      | String | Vintage updated with returned data |
| FUNCSTAT        | 1      | String | Functional Status                  |
| JUSTIFY         | 150    | String | Justification                      |
| MTFCC           | 5      | String | MTFCC Code                         |



## APPENDIX E Acronyms

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The table below lists the acronyms used throughout the Voting District Project GUPS User's Guide and the explanation of these abbreviations.

**Table 100: Acronyms**

| ACRONYM   | EXPLANATION   |
|-----------|---|
| BAS       | Boundary and Annexation Survey  |
| BAG       | Block Area Grouping   |
| BBSP      | Block Boundary Suggestion Project   |
| CBBFLG    | Census Block Boundary Flag  |
| CD        | Congressional District  |
| CRT       | Criteria Review Tool  |
| CRVRDO    | Census Redistricting & Voting Rights Data Office  |
| FIPS      | Federal Information Processing Standard   |
| GNIS      | Geographic Names Information System   |
| GUPS      | Geographic Update Partnership Software  |
| MAF       | Modify Area Feature   |
| MAF/TIGER | Master Address File/Topologically Integrated Geographic and Encoding Reference (System) |
| MCD       | Minor Civil Division  |
| MTFCC     | MAF TIGER Feature Classification Code   |
| OGC       | Open Geospatial Consortium  |
| QC        | Quality Control   |
| QGIS      | Q (formerly Quantum) Geographic Information System                                      |
| RDP       | Redistricting Data Program  |
| SLD       | State Legislative District  |
| SWIM      | Secure Web Incoming Module  |
| TEF       | Tabular Equivalency File  |
| URL       | Uniform Resource Locator  |
| VTD       | Voting District   |
| VTDP      | Voting District Project   |

## **APPENDIX F VTD Participation Support**

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Direct all questions, regarding the Voting District Project, both procedural and GUPS technical questions, to:

Census Redistricting & Voting Rights Data Office: (301) 763-4039;  
[rdo@census.gov](mailto:rdo@census.gov).




Direct technical questions regarding SWIM to: [geo.swim@census.gov](mailto:geo.swim@census.gov).

## APPENDIX G Switch to BBSP Style Button

Changes the symbology of the edges if you want to do BBSP work in your VTD module.

Click this icon  in order to toggle between the two symbology.

Table 101: Switch to BBSP Style

| Step                 | Action and Result   |
|----------------------|---|
| <p><b>Step 1</b></p> | <p>Starting with a project open:</p>   |
| <p><b>Step 2</b></p> | <p>Click the <b>Switch to BBSP style</b> button on the BBSP toolbar.</p>    |
| <p><b>Step 3</b></p> | <p>The symbology of the edges changes, allowing you to do BBSP work with the BAS symbology in the VTD module (it just makes it easier and matches how GUPS looks for BBSP/BBSPV). Note that the Switch to BBSP style button has changed names to <b>Switch to VTD style</b>.</p>  |
| <p><b>Step 4</b></p> | <p>When you have completed the BBSP work, click on the <b>Switch to VTD style</b> button to return to the VTD module.</p>   |

| Step | Action and Result   |
|------|---|
|      |  <p>The screenshot displays a GIS application window. On the left, a 'Layers' panel lists several data layers: 'working_county', 'edges_06075', 'vtd2010_06075' (highlighted in blue), 'vtdocument_06075', 'tracts2010_06075', 'blockgroups_06075', 'tabblock2010_06075', and 'pointtm_06075'. Below these are 'Point Landmark' categories. The main map area shows a street grid with labels for streets like 'Seal Rock Dr', 'Veterans Dr', 'Clement St', and 'Gentry Blvd'. A pink shaded area labeled 'Fort Miley 7' is visible. The 'Pacific Ocean' is shown to the west of the map.</p> |