

2020 Census Participant Statistical Areas Program (PSAP) Standard Respondent Guide

Instructions for Using the Geographic Update Partnership Software (GUPS)
February 2019

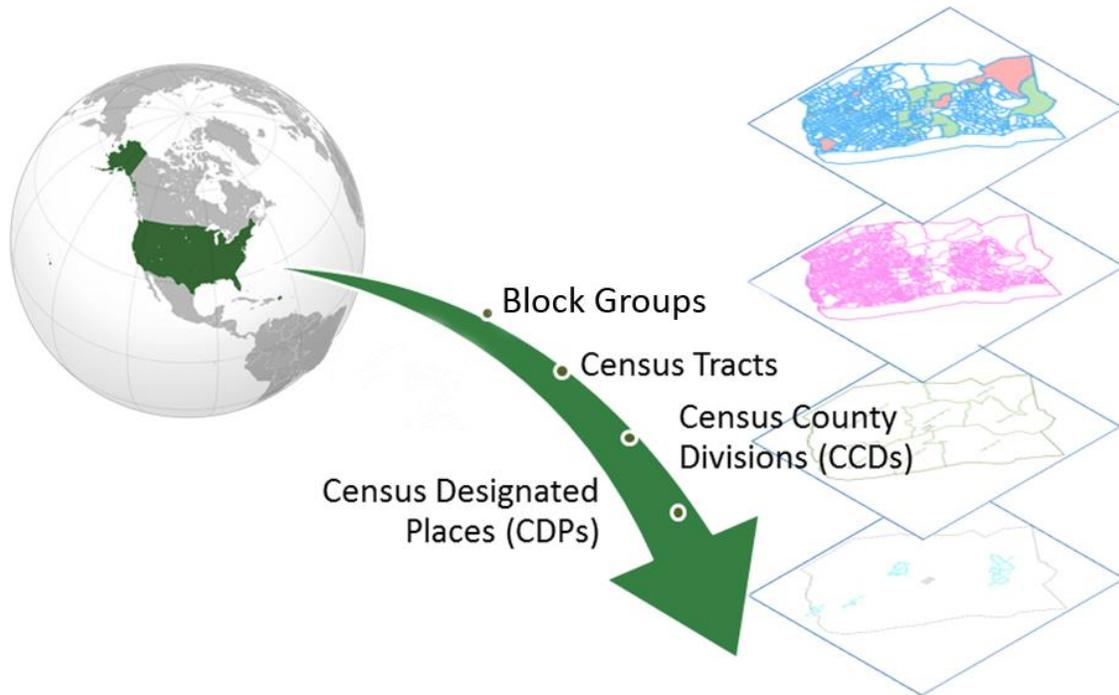


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INTRODUCTION

A. General Information

The 2020 Census Participant Statistical Areas Program (PSAP) provides designated participants the opportunity to review and suggest changes to the boundaries and names for statistical geographic areas, based on U.S. Census Bureau criteria and guidelines. Local governments and data users often need data for planning by smaller, statistical geographic areas. The Census Bureau uses these statistical geographies to tabulate and disseminate data for the Decennial Census, Economic Census, and the American Community Survey (ACS).

The Census Bureau establishes and maintains both standard and tribal statistical geographies solely for statistical purposes and does not take into account or attempt to anticipate any non-statistical uses that may be made of their definitions. The Census Bureau will not modify the criteria for, or boundaries of, statistical areas to meet the requirements of any non-statistical program. Subsequent sections of this Respondent Guide detail each statistical geography's criteria, standards, and thresholds. In addition, the *Federal Register Notices* also provide a formal resource for the criteria, standards, and thresholds.

The Census Bureau intends for the PSAP to be a process open to all interested parties and strongly recommends that primary participants seek input from other census data users and stakeholders. Local participants bring an important wealth of knowledge necessary to delineate statistical areas that best meet local needs and development patterns. The primary participant should publicize the process by making the proposed statistical areas available for review by interested data users, or by inviting individuals and agencies to a meeting to discuss the statistical areas proposal. At the time of its submission, the statistical areas must represent the best collective judgment of the local organizations and data users.

The Census Bureau is aware that at times there are conflicting needs or requirements and that it is not always possible to reach a clear consensus. To assist in situations where a data user alleges the process was not open or objects to the final proposed PSAP submission for their area, the Census Bureau suggests that the primary participant maintain documentation that proves they conducted an open review process. Maintaining documentation demonstrates that the delineation of statistical geographies was an open process and provides background on particular outcomes. Such documentation could include names of agencies invited to meetings, meeting attendance, discussion topics and outcomes, copies of newspapers, emails, and other means of communication used to publicize the review process.

B. The 2020 Census Participant Statistical Areas Program (PSAP)

There are two categories of statistical geographies eligible for review and update during PSAP: standard statistical areas and tribal statistical areas. Standard statistical geography includes the following:

- Census tracts.
- Block groups.
- Census designated places (CDPs).

- Census county divisions (CCDs), in 21 states.

Tribal statistical geography includes the following:

- Tribal census tracts.
- Tribal block groups.
- Census designated places (CDPs).
- Alaska Native village statistical areas (ANVSAs).
- Oklahoma tribal statistical areas (OTSAs) and OTSA tribal subdivisions.
- Tribal Designated Statistical Areas (TDSAs).
- State Designated Tribal Statistical Areas (SDTSAs).
- Alaska Native Regional Corporations (ANRCs) and State American Indian Reservations (SAIRs).¹

To gain a better understanding of how PSAP geographies relate to one another and to other geographies, refer to [Figure 1](#) and [Figure 2](#).

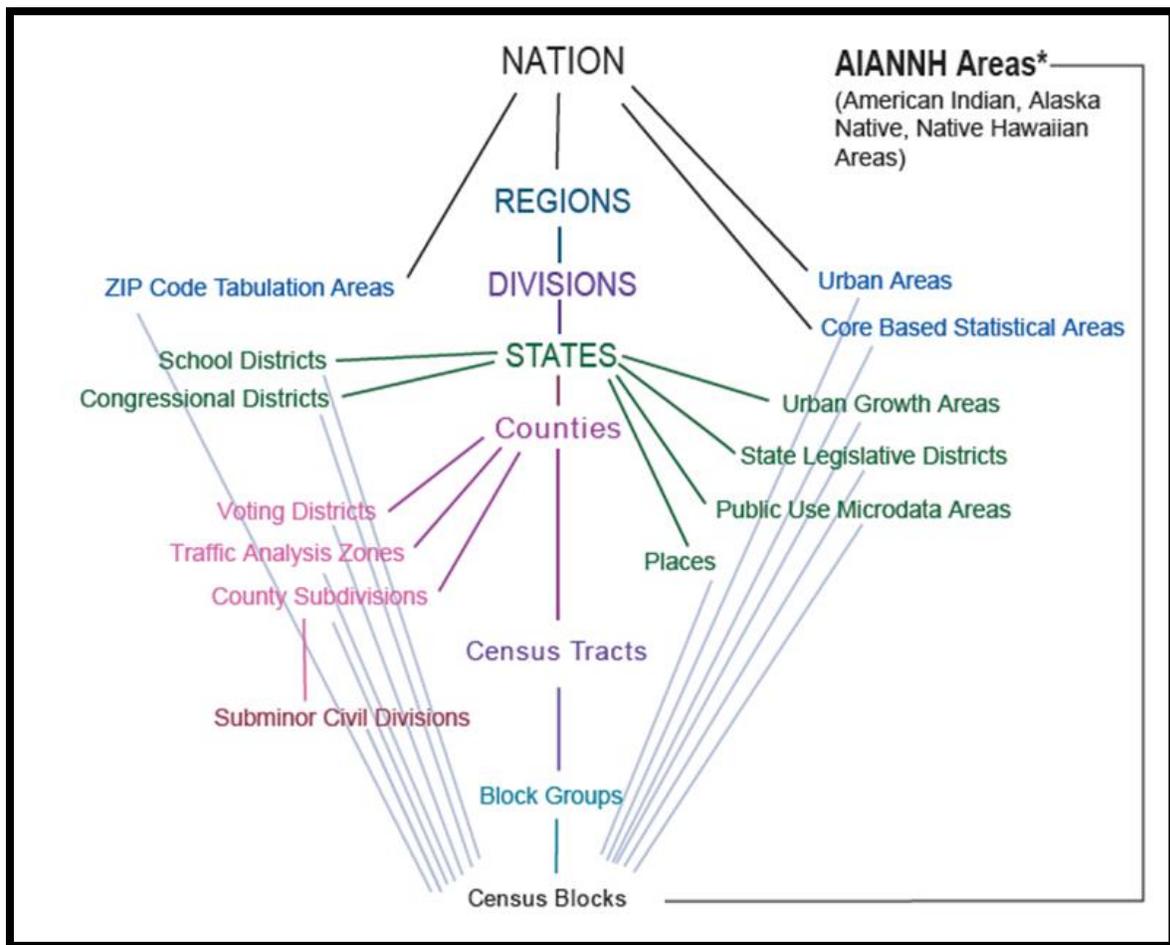


Figure 1. Standard Hierarchy of Census Geographic Entities

¹ ANRCs and SAIRs are not statistical areas, but they are included in 2020 Census PSAP for administrative reasons.

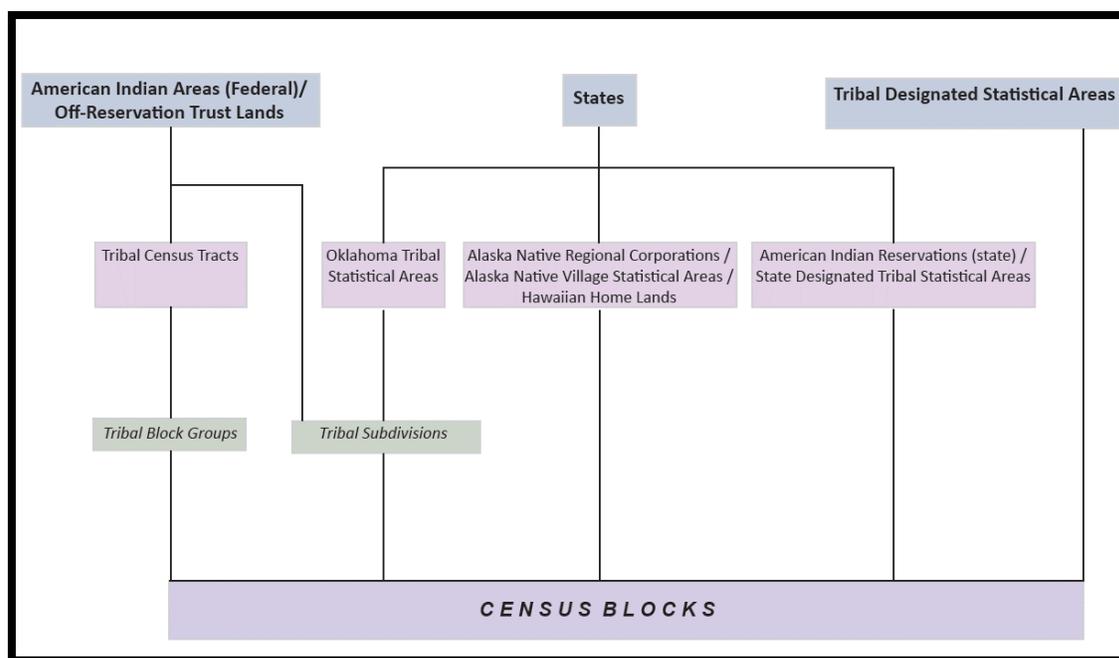


Figure 2. Hierarchy of American Indian, Alaska Native, and Native Hawaiian Areas

For 2020, the Census Bureau integrated the Tribal Statistical Areas Program (TSAP) that covered the tribal geographies in 2010 into the PSAP. The Census Bureau prepared separate documentation for the tribal statistical geography component of PSAP. Those tribal details are not included in this material.

In addition to the integration of TSAP into PSAP, the Census Bureau reviewed census tracts and block groups in nearly all counties, identifying suggested changes and adjustments to help streamline the review and update on the part of primary participants.² The Census Bureau terms this early review and the associated updates an “internal review” and its output as the “2020 Proposed Plan.” Participants choose either the “2020 Proposed Plan” or “2010 Geographies” when using the Modify Area Feature button in the Geographic Update Partnership Software (GUPS). Refer to [Table 18](#) for a visual showing both choices.

This internal review ensures a consistent review of the census tract and block group statistical geographies prior to any external review conducted by 2020 Census PSAP participants. The Census Bureau believes the internal review reduces the burden of participation; however, participants can opt to conduct their own review and update the 2010 statistical geographies or they can review and update the 2020 proposed plan. Because of decreased processing timeframes, the Census Bureau is unable to provide the internal review updates made to the census designated place geographies during the delineation phase; however, those updates will appear during verification phase of PSAP in January 2020. The verification phase allows

² The Census Bureau did not conduct this internal review for seven large counties with active PSAP participants that we anticipate already had plans for updating statistical areas for 2020. The Census Bureau contacted these participants to inform them of the absence of a 2020 proposed plan.

participants to see the updates made by the Census Bureau as well as those made by the participant during the delineation phase.

C. The Boundary and Annexation Survey (BAS)

The Boundary and Annexation Survey (BAS) is the annual Census Bureau survey of legal geographic entities. Whereas the PSAP provides the process for reviewing and updating the statistical geographic entities, the BAS provides the process for reviewing and updating legal geographic entities. Its purpose is to determine, solely for data collection and tabulation by the Census Bureau, the complete and current inventory and the correct names, legal descriptions, official status, and official, legal boundaries of the legal geographic entities with governmental authority over certain areas within the United States, as of January 1 of the survey year. The BAS also collects specific information to document the legal actions that established a boundary or imposed a boundary change. Through the BAS, the Census Bureau also accepts updates to features such as roads or rivers, and address range break information at the boundaries. To update the boundaries for legal boundaries, participate in the BAS.

For information regarding the BAS, consult the Census Bureau’s BAS website at <https://www.census.gov/programs-surveys/bas.html>. For questions, email geo.bas@census.gov or call 1-800-972-5651.

D. 2020 Census PSAP Schedule

Table 1 provides the PSAP program schedule and timeframe for completion of the various tasks. Understanding the 2020 Census PSAP schedule is important for participants to prepare for the delineation and verification phases.

Table 1: 2020 Census PSAP Schedule

Date	Event
February 2017-October 2018	Census Bureau conducted PSAP internal review to generate 2020 proposed plans.
March-May 2018	Census Bureau contacted 2010 Census PSAP participants to inquire about 2020 Census PSAP participation.
July 2018	Census Bureau began sending 2020 Census PSAP invitation materials to participants.
January 2019	PSAP delineation phase begins. Participants have 120 calendar days to submit updates.
January 2019	PSAP webinar trainings begin.
July 2019	Census Bureau sends official communication notifying closeout of PSAP delineation phase.
January 2020	PSAP verification phase begins. Participants have 90 calendar days to review updates.
October 2020	Census Bureau conducts closeout of the 2020 Census PSAP.

The PSAP delineation phase begins in January 2019 with the delivery of delineation materials. Participants have a maximum of 120 days from the receipt of materials to complete and submit any statistical geography updates to the Census Bureau. The closeout of the delineation phase

begins in the summer of 2019 prior to the start of the verification phase in January 2020. A final closeout occurs after the conclusion of the verification phase in October 2020.

In March 2018, the Census Bureau began contacting previous participants from the 2010 program, regional multi-county organizations, local governments, state data centers, and other interested individuals to solicit participation in the 2020 Census PSAP.³ The Census Bureau began formally inviting the interested participants in July 2018.

E. Training and Support

The Census Bureau provides assistance by answering questions; clarifying criteria, guidelines, and procedures; and providing information concerning specific situations that participants encounter when reviewing, delineating, and submitting their statistical area plans. The Census Bureau plans to conduct training webinars to provide instruction on participating in PSAP and the use of the GUPS. The webinar schedule is available at <<https://www.census.gov/programs-surveys/decennial-census/about/psap.html>>. In addition, an electronic version of this guide is available on that website. For questions concerning technical problems with the GUPS application or specific programmatic questions, support is available via telephone at 1-844-788-4921 and email at <geo.psap@census.gov>.

F. Respondent Guide Organization

Participants reviewing standard statistical area geographies are required to use the Geographic Update Partnership Software, or GUPS, to make updates. In addition to providing the criteria and programmatic guidelines necessary to define and update standard statistical geographies, this guide provides participants with systematic instructions of GUPS for use in PSAP. It also introduces the fundamental concepts of the software as well as the major functionalities developed and contained in the software and services. By using this guide and adhering to the PSAP guidelines and criteria, participants learn to utilize GUPS to review (and potentially update) a variety of statistical geographies and submit their final updates to the Census Bureau. They also learn about the next steps for PSAP. This guide contains four parts.

Part 1 Overview of the 2020 Census PSAP Materials and the Standard Statistical Geographies⁴

This section provides an overview of the 2020 Census PSAP delineation materials and summarizes the statistical geography criteria and guidelines for census tracts, block groups, CDPs, and CCDs. Participants use the content within this section to familiarize themselves with the materials provided by the Census Bureau and with the background of the four standard

³ For Census Bureau purposes, the term “county” includes parishes in Louisiana; boroughs, city and boroughs, municipalities, and census areas in Alaska; independent cities in Maryland, Missouri, Nevada, and Virginia; districts and islands in American Samoa, and districts in the U.S. Virgin Islands; municipalities in the Commonwealth of the Northern Mariana Islands; municipios in the Commonwealth of Puerto Rico; and the areas constituting the District of Columbia and Guam. Henceforth in this document, the term “counties” will refer to all of these entities.

⁴ Within the document, **bold, blue colored font** denotes the presence of a cross-referenced hyperlink to other sections, figures, tables, or appendices. Use the Ctrl key and click of left mouse button while hovering over these **bold blue words** to skip directly to the linked item. The “**Part One:**” above is the first cross-reference hyperlink in this document.

statistical geographies.

Part 2 Introducing GUPS for 2020 Census PSAP

This section introduces GUPS and the basics of the software. Participants refer to this section for the technical instructions to install GUPS, to learn how to get started, and to familiarize themselves with menus, buttons, and tools within the software.

Part 3 Using GUPS for 2020 Census PSAP

This section describes the use of GUPS for 2020 Census PSAP. It discusses the review and update of PSAP geographies. It provides instruction to validate a submission and to prepare it for delivery to the Census Bureau using the Secure Web Incoming Module (SWIM). Participants find information and detailed steps to review and modify the statistical geographies.

Note: The examples in this section highlight the function of the menu, the button, the tool, or the process. They are not specific to the vintage of geography (i.e., the 2010 statistical geography or the 2020 proposed plan). The function of the menus, buttons, and tools applies regardless of the vintage of the geography.

Part 4 Next Steps for 2020 Census PSAP

This section provides information on the next steps for 2020 Census PSAP. It includes information for participants on the Census Bureau's processing of submissions, the upcoming verification phase, and the final closeout phase after verification.

IMPORTANT: Due to operational updates, some minor discrepancies may occur between the appearance of individual screens within GUPS, especially concerning polygon colors and symbology in the Map View and the appearance of specific buttons and warning messages. Other small variations may also appear.

PART 1 OVERVIEW OF THE 2020 CENSUS PSAP MATERIALS AND THE STANDARD STATISTICAL GEOGRAPHIES

This portion of the Respondent Guide lays the programmatic foundation for the remainder of the document and provides a reference for upcoming sections. It provides an overview of the delineation materials and 2020 Census PSAP standard statistical geographies. It summarizes the statistical geography criteria, guidelines, and specifications for each of the four standard statistical geographies.

The goal of PSAP is to produce meaningful statistical geographies for data users while maintaining consistent statistical geography nationwide. It is the Census Bureau's responsibility to ensure nationwide uniformity in applying the statistical area criteria and guidelines. As a result, we may require some changes in the boundaries or delineation of some statistical areas to meet the national standard.

By creating one, streamlined method of participation for standard statistical geographies (i.e., the Geographic Update Partnership Software, or GUPS), the Census Bureau provides an efficient and intuitive system to review and update statistical boundaries and edit data layers while maintaining flexibility to retrieve and review selected information. Participants must use the Census Bureau supplied GUPS and shapefiles to participate in PSAP. The Census Bureau will not accept any submission delineated outside of the GUPS or based on non-Census Bureau provided shapefiles.

Part B of the Introduction mentions that 2020 proposed plans for census tracts and block groups exists for most counties in the nation. The Census Bureau recommends participants review the 2020 proposed plan. Participants may review and agree with the proposed plan or they may make adjustments to that plan. Taking this approach may streamline the review and update process, if any updates are required. Use of the 2020 proposed plan ensures the aforementioned consistency of review mentioned in the previous section.

If participants choose to begin their review from the 2010 statistical geographies, they must conduct the necessary updates to ensure the statistical areas meet the published criteria and guidelines, coding and naming conventions, and ensure the features used for the boundaries are valid. This approach is likely to be lengthier than a review of the 2020 proposed plan, but some participants may find it the best approach for their situation.

IMPORTANT: If participants begin conducting their review and wish to change to the other vintage of geography, they must delete their GUPS project. **Table 14** includes a section that describes the process of deleting a project in GUPS and starting over by choosing the **GUPS Data Settings** button.

CHAPTER 1. DELINEATION PHASE MATERIALS FOR 2020 CENSUS PSAP

This chapter focuses on identifying the materials participants receive for the delineation phase.

1.1 Informational and Instructional Materials

The Census Bureau provides this Respondent Guide for conducting the 2020 Census PSAP work using GUPS. To support participants’ review and update of their statistical geographies for the 2020 Census, the Census Bureau created Quick Reference and Quick Program Guides that summarize each standard statistical geography and digital delivery methods, as well as Microsoft Excel files of 2020 proposed changes for census tracts and block groups. These files exist for all but the seven stateside counties not worked through the Census Bureau’s internal review.

The Census Bureau provides all informational and instructional materials in in digital format. Locate the digitally formatted materials on the PSAP website as well as on the “Data disc” provided to participants that requested DVDs during the invitation phase of 2020 Census PSAP. Review Table 2 to identify each piece of informational and instructional material distributed by the Census Bureau in support of 2020 Census PSAP for standard geographies and to identify the participants receiving those materials.

Table 2: Quick Reference, Quick Program, and Respondent Guide Materials

Document ID	Name of Material	Participant(s) Receiving Material
G-640	Quick Reference: Block Groups	Stateside, non-tribal participants.
G-650	Quick Reference: Census Tracts	Stateside, non-tribal participants.
G-615	Quick Reference: Census Designated Places	Stateside, non-tribal participants.
G-660	Quick Reference: Census County Divisions	Stateside, non-tribal participants.
G-615PR	Quick Reference: Census Designated Places	Puerto Rico participants.
G-640PR	Quick Reference: Block Groups	Puerto Rico participants.
G-650PR	Quick Reference: Census Tracts	Puerto Rico participants.
Q-900	Quick Program Guide for Digital Download of GUPS	Stateside, non-tribal participants that requested to download their materials online.
Q-905	Quick Program Guide for DVD delivery of GUPS	Stateside, non-tribal participants and Puerto Rico participants that requested DVDs for delivery of materials.
G-730	Standard GUPS Respondent Guide	Stateside, non-tribal participants and Puerto Rico participants.

The Census Bureau supplies the list of changed statistical entities in the form of a Microsoft Excel file (e.g., psap20_proposed_changes_<SSCCC>.xlsx), where SS is the two-digit state FIPS code and CCC is the three-digit county FIPS code. This file is the output from Census Bureau’s internal review. It appears on the previously mentioned “Data disc” and is available online for download. The Excel file contains census tracts that have been split or merged, or have had code/type changes and census tracts with modified block groups. The following seven fields of information comprise the file:

- STATEFP is the two-digit state FIPS code.

- COUNTYFP is the three-digit county FIPS code.
- TRACTCE is the six-digit census tract code (with leading and trailing zeros and no decimal point).
- BLKGRPCE is the one-digit block group number. It will be blank if the entity is a tract, and will have an integer from 1-9 if it pertains to a block group.
- BLKGRPID is the 12-digit block group code that concatenates the STATEFP, COUNTYFP, TRACTCE, and BLKGRPCE information into one field if the record represents a block group, otherwise it will be blank. Participants use this field, along with the TRACTCE field, to review the Census Bureau changes performed to the 2010 geographies within the 2020 proposed plan.
- TRACTTYP and BGTYP are blank unless the entity is a special use entity, in which case it will contain a single letter pertaining to the special use categories within GUPS (A, B, C, H, I, J, M, O, P, T, and W). These single character codes represent the information shown in [Figure 3](#) in both special use census tracts and special use block groups.

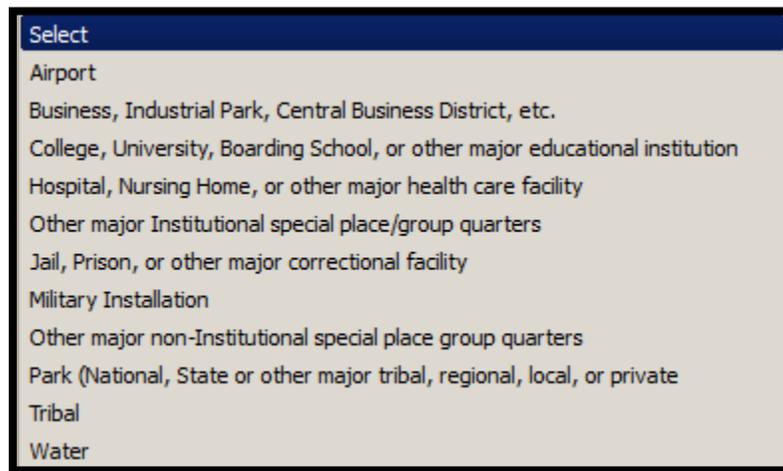


Figure 3. Types of Special Use Geographies

1.2 DVD Materials

The Census Bureau supplies two DVDs to stateside, non-tribal participants that asked to receive their delineation material by that digital medium during the invitation phase, as well as to all Puerto Rico participants. One DVD contains the GUPS software to install on the participant’s computers. The second DVD is the “Data disc.” It contains the partnership shapefiles to conduct the 2020 Census PSAP work using the GUPS software. The “Data disc” also contains digital copies of the Quick Reference Guides, the appropriate Quick Program Guide, and the Microsoft Excel file(s) 2020 proposed changes list for each county the participant agreed to review. All informational and instructional materials provided on DVD are available on the PSAP website for online download. Instructions for using these DVDs for 2020 Census PSAP are in [Part 2](#).

1.3 Delineation Phase Postcard

One important item enclosed with the delineation materials is the delineation phase postcard (e.g., Document ID P-300 and P-300PR for Puerto Rico). After reviewing the standard statistical geographies and determining the update status of the materials, please complete the postcard indicating whether changes are forthcoming. The return of this postcard assists the Census Bureau with planning for incoming submissions and identifying participants that will not be providing updates. The Census Bureau requests the return of this postcard within a month of receipt of the delineation phase materials.

If a participant discovers changes are necessary to their 2020 Census PSAP materials after returning the delineation postcard, please contact the Census Bureau PSAP staff by email at geo.psap@census.gov, or phone them at 1-844-788-4921 to let them know a submission is forthcoming.

CHAPTER 2. CENSUS TRACTS

Census tracts are small, relatively permanent geographic divisions of a county or statistically equivalent entity defined for the tabulation and presentation of data from the decennial census, the ACS, and selected other statistical programs. Census tracts nest within, and completely cover, counties nationwide. Ideally, their boundaries remain the same between censuses making it possible to compare statistics from decade to decade.

The Census Bureau published the 2020 Census PSAP census tract criteria in the *Federal Register*, available on the PSAP website. [Appendix B](#) provides a summary of the statistical geographies criteria thresholds.

The following criteria apply to the United States, including federally recognized American Indian reservations (AIRs) and off-reservation trust lands (ORTLs), Puerto Rico, and the Island Areas⁵:

- Census tracts must not cross county or state boundaries.
- Census tracts must cover the entire land and water area of a county.
- Census tracts must comprise a reasonably compact and contiguous land area, with a few exceptions.⁶
- Census tract boundaries should follow visible and identifiable features.
- Census tracts must meet specific population and housing unit thresholds outlined in [Table 3: Census Tract Types and Thresholds](#).
- Census tracts must have a basic numeric identifier composed of no more than four digits and may have a two-digit decimal suffix. Find more detail on numbering in [Section 2.2, Census Tract Codes and Numeric Identification](#).
- Census tracts have three types for the 2020 Census, standard, tribal, and special use. Refer to [Table 3: Census Tract Types and Thresholds](#) for the definition and associated criteria for standard and special use census tracts. Tribal census tracts do not appear in the table since they are out of scope for this material.

The Census Bureau may modify and, if necessary, reject any proposals for census tracts that do not meet the published criteria. In addition, the Census Bureau reserves the right to modify the boundaries and attributes of census tracts as needed to meet the published criteria and/or maintain geographic relationships before or after the final tabulation geography is set for the 2020 Census.

⁵ For Census Bureau purposes, the United States typically refers to only the fifty states and the District of Columbia, and does not include the U.S. territories (Puerto Rico, the Island Areas, and the U.S. Minor Outlying Islands). The Island Areas includes American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands. The U.S. Minor Outlying Islands are an aggregation of nine U.S. territories: Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Palmyra Atoll, and Wake Island.

⁶ The Census Bureau permits noncontiguous boundaries only where a contiguous area or inaccessible area would not meet population or housing unit count requirements for a separate census tract, in which case the noncontiguous or inaccessible area must be combined with an adjacent or proximate tract. For example, combine an island that does not meet the minimum population threshold for recognition as a separate census tract with other proximate land to form a single, noncontiguous census tract. The Census Bureau reviews each instance of noncontiguous census tracts and uses their discretion to accept or reject.

Table 3: Census Tract Types and Thresholds

Census Tract Types	Description	Population Thresholds	Housing Unit Thresholds	Area Measurement Thresholds	Employment Threshold
Standard Census Tract	Small statistical subdivisions of counties; emphasis on comparability over time to facilitate longitudinal analysis.	Optimum: 4,000 Min: 1,200 Max: 8,000	Optimum: 1,600 Min: 480 Max: 3,200	None	NA
Special Use Census Tract	A census tract encompassing an employment center, large airport, public park, public forest, or large water body with no (or very little) population or housing units.	None (or very little) or within the standard census tract threshold	None (or very little) or within the standard census tract threshold	At least comparable in size to surrounding standard census tracts	Suggested minimum of 1,200 workers or jobs when encompassing employment centers.

2.1 Census Tract Threshold Requirements

Census tracts, with the exception of special use tracts, must meet specified population or housing unit thresholds as outlined above in [Table 3: Census Tract Types and Thresholds](#). This helps ensure a minimal level of reliability in the sample data and minimized potential disclosures of sensitive information. PSAP participants should aim to create census tracts that meet the optimal population of 4,000 or 1,600 housing units and maintain the minimum thresholds unless it is flagged as a special use tract (discussed above), or is coextensive with a county with fewer than 1,200 people. The Census Bureau uses a housing unit criterion to accommodate seasonably occupied areas in which the decennial census population count will be lower than the ACS estimates.⁷

A census tract that exceeds the maximum thresholds should be split into multiple tracts; those that drop below the minimum thresholds should be merged with an adjacent tract. If a participant chooses not to split or merge tracts that do not meet approved thresholds, they must provide a justification for retaining the existing geography. GUPS allows participants to add remarks or justifications to statistical geographies that are not changed in the event that population growth (new housing development, typically) or decline (following depopulation trends or scheduled housing demolition) is anticipated.

Participants should use the 2010 Census population and housing counts for census tract review in most cases. Locally produced population and housing unit estimates are permissible when reviewing and updating areas experiencing considerable growth since the 2010 Census.

⁷ “Occupied seasonally” refers to seasonal communities in which residential populations are lower on Census Day, April 1, than at other times of the year, and for which estimates may be reflected in the ACS. The ACS is designed to produce local area data for a 12-month period estimate.

The housing unit thresholds use the national average of 2.5 persons per household. Because of local and regional variations to this average, the Census Bureau will consider variation while reviewing all census tract revisions.

2.2 Census Tract Codes and Numeric Identification

The census tract codes consist of six digits with an implied decimal between the fourth and fifth digit, with leading and trailing zeroes for census tracts without a full six digits; e.g. 140102 and 002300, respectively. Census tract numbers (sometimes described as census tract names) are the same digits but expressed without the full digit range of the code (1401.02 or 23, for the examples above). A permanent numbering system is desirable since it helps data users make comparisons of information by census tract from one decade to the next.

The Census Bureau uses suffixes (the final two digits of the tract code, populated with '00' if none exists) to help identify census tract changes for comparison purposes. Census tract suffixes may range from .01 to .98. When a census tract splits, the resulting tracts retain the basic four-digit base code and receive different suffixes. For example, if census tract 0014.00 splits, the new tract codes are 0014.01 and 0014.02. If census tract 0014.02 splits, the "02" suffix is "retired" and the resulting tracts suffix becomes "03" and "04" (or the next available suffixes). Data users expect the four-digit basic census tract codes to remain unchanged from one decade to another. The Census Bureau allows renumbering of census tracts only in limited circumstances, such as when there are more anticipated census tract splits than available suffixes.

Some ranges of census tract numbers identify distinctive types of census tracts. The code range 9400 identifies census tracts with a majority of population, housing, or land area associated with an American Indian Area. The 9800 code range was established for the 2010 Census and used to specifically identify special land-use census tracts; that is, census tracts defined to encompass a large area with little or no residential population and/or with special characteristics, such as large parks, special land use, or employment areas. For 2020, this range also includes areas not characterized by residential population (i.e., National Parks or large water bodies). It morphed into special use census tracts, removing reference to land since they may be water. Refer to [Table 3: Census Tract Types and Thresholds](#) for details on the thresholds for special use census tracts. These types of tracts are optional in PSAP.

2.3 Census Tract Boundary Requirements

Census tract boundaries generally follow permanent, visible features that are identifiable in the field. The following features are preferred as census tract boundaries:

- State and county boundaries must always be census tract boundaries. This criterion takes precedence over all other criteria or requirements.
- American Indian reservation and off-reservation trust land boundaries.
- Visible, perennial natural and cultural features, such as roads, shorelines, rivers, perennial streams and canals, railroad tracks, or aboveground high-tension power lines.
- Boundaries of legal and administrative entities in selected states. See [Table 4](#) for states with acceptable minor civil division and incorporated place boundaries.
- Additional legally defined administrative boundaries for barrio, barrio-pueblo, and subbarrio boundaries in Puerto Rico; census subdistrict and estate boundaries in the U.S. Virgin Islands;

county and island boundaries in American Samoa; election district boundaries in Guam; municipal district boundaries in the Northern Mariana Islands; and Alaska Native Regional Corporation boundaries in Alaska.⁸

- Boundaries of large parks, forests, airports, penitentiaries/prisons, and or military installations if the boundaries are clearly visible.
- Some nonstandard visible features such as major ridgelines, aboveground pipelines, intermittent streams, or fence lines.
- Some nonstandard nonvisible features such as parcel boundaries, straight-line extensions and other lines-of-sight between acceptable visible features.

Table 4: Acceptable Minor Civil Division (MCD) and Incorporated Place Boundaries

State	All MCD Boundaries	Boundaries of MCDs Not Coincident with the Boundaries of Incorporated Places that themselves are MCDs	All Incorporated Place Boundaries	Only Conjoint Incorporated Place Boundaries
Alabama				X
Alaska				X
Arizona				X
Arkansas				X
California				X
Colorado				X
Connecticut	X		X	
Delaware				X
Florida				X
Georgia				X
Hawaii				X
Idaho				X
Illinois		X		X
Indiana	X			X
Iowa		X ⁹		X
Kansas		X ¹⁰		X
Kentucky				X
Louisiana				X
Maine	X		X	
Maryland				X
Massachusetts	X		X	X
Michigan		X		X
Minnesota				X
Mississippi				X
Missouri				X
Montana				X
Nebraska				X
Nevada				X
New Hampshire	X		X	

⁸ Insofar as such boundaries are unambiguous for allocating living quarters as part of 2020 Census activities.

⁹ Governmental townships only.

¹⁰ Townships only.

State	All MCD Boundaries	Boundaries of MCDs Not Coincident with the Boundaries of Incorporated Places that themselves are MCDs	All Incorporated Place Boundaries	Only Conjoint Incorporated Place Boundaries
New Jersey	X		X	
New Mexico				X
New York	X		X	
North Carolina				X
North Dakota		X		X
Ohio		X		X
Oklahoma				X
Oregon				X
Pennsylvania	X		X	
Rhode Island	X		X	
South Carolina				X
South Dakota				X
Tennessee		X		X
Texas				X
Utah				X
Vermont	X		X	
Virginia				X
Washington				X
West Virginia				X
Wisconsin		X		X
Wyoming				X

CHAPTER 3. BLOCK GROUPS

Block groups are statistical geographic subdivisions of a census tract defined for the tabulation and presentation of data from the decennial census and select other statistical programs. They are the smallest geographies for which the Census Bureau provides sample data, primarily from the ACS 5-year period estimates. Block groups nest within, and completely cover, census tracts nationwide. They form the geographic framework within which the Census Bureau defines and numbers census blocks. The block group number becomes the first digit of the four-digit census blocks. Each block group comprises a reasonably compact and contiguous cluster of census blocks. Census tracts may contain no more than 10 block groups (nine standard and one comprised of water).

The Census Bureau published the 2020 Census PSAP block group criteria in the *Federal Register* notice available on the PSAP website. [Appendix B](#) provides a summary of the statistical geographies criteria thresholds.

The following criteria apply to the United States, including federally recognized American Indian reservations (AIRs) and off-reservation trust lands (ORTLs), Puerto Rico, and the Island Areas:

- Block groups must not cross census tract boundaries.
- Block groups must cover the entire land and water area of each census tract.
- Block groups must meet specific population and housing unit thresholds and suggested area and employment thresholds outlined below in [Table 5: Block Group Types and Thresholds](#).
- Block groups must comprise a reasonably compact and contiguous land area.
- Block group boundaries should follow visible and identifiable features.
- Block groups have three types, standard, tribal, and special use for the 2020 Census. For the definition and associated criteria for standard and special use block groups, refer again to [Table 5: Block Group Types and Thresholds](#). Tribal block groups do not appear in the table since they are out of scope for this material.

The Census Bureau may modify and, if necessary, reject any proposals for block groups that do not meet the published criteria. In addition, the Census Bureau reserves the right to modify the boundaries and attributes of block groups as needed to meet the published criteria.

Modification may also occur to maintain geographic relationships before or after the final tabulation geography is set for the 2020 Census.

As with census tracts, the Census Bureau recognizes there are significant, or special, geographic areas characterized by unique populations or not characterized by residential populations that local data users may wish to exclude from populated block groups. PSAP participants may designate special use block groups to distinguish them from standard block groups. Special use block groups are optional, and if delineated, they must follow specific details outlined in [Table 5](#). Special use census tracts must contain at least one special use block group and it must be coextensive with the special use tract boundary. If the area is not large enough to sustain a special use census tract, participants may identify special use block groups within standard census tracts.

Table 5: Block Group Types and Thresholds

Block Group Types	Description	Population Thresholds	Housing Unit Thresholds	Area Measurement Thresholds	Employment Threshold
Standard Block Groups	Subdivisions of census tracts; smallest geographic area for which ACS data are tabulated and disseminated.	Min: 600 Max: 3,000	Min: 240 Max: 1,200	None	NA
Special Use Block Groups	A block group, usually coextensive with a special use census tract, encompassing an employment center, large airport, public park, public forest, or large water body with no (or very little) population or housing units.	None (or very little) or within the standard block group thresholds	None (or very little) or within the standard block group thresholds	At least comparable in size to surrounding standard block groups	Suggested minimum of 600 workers or jobs.

3.1 Block Group Threshold Requirements

Block groups must meet specified population and housing unit thresholds as outlined above in [Table 5](#). This helps ensure a minimum level of reliability in sample data and minimizes potential disclosures of sensitive information. Like census tracts, the Census Bureau uses housing unit criterion to accommodate seasonably occupied areas that may have higher populations at times of the year other than on Census Day, April 1.

Like census tracts, a block group that exceeds maximum thresholds should be split; those that drop below the minimum thresholds should be merged with an adjacent block group. If a participant chooses not to change threshold errant block groups, they must provide justification for their retention. Unlike census tracts, block groups may be completely redefined to meet population or housing thresholds; however, in doing so, please consider the impact on analysis of block group level data across time.

In most cases, participants should use the 2010 Census population counts for block group review. Locally produced population and housing unit estimates are permissible when reviewing and updating areas experiencing considerable growth since the 2010 Census.

The housing unit thresholds use the national average of 2.5 persons per household. Because of local and regional variations to this average, the Census Bureau will consider variation while reviewing all block group revisions.

3.2 Block Group Codes and Numeric Identification

Block groups are identified by a single digit integer code from “1” through “9.” Codes with “0” designate a water only block group that does not contain population or housing units. If a

census tract needs more than nine block groups to organize the population and housing units, split the tract. The block group number provides the first digit for the 2020 tabulation blocks. For example, block group 3 includes all 2020 tabulation blocks numbered in the 3000 range within a single census tract. Block group numbers can repeat within a county, but must be unique within individual census tracts. Find details on the thresholds for special use block groups in [Table 5: Block Group Types and Thresholds](#).

3.3 Block Group Boundary Requirements

Like census tracts, block group boundaries generally follow permanent, visible features that are identifiable in the field. The following features are preferred as block group boundaries:

- State, county, and census tract boundaries must always be block group boundaries. This criterion takes precedence over all other criteria or requirements.
- American Indian reservation and off-reservation trust land boundaries.
- Visible, perennial natural and cultural features, such as roads, shorelines, rivers, perennial streams and canals, railroad tracks, or aboveground high-tension power lines.
- Boundaries of legal and administrative entities in selected states. See [Table 4](#) for states with acceptable minor civil division and incorporated place boundaries.
- Additional legally defined administrative boundaries for barrio, barrio-pueblo, and subbarrio boundaries in Puerto Rico; census subdistrict and estate boundaries in the U.S. Virgin Islands; county and island boundaries in American Samoa; election district boundaries in Guam; municipal district boundaries in the Northern Mariana Islands; and Alaska Native Regional Corporation boundaries in Alaska.
- Boundaries of large parks, forests, airports, penitentiaries/prisons, and or military installations if the boundaries are clearly visible.
- Some nonstandard visible features such as major ridgelines, aboveground pipelines, intermittent streams, or fence lines.
- Some nonstandard nonvisible features such as parcel boundaries, straight-line extensions and other lines-of-sight between acceptable visible features.

CHAPTER 4. CENSUS DESIGNATED PLACES (CDPS)

Census designated places (CDPs) are statistical geographic entities representing closely settled, unincorporated communities that are locally recognized and identified by name. They are the statistical equivalents of incorporated places, with the primary differences being the lack of both a legally defined boundary and an active, functioning governmental structure, chartered by the state and administered by elected officials. CDPs include comunidades and zona urbanas in Puerto Rico.

The Census Bureau published the 2020 Census PSAP CDP criteria in the *Federal Register*. It is available on the PSAP website and in [Appendix B](#). The following criteria apply to the United States, including federally recognized American Indian reservations (AIRs) and off-reservation trust lands (ORTLs), Puerto Rico, and the Island Areas:

- CDPs constitute a single, named, closely settled center of population.
- CDPs generally consist of a contiguous cluster of census blocks comprising a single piece of territory with a mix of uses similar to that of an incorporated place of similar size.
- CDPs cannot be located, partially or entirely, within an incorporated place or another CDP.
- CDPs may cross county boundaries, but must not cross state boundaries.
- CDPs have no minimum population or housing unit thresholds, but must contain some population, housing units, or both.
- CDP boundaries should follow visible features, except in circumstances where the boundary is coincident with the nonvisible boundary of a state, county, minor civil division, or incorporated place.
- CDP boundaries may follow other nonvisible features in instances where reliance upon visible features would result in over bounding of the CDP in order to include housing units on both sides of a road or street feature.
 - Such boundaries might include parcel boundaries and Public Land Survey System (PLSS) lines; fence lines; national, state, or local park boundaries; ridgelines; or drainage ditches.
- CDP names should be recognizable and used in daily communication by the residents of the community it represents.¹¹
- CDP names cannot have the same name as an adjacent or nearby incorporated place.

In accordance with the final criteria, the Census Bureau may modify and, if necessary, reject any proposals for CDPs that do not meet the established criteria. In addition, the Census Bureau reserves the right to modify the boundaries and attributes of CDPs as needed to maintain geographic relationships before the final tabulation geography is set for the 2020 Census.

¹¹ There should be features in the landscape that use the name, such that a non-resident would have a general sense of the location or extent of the community; for example, signs indicating when one is entering the community; highway exit signs that use the name; or businesses, schools, or other buildings that make use of the name.

CHAPTER 5. CENSUS COUNTY DIVISIONS (CCDS)

Census county divisions (CCDs) and equivalent entities are statistical geographic entities established cooperatively by the Census Bureau and officials of state and local governments in 21 states where minor civil divisions (MCDs) either do not exist or have been unsatisfactory for reporting statistical data.¹² The 21 states are as follows: Alabama, Alaska, Arizona, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Kentucky, Montana, Nevada, New Mexico, Oklahoma, Oregon, South Carolina, Texas, Utah, Washington, and Wyoming. [Appendix D](#) depicts the CCD states in green.

The Census Bureau discourages major revisions to CCDs since the primary goal of the CCD program has been to establish and maintain a set of sub-county units that have stable boundaries and recognizable names. However, updates and revisions may be necessary in some instances, where there have been revisions to census tract boundaries and the CCD boundaries follows those boundaries, or to resolve discrepancies where the census tract and CCD boundaries were supposed to be conjoint but were not. Revisions to CCD names may be necessary due to population changes within CCDs. Changes to CCD names must follow the guidance outlined in [Section 5.1](#).

The Census Bureau published detailed 2020 Census PSAP CCD criteria in the *Federal Register*, available on the PSAP website. [Appendix B](#) provides a summary of CCD criteria. The following criteria apply to the 21 states that contain CCDs:

- CCDs must have community orientation, i.e., center on place(s) that form a cohesive community area.
- CCDs must have visible and/or stable boundaries.
- CCD boundaries must follow state and county boundaries and conform to census tract boundaries.¹³
- CCD boundaries may follow the boundaries of federally recognized AIRs, and federal, state, or locally managed land.¹⁴
- CCD boundaries may follow conjoint city limits (where change to the boundary is infrequent).
- CCD boundaries may follow some nonstandard visible features such as major ridgelines, aboveground pipelines, intermittent streams, or fence lines.
- CCD boundaries may follow some nonstandard nonvisible features such as parcel boundaries, straight-line extensions and other lines-of-sight between acceptable visible features.
- CCDs must have recognizable names (see the next section for detail on name identification).

¹² In Alaska, census subareas are county subdivisions equivalent to CCDs. For purposes of this notice, the term CCD also refers to census subareas in Alaska.

¹³ Whenever possible, a CCD should encompass one or more contiguous census tracts or multiple CCDs should constitute a single census tract. Therefore, CCD boundaries should be consistent with census tract boundaries. Population size is not as important a consideration with CCDs as it is with census tracts

¹⁴ Managed land includes National Parks, National Monuments, National Forests, other types of large parks or forest, airports, marine ports, prisons, military installations, or other large facilities.

5.1 Census County Division Name Identification

Though CCDs do not include numeric identification, there are criteria for naming CCDs:

- Names of existing CCDs shall not be changed unless a compelling reason is provided, such as when the name from which the CCD was derived has changed, as in the case of Bainbridge Island, Washington, when the name of the city (Winslow) changed.
- Name new CCDs after the largest population center or historically central place within it (e.g., Taos, or Zuni Pueblo, New Mexico).
- CCDs with multiple centers of equal importance may represent two or three centers (e.g., Mount Pleasant-Moroni, Utah).
- CCDs may be named after the AIR (e.g., Hualapai, Arizona or Nez Perce, Idaho) or a prominent land use area (e.g., Federal Reservation, Washington or Yellowstone National Park, Wyoming) in which it is significantly or wholly located.
- CCDs may be named after a prominent physical feature (e.g., Mount Rainier, Washington) or a distinctive region within the county (e.g., Death Valley, California; Everglades or Lower Keys, Florida).
- If there is no clear cultural focus or topographic name that can be applied, a CCD name shall consist of the county name and a compass direction to indicate the portion of the county in the CCD or a place name and a compass direction to give the CCD location relative to the place. The directional indicator precedes a county name (e.g., Northeast Cobb, Georgia). If an incorporated place name is used, the directional indicator follows it (e.g., Del Rio Northwest, Texas).

In all cases, the objective is to identify the extent of the CCD by means of an area name since CCD names should always be meaningful to data users. Any name used as a CCD name must also be recognized by the Board on Geographic Names for federal use and appear in the Geographic Names Information System maintained by the U.S. Geological Survey. This includes any individual names combined to make a hyphenated CCD name.

With the overview of and high-level information on the statistical geographies provided in this portion and the general information from the Introduction of the Respondent Guide, the focus now shifts to introducing the GUPS for 2020 Census PSAP in the next portion, [Part 2](#).

PART 2 INTRODUCING GUPS FOR 2020 CENSUS PSAP

This portion of the Respondent Guide includes detailed system requirement information necessary to use GUPS. It offers an introduction to GUPS and its menus, and toolbars. It provides specific instructions, through "Step - Action and *Result*" tables. In these tables, the Action is usually a command or action to perform and the *Result(s)* of the action are in *italics*. For example, if participants click the QGIS icon on the desktop, *the software should begin to run automatically*.

GUPS allows participants to review and modify the statistical geographies in a more efficient manner than previous decades. GUPS integrates the standardized PSAP requirements and thresholds that define statistical geographies to eliminate the guesswork for participants.

GUPS runs in both a desktop PC and a network environment. It runs in QGIS, an open source Geographic Information System (GIS), and contains all functionality required to make updates, executes automated checks for program criteria compliance, and creates standardized data output files for Census Bureau processing. Many of the menus and functionality are solely part of QGIS functionality and not applicable to GUPS. For information on the QGIS open-source platform, go to: <<http://www.qgis.org/en/site/>>.

GUPS is available on DVD or available for download from the PSAP website at during the delineation phase. If participants chose the "DVD GUPS and SHAPEFILES" selection, there are two DVDs enclosed with their PSAP delineation materials. One includes the GUPS software and the second is the "Data disc." If participants chose the "DOWNLOAD GUPS and SHAPEFILES" selection, they must navigate to the following website to download GUPS: <<https://www2.census.gov/geo/pvs/gups/>>.

Once installed, the Census Bureau recommends using the "Census Web" choice within GUPS for accessing and loading the necessary shapefiles into GUPS. Use of this functionality eases participant burden of installing directly from the DVD or from copying the data from the DVD to the local computer.

The next three chapters cover the following topics:

Chapter 6 System Requirements and Installation

- GUPS system requirements.
- GUPS installation instructions.

Chapter 7 Getting Started with GUPS

- Accessing the shapefiles for 2020 Census PSAP.
- Open GUPS and start a new project.
- Save a project.
- Open a previous project.

Chapter 8 GUPS Menus and Toolbars

- GUPS Page Layout.
- GUPS interface, including the Menu bar, various toolbars, Table of Contents, and the Map View.
- Instructions for using the tools available through the menu and toolbars.

CHAPTER 6. SYSTEM REQUIREMENTS AND INSTALLATION

6.1 System Requirements

Before beginning the installation, check the computer to verify it has the capabilities needed to run GUPS. **Table 6** lists the hardware and software requirements to install and run GUPS and the software requirements to submit files through the SWIM website.

Table 6: GUPS Hardware and Software Requirements

Hardware	Operating System	Browser
<p>Disk Space Needed to Run GUPS: 3.3 GB</p> <p>Disk Space Needed to Store Shapefiles: Shapefile sizes vary. To view the size of the shapefiles, right-click, and choose Properties in the drop-down menu. <i>The Files Properties box opens and displays the folder size.</i> Select multiple files/folders in the list to view their properties via the same method.</p> <p>RAM: 4 GB minimum, 8 GB or more recommended for optimal performance.</p>	<p>Windows: To run GUPS, Windows users need one of the following operating systems:</p> <ul style="list-style-type: none">• Windows 7• Windows 8• Windows 10 <p>Apple Mac OS X: Mac OS X users must secure a license for Microsoft Windows and use a Windows bridge. The suggested bridge software is Boot Camp, which comes pre-installed on all Mac computers. Locate instructions for using Boot Camp at: <https://www.apple.com/support/bootcamp/getstarted/>.</p> <p>IMPORTANT: Since Boot Camp requires a restart of the computer to set up the bridge, be sure to print the instructions provided at the URL above before beginning installation.</p>	<p>Minimum Browser Versions to Use SWIM: SWIM supports the two most recent version of each of the major browsers (Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari.</p>

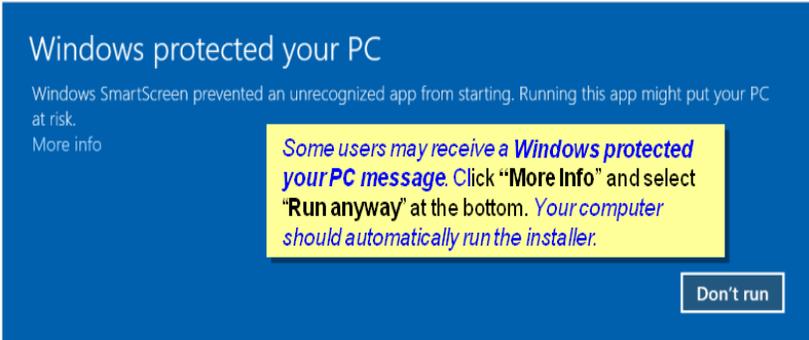
Depending on the Windows or OS version, the GUPS dialog boxes may have a different appearance than the screenshots contained in the respondent guide, although the content is the same.

6.2 GUPS Installation

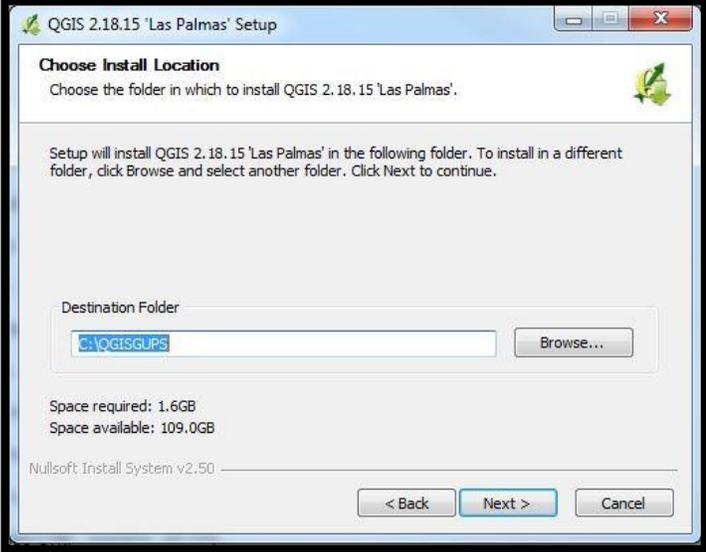
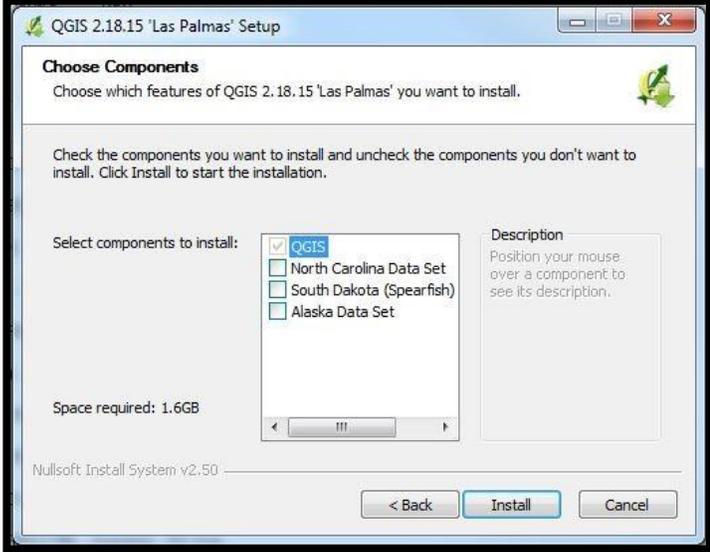
This section provides instructions for both methods, download and DVD, of GUPS installation. Administrator privileges may be required to install GUPS. Please ensure use of the version supplied for 2020 Census PSAP to conduct the review and update of statistical geographies. To complete the installation, follow the steps in **Table 7**.

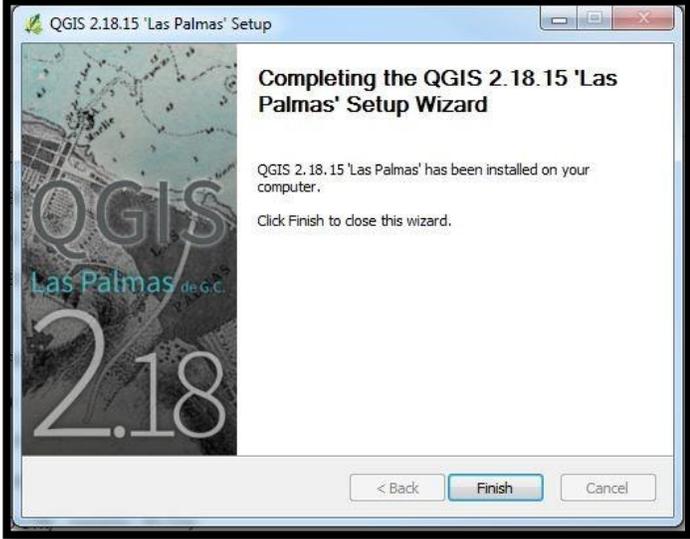
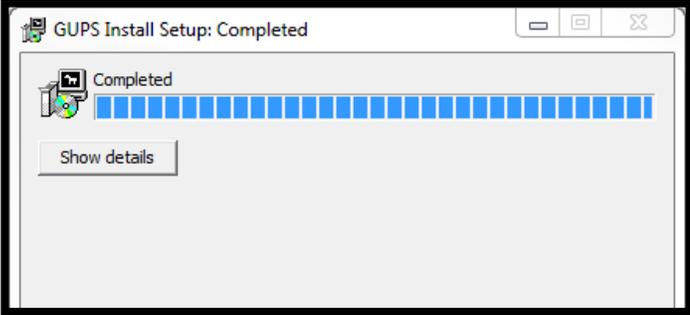
Note: To check for the latest version, navigate to the **GUPS** tab and click the **About GUPS** option in the drop-down menu to find the GUPS version number. If not running the latest version, download and follow the setup instructions that will automatically uninstall the old version before it installs the latest GUPS version.

Table 7: Installation of the GUPS Application

Step	Action and Result
<p>Step 1</p>	<p>Click the direct download link <https://www2.census.gov/geo/pvs/gups/> or place the installation DVD (GUPS disc) into the computer's DVD drive. <i>For some participants, a Windows protected your PC warning may appear.</i></p>  <p>To continue, click More info, and then select Run anyway?</p>
<p>Step 2</p>	<p>Other participants may receive an account control warning 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>  <p>If received, click Run, Yes, Allow, or an option that allows GUPS to proceed. <i>The software should begin to run automatically.</i></p>
	<p>Be aware some participants may experience issues with installation because of administrative rights and privileges on their local computer systems. Work with the local Information Technology (IT) support staff to understand the settings that prevent the installation of external software prior to contacting the Census Bureau for assistance.</p>
<p>Step 3</p>	<p>If the software does not run automatically, open Windows Explorer, navigate to the CD/DVD drive where the GUPS disc is located, and double click on the file named Setup-9.0.x.bat. Please be aware, the name of this file may vary slightly, but it will be the only setup .bat file available. If the software still does not run properly, contact the local System Administrator for assistance locally. If they cannot resolve the installation problem, contact the GUPS help desk at 1-844-788-4921 or by email at geo.psap@census.gov.</p>

Step	Action and Result
<p>Step 4</p>	<p>When the installer opens, <i>the Welcome to the QGIS Setup Wizard screen appears.</i></p> <div> </div> <p>Note: The version needed for PSAP is QGIS 2.18.15 Las Palmas. If another version of QGIS exists on the computer, an instruction to uninstall appears prior to installing the Las Palmas version. Allow the uninstall process to complete or problems with GUPS may occur. Before proceeding, close all other open programs or applications. Once other programs and applications are closed, click the Next button.</p>
<p>Step 5</p>	<p><i>The License Agreement screen appears.</i></p> <div> </div> <p>Read the License Agreement and click the I Agree button to continue.</p>

Step	Action and Result
<p>Step 6</p>	<p>The Choose Install Location screen opens. To prevent potential installation errors, allow the software to install at the default location (usually C:\Program files\QGISGUPS).</p>  <p>To begin the installation, click Next to continue.</p>
<p>Step 7</p>	<p>The Choose Components screen opens.</p>  <p>'<input checked="" type="checkbox"/> QGIS' in the Select components to install field is grayed out since it is the default. Click Install to continue.</p>
	<p>To review a previous screen or reread the license agreement, click the Back button (each screen contains this button).</p>

Step	Action and Result
<p>Step 8</p>	<p>The software should take between 5 and 10 minutes to install. When it finishes, <i>the Completing the QGIS GUPS Setup Wizard screen opens.</i></p>  <p>Click the Finish button.</p>
<p>Step 9</p>	<p>After choosing Finish button from the previous menu, <i>the GUPS Install Setup: Completed screen appears after showing the status of the installation.</i></p> 
<p>Step 10</p>	<p>To complete the installation, click the Close button at the bottom of the GUPS Install Setup: Completed Setup Wizard screen. Once the application installs, <i>a QGIS icon appears on the desktop. In addition, the All Programs menu list within the Start Menu includes a folder for QGIS.</i></p>

CHAPTER 7. GETTING STARTED WITH GUPS

After successfully installing GUPS, there are three ways to retrieve shapefiles when starting a new project:

- Census Web (Recommended. Loads directly into GUPS).
- CD/DVD (i.e., the “Data disc”).
- My Computer (If downloaded contents of “Data disc” onto local hard drive).

Note: The next chapter, [Chapter 8. GUPS Menus and Toolbars](#), describes the menus, buttons, and toolbars referenced throughout this chapter.

7.1 Accessing the Shapefiles for 2020 Census PSAP

Regardless of the product preference selected during the invitation phase, the shapefiles necessary to conduct PSAP are available directly within the GUPS application. By choosing the “Census Web” option when selecting the geography initially in GUPS, participants with internet connectivity can load files as needed, or load multiple county files at once.

Note: The “Census Web” option is the recommended method for accessing the shapefiles for use in 2020 Census PSAP. Use of this option ensures the proper placement of the required files for the application to access.

Participants that do not have internet connectivity, or those that have slow, unreliable internet connectivity, can load the shapefiles directly into GUPS from the “Data disc” or from a location on their computer where they saved the “Data disc” contents. Instructions on how to load shapefiles are contained in [Table 8](#).

The GUPS application unzips the files and places them into a pre-established folder created on the computer’s home directory during the installation process (e.g., H:\GUPSGIS\gupsdata\...). It then displays them in the application. GUPS manages the files for the participant. No further action is necessary. Because of this GUPS functionality, participants must not make any changes to the shapefile or folder names. The files and folders must have the exact names as provided on the “Data disc” for GUPS to recognize and load them.

IMPORTANT: Census Bureau testing of the GUPS used for PSAP has shown that large counties may take from 15 – 35 minutes for GUPS to create and build the PSAP project. Please be patient while GUPS gathers all of the necessary files and calculates the population and housing unit information.

7.2 Open GUPS and Start a New Project

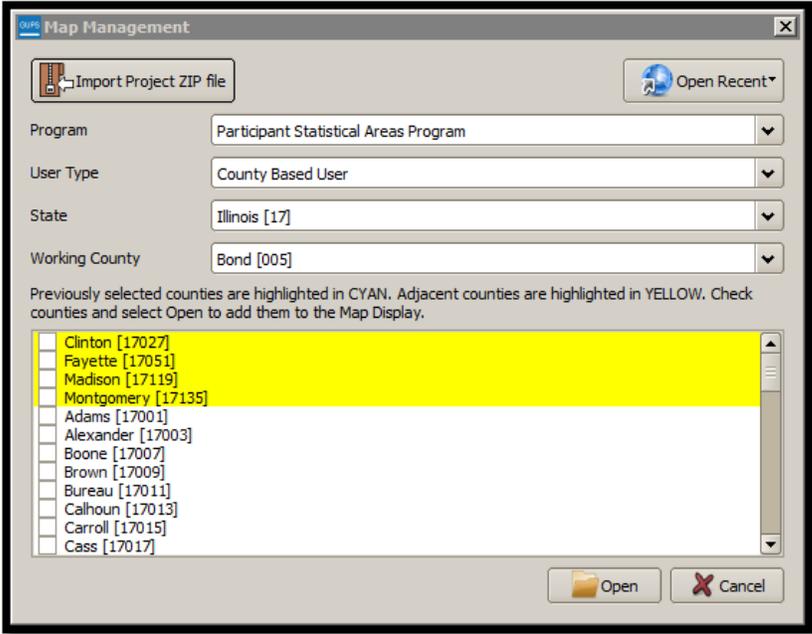
To open GUPS and begin the PSAP review, follow the steps in [Table 8](#) below. Before beginning, GUPS needs at least 3.3 gigabytes of free space on the hard drive to begin.

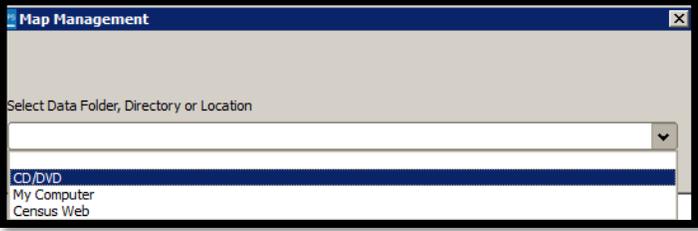
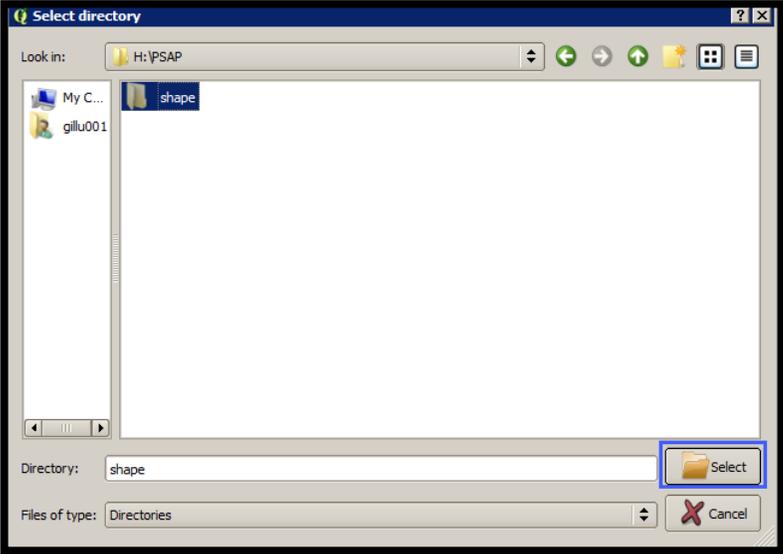
- To practice using GUPS without committing the changes, simply exit the system without saving. Before the system closes, it will provide the option to discard the changes.

- If comfortable with the GUPS, but completion of review and changes are not possible in one session, simply save the changes and close the system. Participants can reopen saved projects and continue working open GUPS later.

Table 8: Open GUPS and Start a New Project

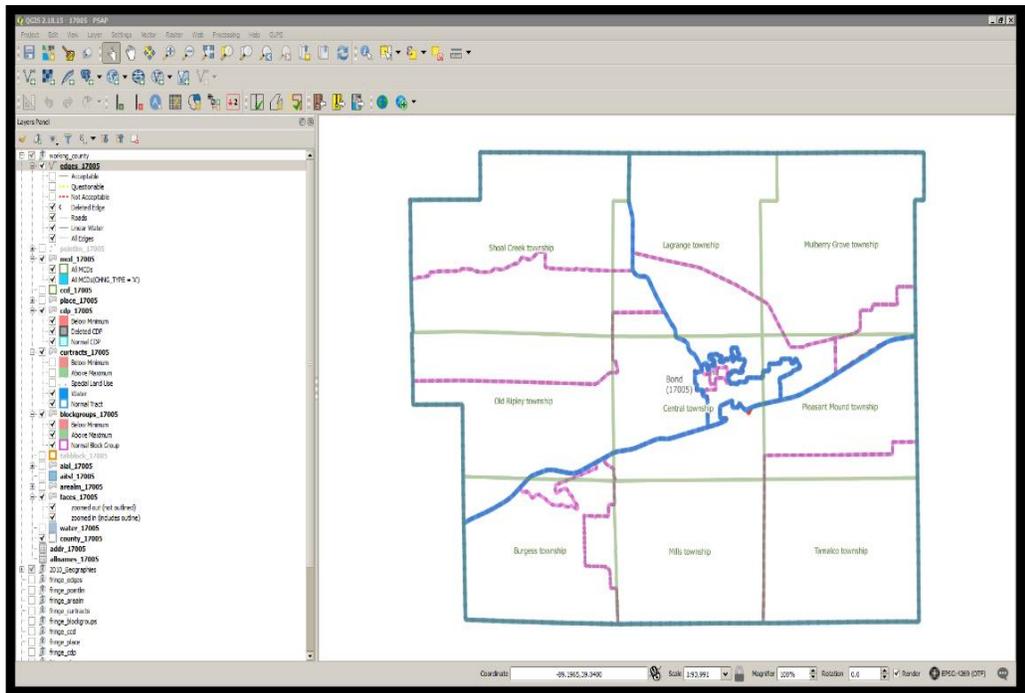
Step	Action and Result
Step 1	<p>Double click the QGIS icon on the desktop or navigate to QGIS from the Start Menu, All Programs choice and select the QGIS Desktop 2.18.15. <i>The QGIS splash screen appears.</i></p>  <p>The image shows the QGIS splash screen for version 2.18. The text 'QGIS 2.18' is prominently displayed in a large, white, sans-serif font. Below it, 'Las Palmas de G.C.' is written in a smaller, teal font. At the bottom, the text 'Setting up the GUI' is visible. The background is a grayscale topographic map of a coastal area.</p>
Step 2	<p>Wait until the application loads (An older computer may require a few minutes). When the GUPS application has successfully loaded, <i>the main page opens, and the QGIS Tips! window appears.</i></p>  <p>The image shows a dialog box titled 'QGIS Tips!'. It features the QGIS logo and the heading 'Become an QGIS translator'. The text inside asks if the user would like to see QGIS in their native language and mentions a link to the QGIS wiki translator's page. At the bottom, there is a checkbox labeled 'I've had enough tips, don't show this on start up any more!' and three buttons: 'OK', 'Previous', and 'Next'.</p> <p>Since QGIS provided the open-source platform for building GUPS, participants may see references to QGIS in several locations within the GUPS application.</p>
	<p>To view QGIS system tips, click the Next button to read the first tip. Use the Previous and Next buttons to navigate within tips. To skip the tips, click the checkbox in the bottom left-hand corner that states, <i>"I've had enough tips, don't show this on start up any more!"</i></p>

Step	Action and Result
Step 3	<p>To begin a GUPS project, close the QGIS Tips! window by clicking the OK button. <i>The tip box closes and the Map Management dialog box opens, as shown below.</i></p> <ul style="list-style-type: none"> • Choose Participant Statistical Areas Program from the Program menu. • Choose County Based User from the User Type menu. • Choose the state of the Working County from the State menu. • Choose the county to update from the Working County menu.  <p>At this point, the participant has not selected how to open these files, so <i>the window populates with all of the counties within the state</i>. The highlighted counties are the counties adjacent to the working county.</p> <p>Note: Only participants opening data using Census Web can load adjacent county into the Map View along with the working county. This adjacent county functionality will not work for participants using the “Data disc” DVD. They do not have access to the universe of counties for the entire state. Participants can only update the working county. It is not required to display the adjacent counties, but sometimes helpful in reviewing legal boundaries and CDP boundaries of those that cross county boundaries. For this review, participants do not need to load the adjacent counties and doing so likely causes GUPS performance to decrease.</p> <p>Click the Open button.</p>

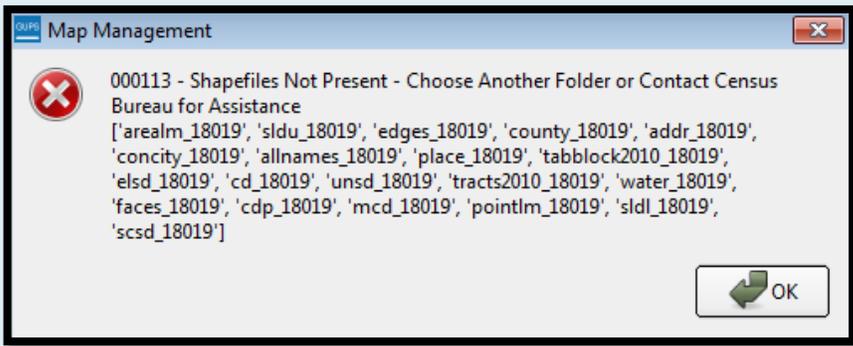
Step	Action and Result
<p>Step 4</p>	<p>After selecting the working county or adjacent counties, GUPS asks to specify the location from which to pull the county's (or county equivalent's) shapefile. <i>The Select Data Folder, Directory or Location dialog box opens.</i></p>  <p>In the Select Data Folder, Directory or Location dialog box drop-down menu, select the location to pull the working county file. This example assumes the participant is pulling the data from the CD/DVD in the drop-down menu. To download data directly into GUPS from the Census Bureau, choose Census Web (recommended) or directly from the local hard drive, choose My Computer (least recommended option).</p>
	<p>GUPS only asks to specify a location of the data the first time a participant opens a county's shapefile. When returning to work on the same county, the shapefile automatically loads, even if there were no changes in the first session.</p>
<p>Step 5</p>	<p>From the Select directory window, navigate to the location of the CD/DVD and then click the shape folder to populate the Directory field. Then click Select.</p>  <p>IMPORTANT: Participants must select the shape folder and not specific files within the folder.</p>

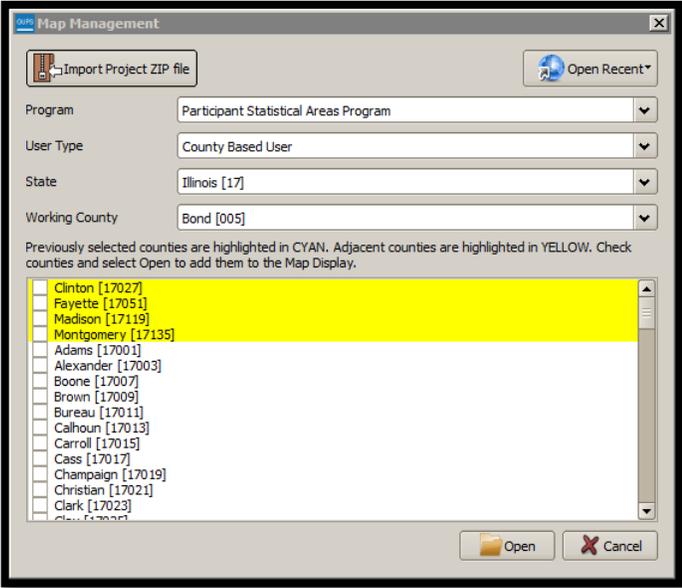
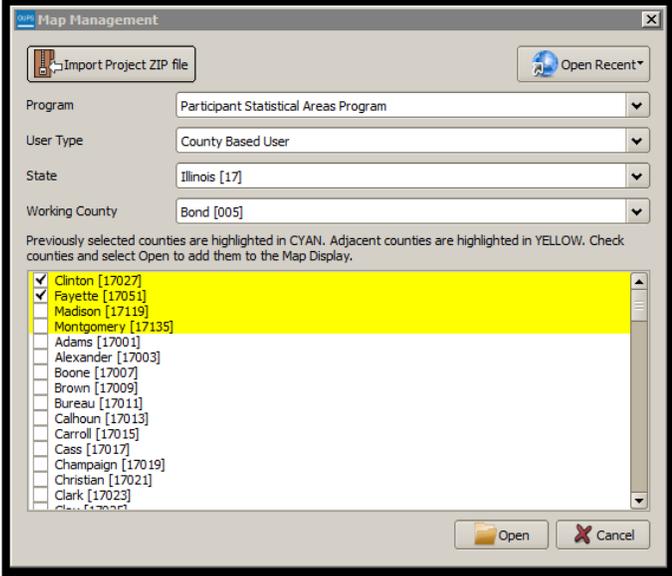
Step	Action and Result
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Step 6	<p>GUPS downloads all the shapefiles necessary for PSAP off the DVD and opens the requested working county project. GUPS displays a Map Management window that shows the progress of building the working county project and calculates the population and housing units. Progress displays by a blue status bar with the percentage of download completed shown to the right of the status bar.</p> <p>Please be patient. Based on the size of the working county, it might take some time to download the data and appear on the screen. Once downloaded, <i>the working county appears in the Map View and layers are visible within the Table of Contents.</i></p>
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	<p>If the shapefiles are missing from the directory location chosen in the Select Data Folder, Directory or Location window drop-down menu, or the files are corrupted and cannot be loaded, <i>the following error message appears</i>. Close GUPS and start the process again.</p>
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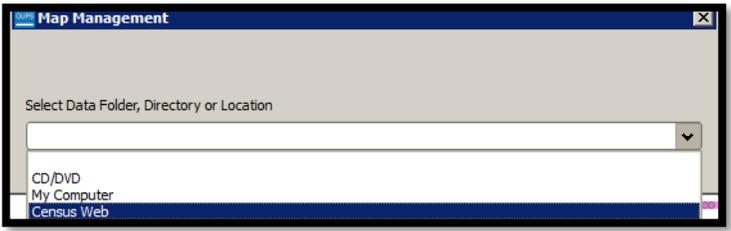


Step	Action and Result
Step 7	<p>As mentioned in Step 3 of this table, participants using the Census Web option can add the adjacent counties of the working county by clicking the Map Management button in the Standard toolbar. <i>The Map Management window displays the working county selected from the previous steps. Adjacent counties highlight in yellow in the Map Management window.</i></p>  <p>Click the boxes to the left of the highlighted counties list to select adjacent counties to download. <i>All counties with a checkmark will download and display in the Map View.</i> Unchecking a county excludes that county from the project.</p> <p>Note: Loading adjacent counties likely slows GUPS performance.</p> 

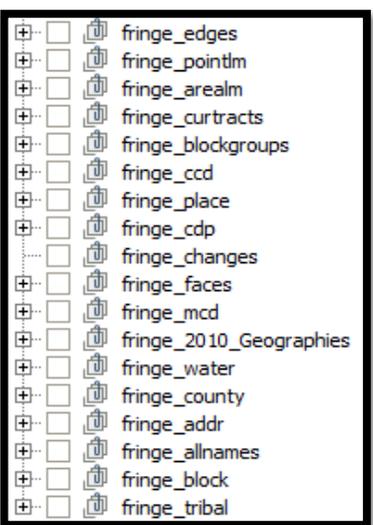
Step	Action and Result
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Step 8

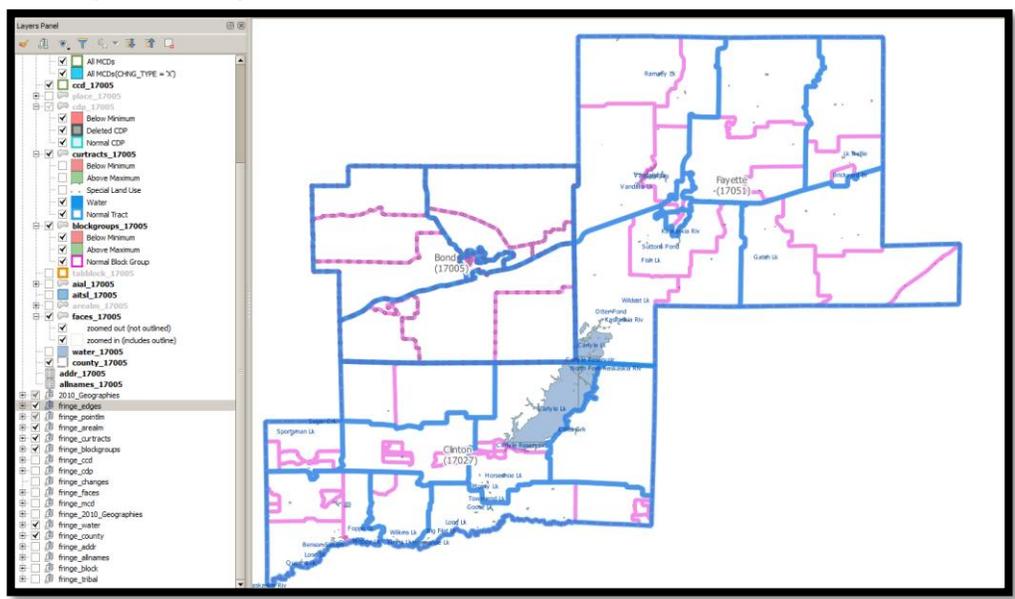
Click **Open**. From the subsequent **Map Management** window, choose **Census Web**.



GUPS downloads all the selected adjacent counties layers and places them in the **Table of Contents**, labeled as “fringe_.”



To view the layers, check the boxes to the left of the fringe layer name to activate and display the chosen layer in the **Map View**.



For this example, several fringe layers for the two previously selected adjacent counties (Clinton and Fayette) appear with working county (Bond).

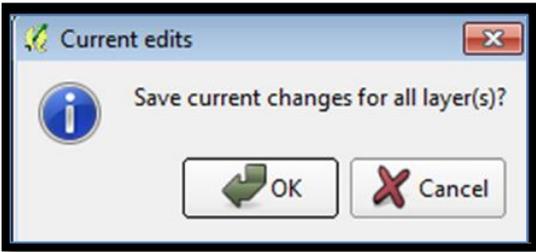
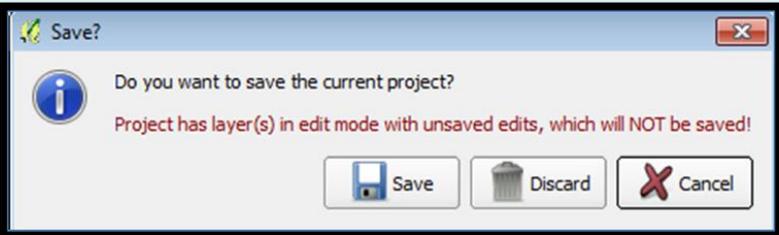
Step	Action and Result
	<p>The limit for loading counties at once is 11 (the working county plus 10 other counties). To load shapefiles for additional counties, after the first 10 are loaded:</p> <ol style="list-style-type: none"> 1. Leave the same working county selected in the Working County field. 2. Uncheck the already loaded counties in the Map Management dialog box list. 3. Check the checkboxes for the additional counties (up to 10) to add. 4. Click the Open button and after <i>the Select Data Folder, Directory or Location box opens</i>, use the drop-down menu to select the source of the files. <p>Repeat this process as many times as needed.</p>

7.3 Save a Project in GUPS

To save any PSAP updates, follow the steps in [Table 9](#). Make sure to save the project prior to exiting GUPS.

Note: The Census Bureau recommends saving often, but only after ensuring the changes are accurate. Participants cannot perform the **Undo** action discussed in [Table 12](#) and in [Table 17](#) on a change after performing a save action.

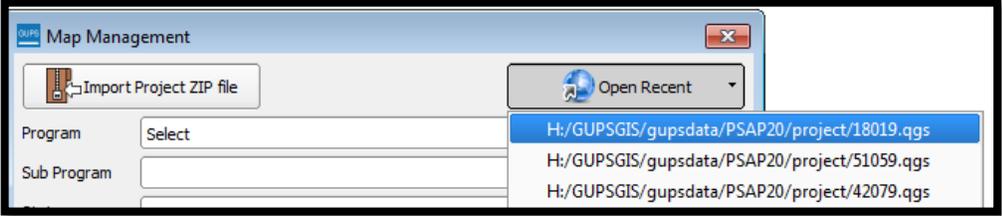
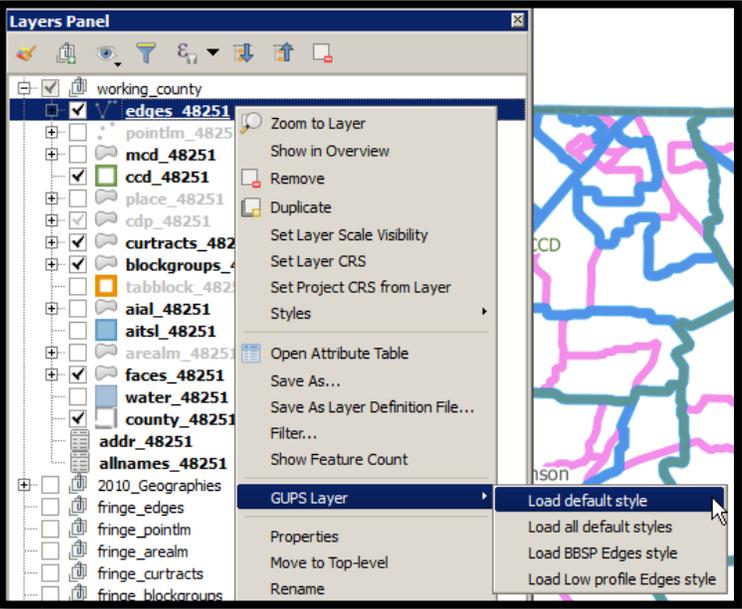
Table 9: Save a GUPS Project

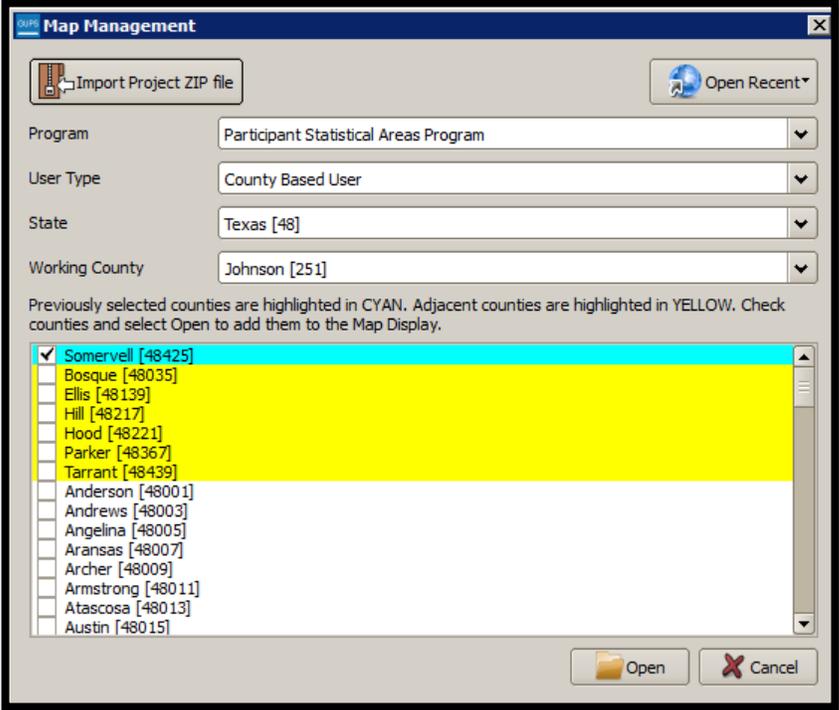
Step	Action and Result
Step 1	<p>After working on a project, be sure to Save before exiting. Otherwise, edits will be lost. To save, participants select Project from the main menu and Save from the drop-down menu or click the Save button on the Standard toolbar (as shown below).</p>  <p>Both choices result in the prompting of the Current edits confirmation dialog box.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>
	<p>To exclude changes, close the application (click the red X in the upper right-hand corner of the main GUPS page). A Save? dialog box asking to save, discard, or cancel appears.</p>  <p>Click Discard to close the application without saving the project.</p>

7.4 Open a Previous Project in GUPS

To open a previously saved PSAP project, follow the steps in [Table 10](#) below.

Table 10: Open a Previous Project in GUPS

Step	Action and Result
<p>Step 1</p>	<p>To open a previously saved project, in the Map Management dialog box, click the down arrow next to the Open Recent button. <i>The drop-down menu opens with one or more project(s) listed.</i> If the dialog box does not appear after opening GUPS, click the Map Management button in the Standard toolbar to open the dialog box shown below.</p>  <p>Note: If participants share the computer, then the potential exists for multiple projects to appear in the Open Recent list. To identify the proper project file, review the number string. This string comprises the state FIPS and county FIPS. Each state / county FIPS is 5 digits. The first two digits indicates the state FIPS code and the following three digits are the county FIPS code for the working county.</p>
<p>Step 2</p>	<p>Select the correct project file from the Open Recent list. The map for the project automatically loads and the layers show in the Table of Contents.</p>
	<p>Census Bureau-defined default layers and view settings are loaded with each new project in GUPS. Changing and saving these settings for a project saves any new settings. When reopening the project, the Table of Contents and Map View display the layers and the map according to the settings last used rather than returning to the default settings. To restore the default settings for a layer, right-click the layer in the Table of Contents. <i>A drop-down menu opens.</i> In the drop-down menu, select GUPS Layer. <i>A sub-menu opens.</i> In the sub-menu, select Load default style (see illustration below). To reset the default settings for all layers, select the second choice Load all default style.</p> 

Step	Action and Result
<p>Step 3</p>	<p>When reopening a previously saved project, note that <i>any previously selected counties highlight in cyan blue and remain checked. Adjacent counties, not previously selected, highlight in yellow.</i></p>  <p>Participants may check and load additional adjacent counties at this point if they use Census Web. Participants working from DVD are not able to load adjacent counties.</p>

CHAPTER 8. GUPS MENUS AND TOOLBARS

With the basics of GUPS outlined in [Chapter 7 Getting Started with GUPS](#), this chapter serves to introduce and provide specific details of the various GUPS menus and toolbars available for use during PSAP.

8.1 GUPS Page Layout

The image below illustrates the GUPS page layout. The yellow text boxes provide labels for the page components including the Menu and Toolbars, the Map View, the Table of Contents (labeled in GUPS as “Layers Panel”), and the Status Bar.

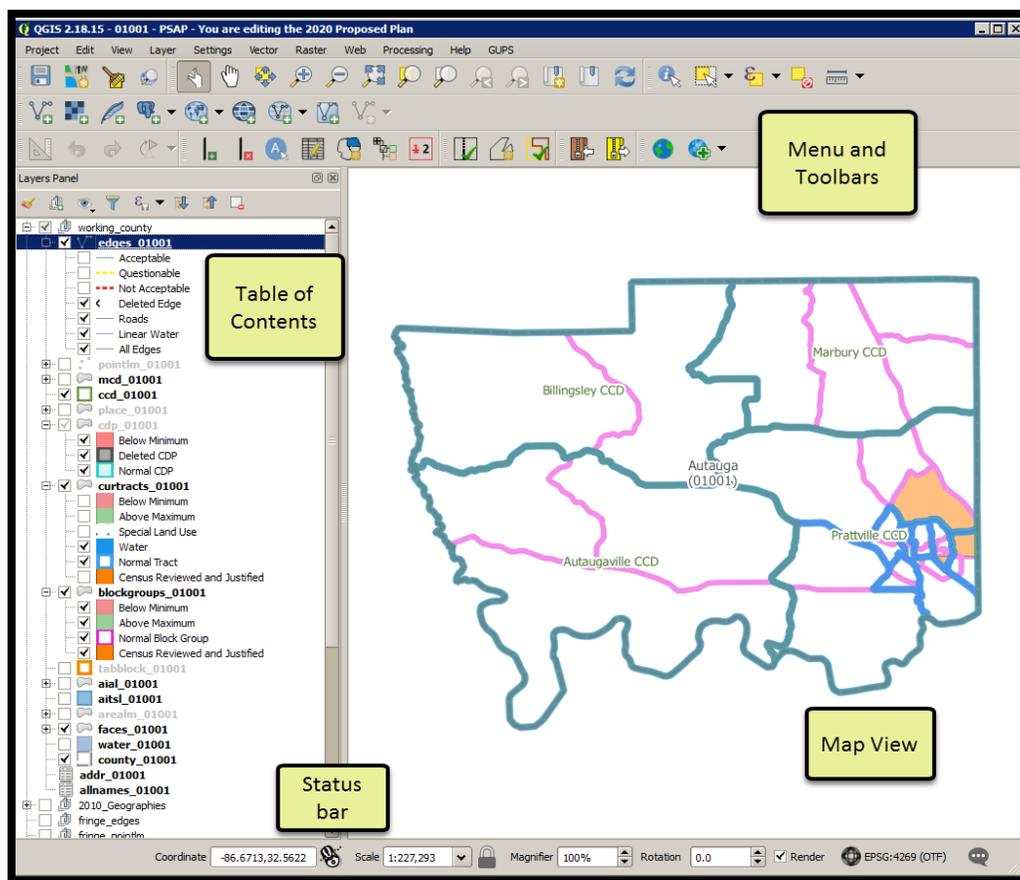
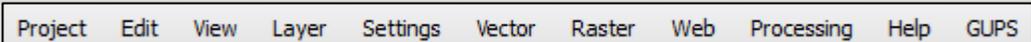
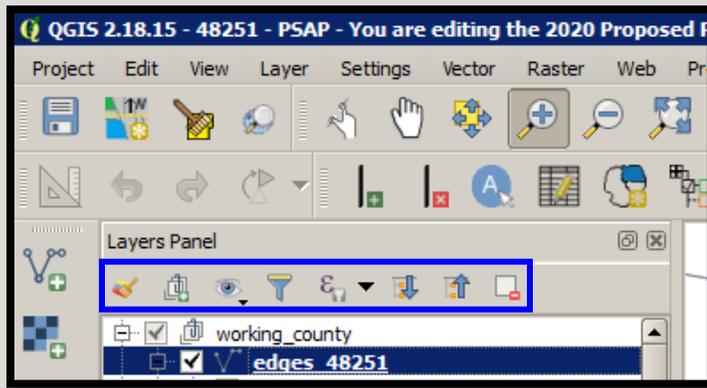


Figure 4. GUPS Page Layout

[Table 11](#) explains the purpose for each element on the main GUPS page. [Section 8.2](#) details the individual components and specific functions of each element.

Table 11: GUPS Main Page Elements

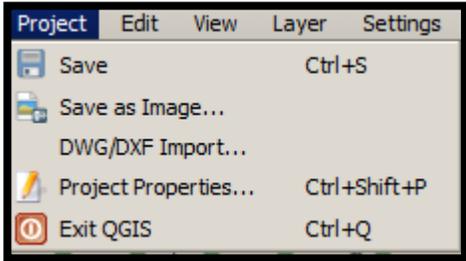
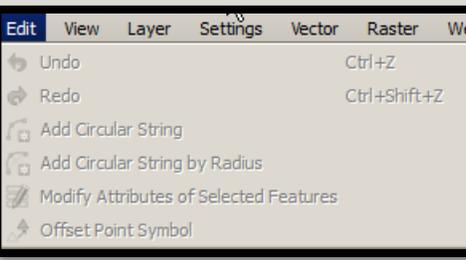
Page Element	General Function
Map View	The Map View displays the default data layers for the PSAP. GUPS automatically loads the layers based on the program selected in Map Management . The Map View reflects symbology updates (i.e. turn layers on/off, zoom or pan) as participants make those adjustments.

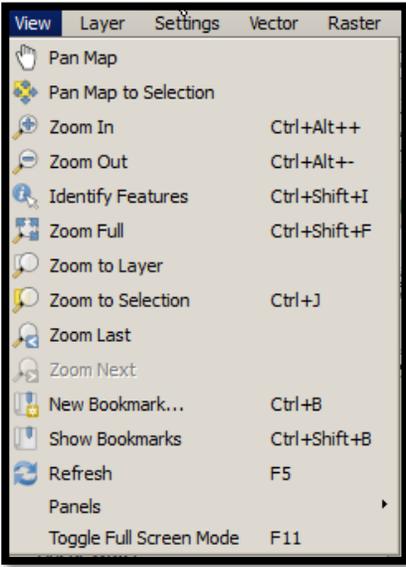
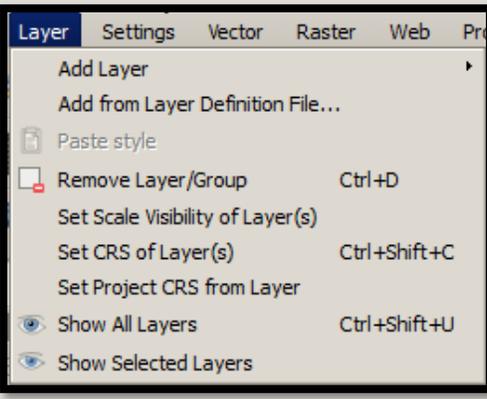
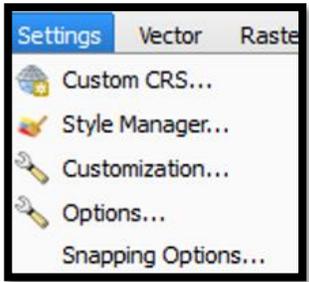
Page Element	General Function
Menu bar	<p>The Menu bar allows access to QGIS and some GUPS features using a standard hierarchical menu. It offers basic features such as Settings and Help; tools to manage the Map View and import user-provided data; important calculation, measurement, and geoprocessing tools; and tools needed to make shapefile updates. Almost all of the functions available from the Menu bar are also available in the application’s conveniently located toolbars.</p> 
Standard toolbar	<p>The Standard toolbar provides navigation tools and other tools needed to interact with the Map View and layers’ attribute tables, and data query and editing tools.</p> 
PSAP toolbar	<p>The PSAP toolbar provides software functions and the specific tools needed to make PSAP updates, view linear feature attributes, review and validate changes, import and export zipped files and print in support of PSAP.</p> 
Manage Layers toolbar	<p>The Manage Layers toolbar offers tools to import participants own data. They may superimpose map layers in GUPS to compare the features on their own maps with those on the Census shapefiles. QGIS is the source of these tools, not GUPS. Refer to the QGIS documentation for detailed definitions on their use.</p> <p>Although shown horizontally here, this toolbar may appear aligned vertically to the left of the Table of Contents in the GUPS application. Reposition it accordingly.</p> 
Table of Contents toolbar	<p>The Table of Contents shows the layers on the map for the working county selected. The Table of Contents toolbar, positioned at the top of the Table of Contents, beneath the Layer Panel, allows participants to add or remove layers (or groups), manage layer visibility, and filter the legend by map content.</p> 
Status bar	<p>The Status bar displays information on the coordinates, map scale, magnification, rotation, and projection and allows for the adjustment of the display.</p> 

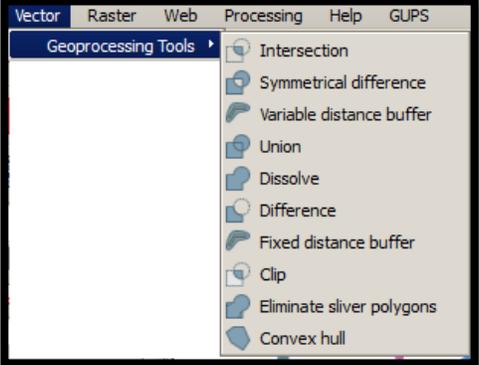
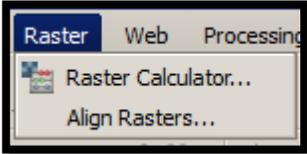
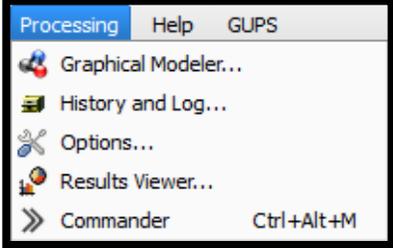
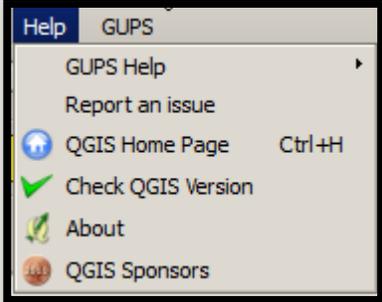
8.2 Menu Bar

The **Menu bar** includes top-level, drop-down menus and allows navigation through GUPS using a standard hierarchical menu. Most relate to QGIS functionality and not GUPS functionality. Refer to the QGIS documentation, cited in Part Two, for details on the menu and sub-menu functionality. **Table 12** provides a glimpse into the menu bar and its sub-menus.

Table 12: Menu Bar Tabs, Drop-down Menus, and Functions/Descriptions

Tab	Drop-down Menu	Function/Description
Project		<p>The Project tab allows participants to save changes to the project layers, create image files, import AutoCAD files, display project properties, and exit the GUPS application.</p>
Edit		<p>The Edit tab allows participants to undo or redo vector-editing operations. The Undo and Redo actions are dockable widgets. They activate in the Edit menu and display with orange or green icons on the Advanced Digitizing toolbar when a split, merge, and boundary change action occurs.</p> <p>IMPORTANT: Click on the edited layer (e.g., curtracts_STCOU) to make it active before performing undo or redo action. Click the Undo button to cancel an action or the Redo button to redo a recently canceled action. Use these tools before saving the change to the layer; otherwise, if the participant saves the changes after an action then the Undo and Redo functionality deactivates and the associated icons gray-out.</p> <p>Note: There is no PSAP use for the Add Circular String or Add Circular String Radius functions. These icons remain inactive in this menu.</p>

Tab	Drop-down Menu	Function/Description
View		<p>The View tab duplicates several actions available on the Standard toolbar. Included are options for navigating the map, identifying feature attributes, measuring distance, and creating spatial bookmarks to return to the same Map View later. Refresh restores the map to its original map extent. Panels changes the layer order, browses to a location on the computer to add additional layers, opens the processing toolbox, and more. If not visible or closed earlier, click Panels in the drop-down menu, then click the right arrow, and click Layers in the Layers drop-down-menu to restore the Table of Contents. The Toggle Full Screen Mode expands GUPS to fill the entire screen. Selecting it again, removes the full screen mode.</p>
Layer		<p>The Layer tab adds and removes layers from the map, opens the layer attribute table, sets the map projection or Coordinate Reference System (CRS), displays or hides layers.</p> <p>Note: Many of these same functions are located on the Manage Layers toolbar and the small toolbar at the top of the Table of Contents. Some of these actions are available from the Table of Contents toolbar.</p>
Settings		<p>The Settings tab allows participants to customize the CRS and map display options and set snapping tolerances (see instructions below this table).</p> <p>Note: Snapping tolerances in GUPS are pre-defined by layer (e.g., the default tolerance for edges is set to 15 pixels). When making corrections, participants may want to adjust the snapping tolerances for a layer or layers within this same menu. Locate the definition of edges in Appendix A.</p>

Tab	Drop-down Menu	Function/Description
Vector		<p>The Vector tab provides access to several tools that aid in the creation of buffers around features; overlay areas to create an intersection, union, or symmetrical difference; merge features; and perform other common geoprocessing actions.</p>
Raster		<p>The Raster tab provides access to a Raster Calculator that allows for the calculation of existing raster pixel values. The results of which are written to a new raster layer with a GDAL-supported format. The Align Rasters tool is able to ingest several rasters as input and align them perfectly by performing several actions including reprojection, resampling, clipping, and rescaling. It saves all rasters to a separate file. These tools are QGIS based and not used for PSAP work in GUPS.</p>
Web		<p>The Web tab provides access to MetaSearch, an easy and intuitive approach and user-friendly interface to searching metadata catalogues within QGIS.</p>
Processing		<p>The Processing tab includes several tools; however, these are not required for Census Bureau geographic program participation. The sub-menus pertain to algorithms, creating models, viewing the results of algorithms executed, and history.</p>
Help		<p>The Help tab provides tools for understanding QGIS (the open-source platform on which GUPS was developed), the GUPS application itself and allows participants to report an issue with the software. The GUPS Help sub-menu, routes participants to the PSAP website.</p>

Tab	Drop-down Menu	Function/Description
GUPS		<p>The GUPS tab provides quick access to the key tools also available on the Standard toolbar and PSAP toolbar, including those needed to manage maps.</p> <p>Click the About GUPS option in the drop-down menu to find the GUPS version number. Callers to technical support need to provide this number.</p>

8.3 Map View and Table of Contents

GUPS automatically loads a set of default data layers (and default layer groups) defined by the Census Bureau for the program and geography selected in the **Map Management** dialog box. As the map opens in the **Map View**, the list of the preset layers (already grouped) appears in the **Table of Contents**.

Note: Participants may also see the **Table of Contents** labeled as the **Layer Panel** within GUPS. The two are synonymous and reflect what others often call a Legend.

Participants use the **Table of Contents** and the **Table of Contents toolbar** to manage the **Map View**. These two windows are interdependent. Selections made in the **Table of Contents** reflect immediately in the **Map View**.

To close the **Table of Contents**, click the small 'x' in the upper right corner of the Layer Panel. To restore the **Table of Contents**, click the **View** tab on the **Menu bar**, select **Panels** in the drop-down menu, click the arrow next to Panel to open the sub-menu, and click **Layers Panel**. Toggling the Layer Panel on and off may be helpful for providing a larger **Map View** window.

8.3.1 Table of Contents Toolbar

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



Figure 5. Table of Contents Toolbar

The **Table of Contents toolbar** contains the items shown above in [Figure 5](#) with descriptions provided below in [Table 13](#).

Table 13: Table of Contents Toolbar Buttons, Names, and Functions/Descriptions

Button	Name	Function/Description
	Open the Layer Styling Dock	Click the Open the Layer Styling Dock button to toggle the layer styling panel on and off.

Button	Name	Function/Description
	Add Group	Click the Add Group button to organize layers in the Table of Contents into groups.
	Manage Layer Visibility	Click the Manage Layer Visibility button to preset views in the Table of Contents .
	Filter Legend by Map Content	Click the Filter Legend by Map Content button to remove layers from the Table of Contents that are not currently in the Map View extent. This feature ensures that the Table of Contents does not contain entries for items not currently in the Map View .
	Filter Legend by Expression	Click the Filter Legend by Expression button to remove features from the selected layer tree style that have no features satisfying the condition. Used to highlight features within a given area/feature of another layer. Drop-down list allows participants to edit or clear the expression set.
	Expand All	Click the Expand All button to expand the Table of Contents menus (+) to display all layers under each group's menu.
	Collapse All	Click the Collapse All button to collapses the Table of Contents menus (-) to show only groups.
	Remove Layer/Group	Click the Remove Layer/Groups button to remove a layer or group from the Table of Contents .

8.3.2 Managing the Map View from the Table of Contents

Within the **Table of Contents**, participants can manage layer visibility (i.e., determine what layers display on the map), reorder data layers, expand and condense the layer's/layer groups, add labels to layers, and change the layer scale visibility. The following five sub-sections explain these topics. Though not recommended for the pre-loaded layers, participants can also set new layer symbology within the **Layer Properties, Style menu**. This section does not detail this process, but [Figure 11](#) depicts the menu.

8.3.2.1 Manage Layer Visibility

To add or remove layers from the **Map View**, click the checkbox next to a layer to add it to the **Map View** as shown in [Figure 6](#). Uncheck the checkbox next to a layer to remove it from the **Map View** as shown in [Figure 7](#). Both illustrate the manipulation of the “edges” layer.

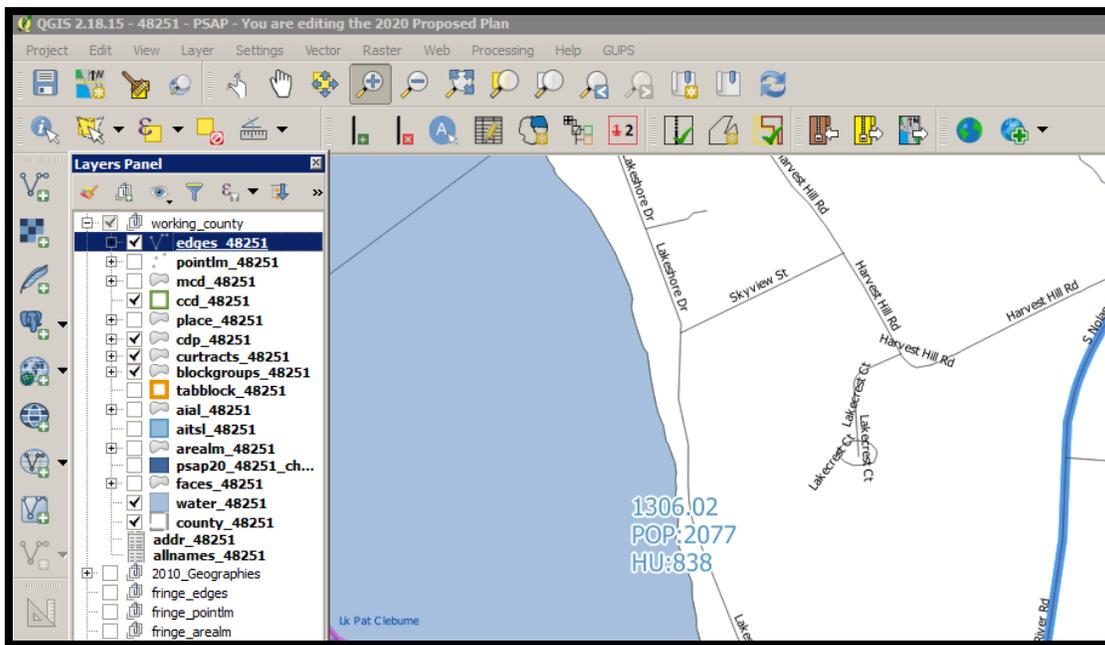


Figure 6. Check a Checkbox to Add a Layer

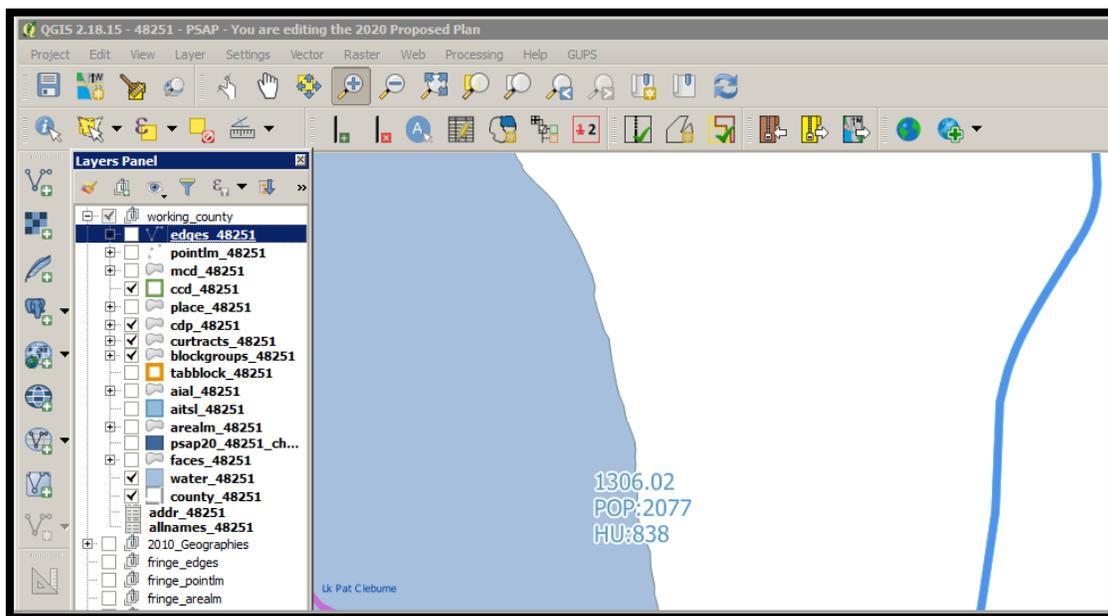


Figure 7. Uncheck a Checkbox to Remove a Layer

Participants can also right-click the name of the layer and select **Remove** in the drop-down menu, as shown in [Figure 8](#), to remove the entire layer from the project. Though shown for this example to illustrate the presence of the button, the GUPS PSAP project includes all layers necessary to conduct a review and update. Please use the checkbox to manage the visibility of any preloaded layers rather than removing them from the project. The **Remove** action may be helpful for removing external data added by the PSAP participant.

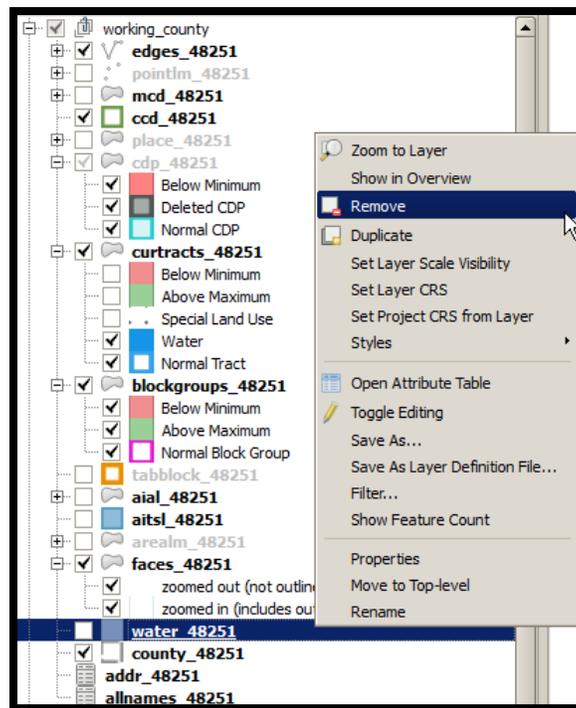


Figure 8. Highlight Layer and Right Click to Remove

8.3.2.2 Reorder Data Layers

In the **Table of Contents**, the layer order determines how the layers display on the map. The top layers display on top of those below them. This is very important for conducting a review of the 2020 proposed plan in comparison to the 2010 statistical geographies. To change the display order:

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

8.3.2.3 Expand/Condense Layers or Layer Groups

To expand or contract the menu for a layer or layer group, click on the '+' sign to expand the group and, once expanded, click the '-' sign to condense the group. These individual functions allow for a more specific management of layers than the **Expand All/Collapse All** buttons on the **Table of Contents** toolbar.

8.3.2.4 Add Labels to Layers

Participants may notice that many of the standard geographies layers (e.g., census tracts and block groups specifically) are labeled as part of the creating the project in GUPS. Other layers do not automatically label. This section informs participants how to label the edges layer.

From the **Table of Contents**, right-click the name of the layer and select **Properties** in the drop-down menu, as shown in [Figure 9](#) and left-click to open the layer properties window. This opens the Layer Properties window shown in [Figure 10](#).

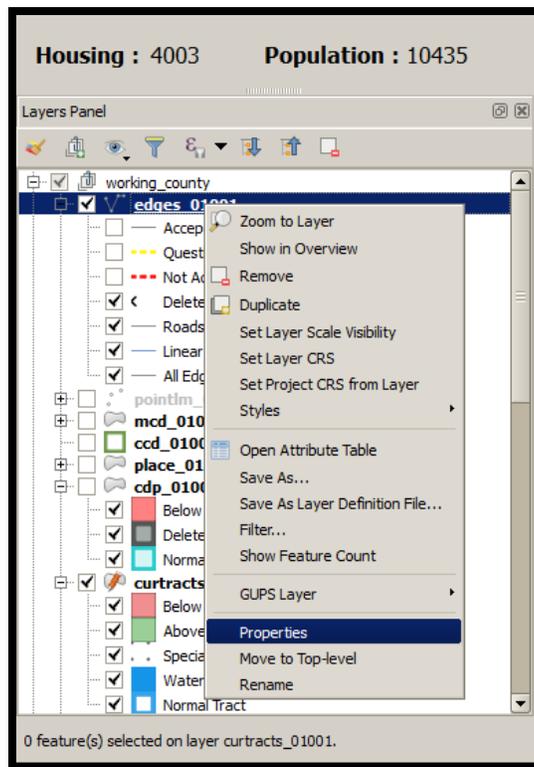


Figure 9. Layer Properties Menu

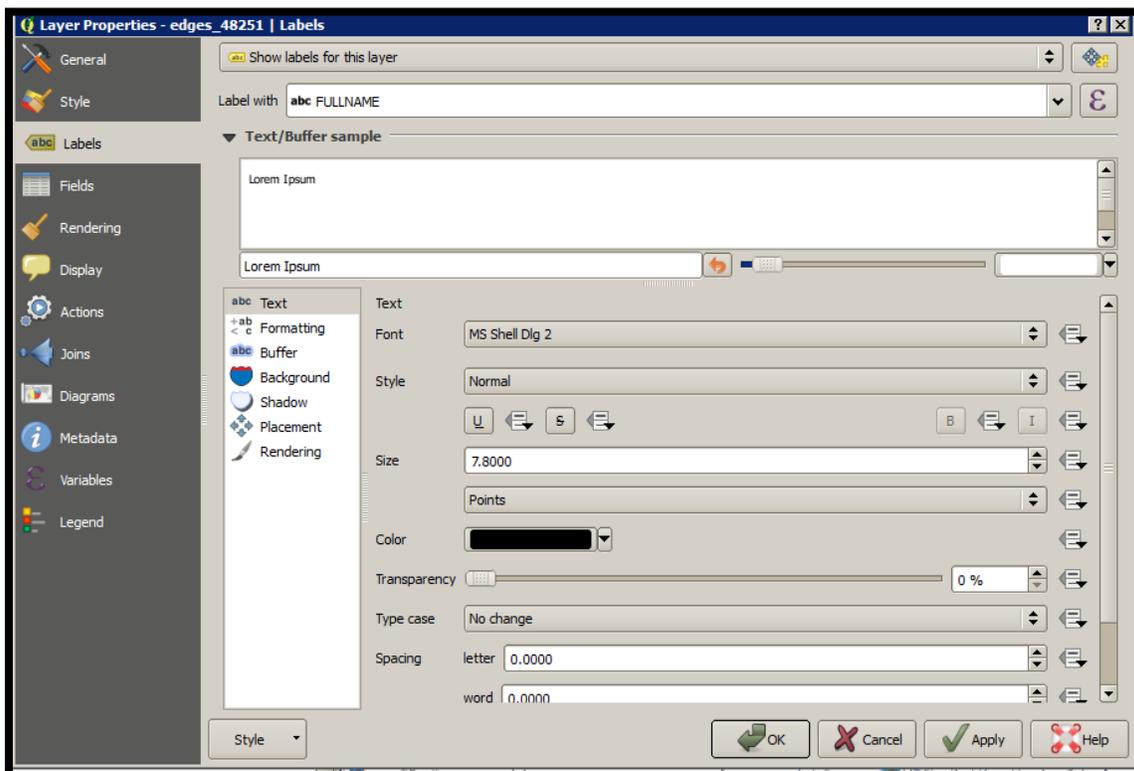


Figure 10. Layer Properties Window – Labels Menu

Click the **Labels** menu on the left side of the window. Choose **Show labels** for this layer from the drop-down menu along the top of the window. From the **Label with** section, select the field to use for labeling the layer's features. In this example, choose **FULLNAME**. Participants can customize the labels Font, Style, Size, Color, Transparency level, Type case, Spacing, Blend mode, etc. and set formatting, buffers, backgrounds, shadows, placement, and rendering options. Click **Apply** and then **OK** to exit the window.

8.3.2.5 Change Layer Scale Visibility

From the **Table of Contents**, right-click the name of the layer and select **Properties** in the drop-down menu, as shown in [Figure 9](#) and left-click to open the layer properties window. This opens the **Layer Properties** window shown in [Figure 11](#).

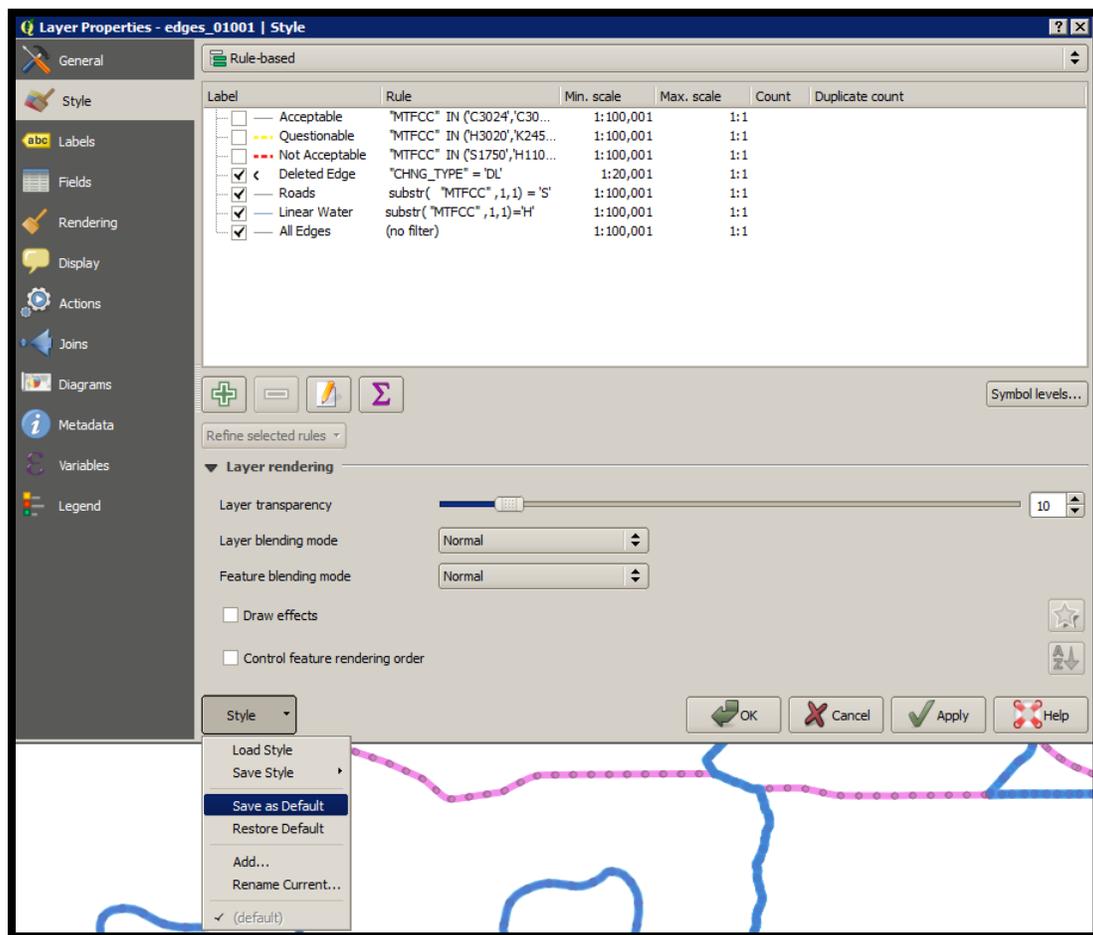


Figure 11. Layer Properties Window – Style Menu

Click the **Style** menu on the left side of the window. Choose each row, or all rows, to change the **Min. Scale** field to an appropriate scale. At the bottom left of the window, within the **Style** drop-down, choose **Set as Default**. Click **Apply** and then **OK** to exit the window. Setting the layer visibility means the layer will not display until reaching a scale below the set Min. Scale.

Note: Participants can also set the scale dependent visibility in the **General** menu within the **Layer Properties** window by setting the **Minimum (exclusive)** value.

8.4 Toolbars

There are two toolbars for GUPS, as shown below. The **Standard toolbar** and **PSAP toolbar** are located at the top of the GUPS page. These toolbars offer general GIS and system tools and allow participants to make specific program updates. The top toolbar is the **Standard toolbar**, which provides map navigation, data query and manipulation tools. The **PSAP toolbar** provides the functionality needed for the PSAP.

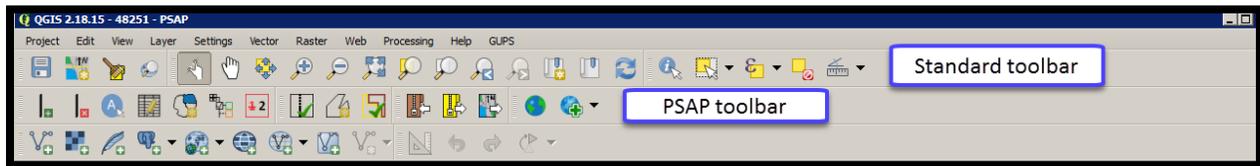


Figure 12. GUPS Toolbars

Note: Participants may move the toolbars and re-dock them to their own preference. For example, if a participant prefers that the **Manage Layers toolbar**, discussed in a later section, to appear at the top of the page, they can drag it there. This allows for the expansion of the area available for the **Table of Contents** and the **Map View**.

Hover the mouse over any toolbar button to see the name of the tool it represents. The next section describes the **Standard toolbar**.

8.4.1 Standard Toolbar

The **Standard toolbar**, shown in [Figure 13](#), provides the necessary tools to interact with the map and layers. It includes three separate sub-toolbars, identified by the grouping bars or marker on the toolbar, shown in [Figure 14](#). The first sub-toolbar contains the buttons for saving projects, changing map projects and conducting searches. This sub-toolbar is the **Project toolbar**. The second sub-toolbar contains the buttons for navigation. This sub-toolbar is the **Map Navigation toolbar**. The third sub-toolbar provides tools for selecting features, making measurements, creating special bookmarks, and working with the layer's attribute tables. It is the **Attributes toolbar**.



Figure 13. Standard Toolbar

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



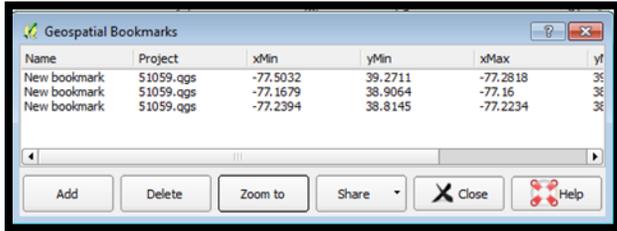
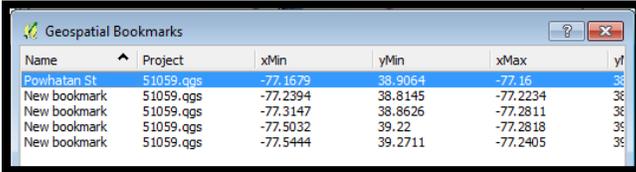
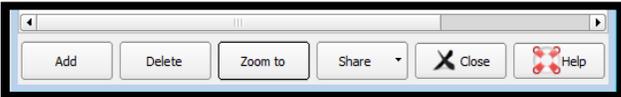
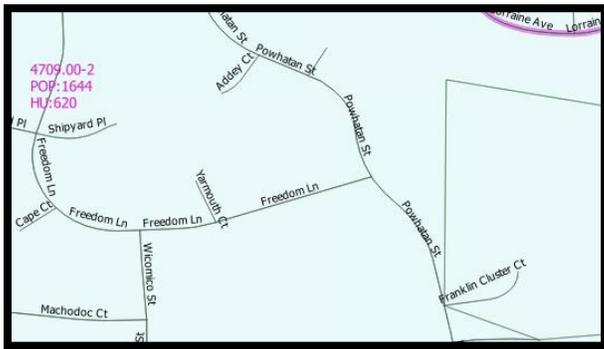
Figure 14. Sub-Toolbar Markers

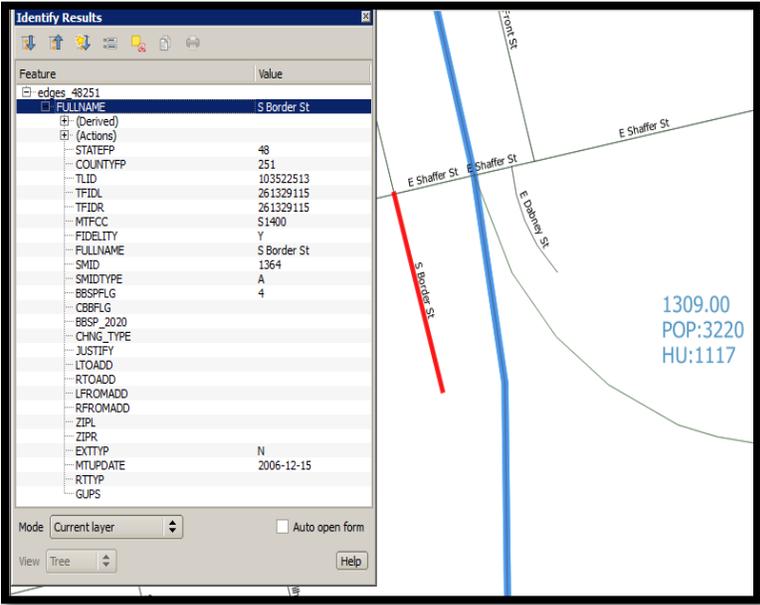
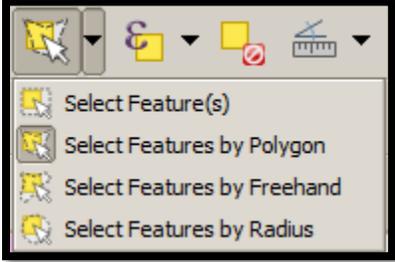
Table 14 defines the purpose of each button on the **Standard toolbar**. A few of the buttons listed in the table include examples or links to additional tables for further explanation of the button.

Table 14: Standard Toolbar Buttons, Names, and Functions/Descriptions

Button	Name	Function/Description
Project Toolbar Grouping		
	Save	Click the Save button to save the current project, including any change to the layer properties, projection, view extent, and layers.
	Map Management	Click the Map Management button to choose the participant program in GUPS and the county to update. GUPS automatically loads a set of default data layers for the chosen program.
	GUPS Data Settings	<p>Warning! This tool deletes files and folders permanently! Click the GUPS Data Settings button to <i>open the GUPS Data Settings window</i>. Click the Options drop-down menu and select Clean by Project.</p> <div> </div> <div> </div> <p>From the list that returns, check the box to the left of the project name to select it for deletion. Click OK to continue. <i>GUPS displays a warning message to confirm the action removes files and folders permanently.</i> Clean-ups of the current session (highlighted in red in the choices list) cause GUPS to close.</p> <p>Note: This list could include more than one project if a participant has multiple counties in their workload.</p> <div> </div> <p>Click OK to proceed with deletion.</p>

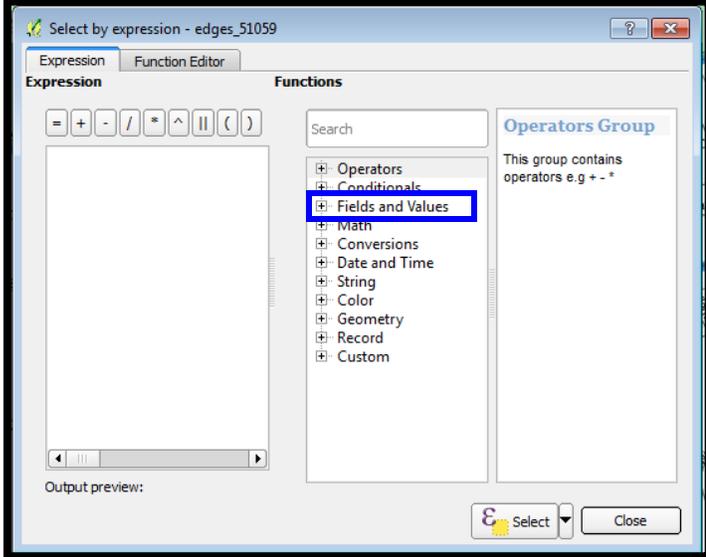
Button	Name	Function/Description
	Search and Zoom	<p>Click the Search and Zoom button to search the map by census tract, block group, census designated place, census county division (if applicable), or street name.</p> <div> </div> <p>After selecting the Search by choice, a subsequent selection field appears for the participant to choose the specific value to search for in the working county (e.g., Census Tract). Once selected, click the Find or Find and Close button to zoom and center the Map View on the selection.</p>
Map Navigation Toolbar Grouping		
	Touch Zoom and Pan	Click the Touch and Zoom button to zoom and pan using finger gestures on a touchscreen computer. This functionality also works with the roller ball on the mouse.
	Pan Map	Click the Pan button to re-center the map in the Map View at the location clicked in the map while preserving the map scale.
	Pan Map to Selection	Click the Pan to Selection button after selecting a feature on the map (or in the attribute table) to re-center the map based on the selected feature(s).
	Zoom In	Click the Zoom In button to increase the map scale after clicking on the map and to display the map in Map View at a larger scale.
	Zoom Out	Click the Zoom Out button to decrease the map scale after clicking on the map and to display the map in Map View at a smaller scale.
	Zoom Full	Click the Zoom Full button to display the map at the full extent of the county.
	Zoom to Selection	Click the Zoom to Selection button after selecting a feature on the map (or in the attribute table) to view the feature at the scale of the selected feature.
	Zoom to Layer	Click the Zoom to Layer button after selecting a layer in the Table of Contents to display the map at the extent of the selected layer.
	Zoom Last	Click the Zoom Last button to return to the previous zoom extent.
	Zoom Next	Click the Zoom Next button to move forward to the next zoom extent.

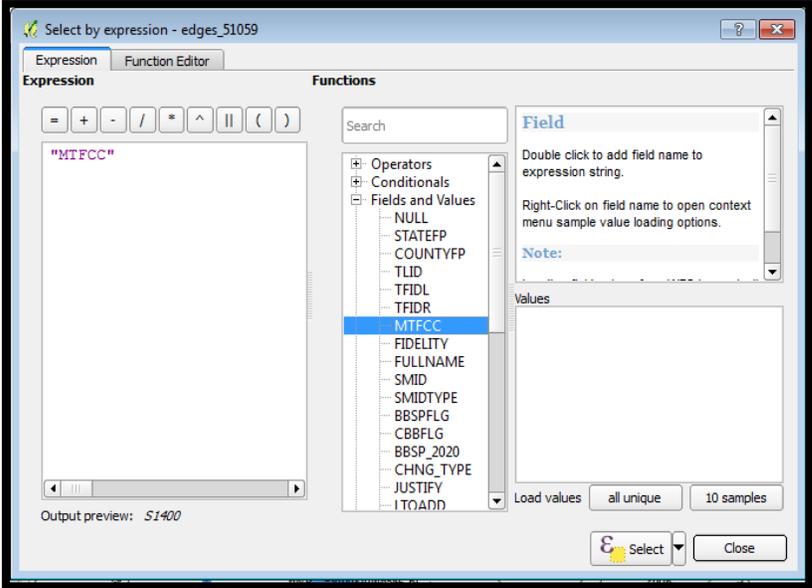
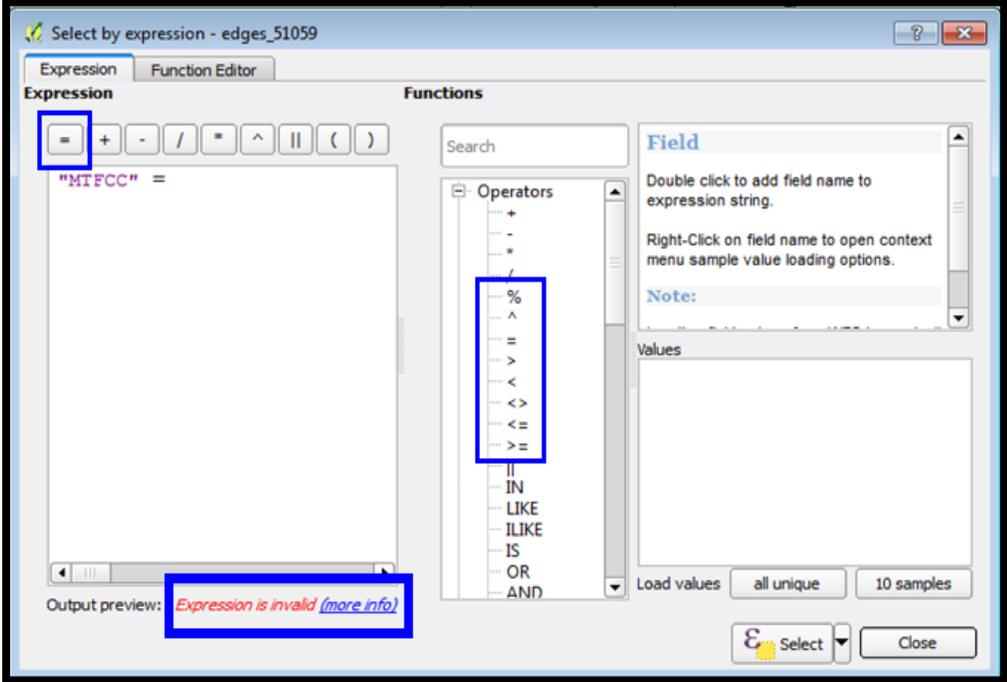
Button	Name	Function/Description
	<p>New Bookmark</p>	<p>Click the New Bookmark button to create, name, and save geographic locations in the Map View for future reference.</p> <p>To create and save a geographic location, first zoom to the location to bookmark and then select New Bookmark. <i>The Geospatial Bookmarks window opens.</i></p>  <p>Click on a row named New bookmark, backspace over the name “New bookmark” to delete the name, and enter a descriptive name for the bookmark (255-character limit). Click the Close button to add the new bookmark.</p>
	<p>Show Bookmarks</p>	<p>Click the Show Bookmarks button to view and manage the bookmarks.</p>  <p>To zoom to a bookmark, click on a bookmark name in the Geospatial Bookmarks dialog box and then click the Zoom to button.</p>  <p><i>The Map View zooms to the bookmark.</i></p>  <p>To delete a bookmark, click a bookmark name and click the Delete button.</p>
	<p>Refresh</p>	<p>Click the Refresh button to refresh the screen at its current extent.</p>

Button	Name	Function/Description																																																										
Attributes Toolbar Grouping																																																												
	Identify Features	<p>Click the Identify Features button, followed by a click on a feature on the map, to identify the feature. <i>The selected feature appears in red in the Map View and the results appear in the Identify Results window.</i></p>  <table border="1"> <thead> <tr> <th>Feature</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>edges_48251</td> <td></td> </tr> <tr> <td> FULLNAME</td> <td>S Border St</td> </tr> <tr> <td> (Actions)</td> <td></td> </tr> <tr> <td> STATEFP</td> <td>48</td> </tr> <tr> <td> COUNTYFP</td> <td>251</td> </tr> <tr> <td> TLID</td> <td>103522513</td> </tr> <tr> <td> TFIDL</td> <td>261329115</td> </tr> <tr> <td> TFIDR</td> <td>261329115</td> </tr> <tr> <td> MTFCC</td> <td>S1400</td> </tr> <tr> <td> FIDELITY</td> <td>Y</td> </tr> <tr> <td> FULLNAME</td> <td>S Border St</td> </tr> <tr> <td> SMD</td> <td>1364</td> </tr> <tr> <td> SMDTYPE</td> <td>A</td> </tr> <tr> <td> BSSPFLG</td> <td>4</td> </tr> <tr> <td> CBBFLG</td> <td></td> </tr> <tr> <td> BSSP_2020</td> <td></td> </tr> <tr> <td> CHNG_TYPE</td> <td></td> </tr> <tr> <td> JUSTIFY</td> <td></td> </tr> <tr> <td> LTOADD</td> <td></td> </tr> <tr> <td> RTOADD</td> <td></td> </tr> <tr> <td> LFROMADD</td> <td></td> </tr> <tr> <td> RFROMADD</td> <td></td> </tr> <tr> <td> ZIPL</td> <td></td> </tr> <tr> <td> ZIPR</td> <td></td> </tr> <tr> <td> EXTTYP</td> <td>N</td> </tr> <tr> <td> MTUPDATE</td> <td>2006-12-15</td> </tr> <tr> <td> RTTYP</td> <td></td> </tr> <tr> <td> GUPS</td> <td></td> </tr> </tbody> </table>	Feature	Value	edges_48251		FULLNAME	S Border St	(Actions)		STATEFP	48	COUNTYFP	251	TLID	103522513	TFIDL	261329115	TFIDR	261329115	MTFCC	S1400	FIDELITY	Y	FULLNAME	S Border St	SMD	1364	SMDTYPE	A	BSSPFLG	4	CBBFLG		BSSP_2020		CHNG_TYPE		JUSTIFY		LTOADD		RTOADD		LFROMADD		RFROMADD		ZIPL		ZIPR		EXTTYP	N	MTUPDATE	2006-12-15	RTTYP		GUPS	
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	Select Feature(s) by Area or Single Click	<p>Click the Select Feature(s) by Area or Single Click button to select layer features in the map window with a single click, dragging a box, or drawing graphics on the screen.</p>  <p>To select a single feature, click the Select Features button, choose Select Feature(s) from the drop-down menu, and click the feature on the map. To select multiple features, hold down the Ctrl key while selecting more than one feature. To remove one or more features from a selection of multiple features, hold down the Ctrl key and click the feature(s) again. Participants can also use Select Features by Polygon, Select Features by Freehand, and Select Features by Radius tools to select multiple features using graphics they draw on the screen.</p>																																																										
	Select Features Using an Expression	<p>Click the Select Features Using an Expression button to select features by querying the attribute table based on table fields and/or values in the fields. See Table 15 for an example of using the Select Features Using an Expression tool to view the features in the edges layer that have an MTFCC code of P0001.</p>																																																										

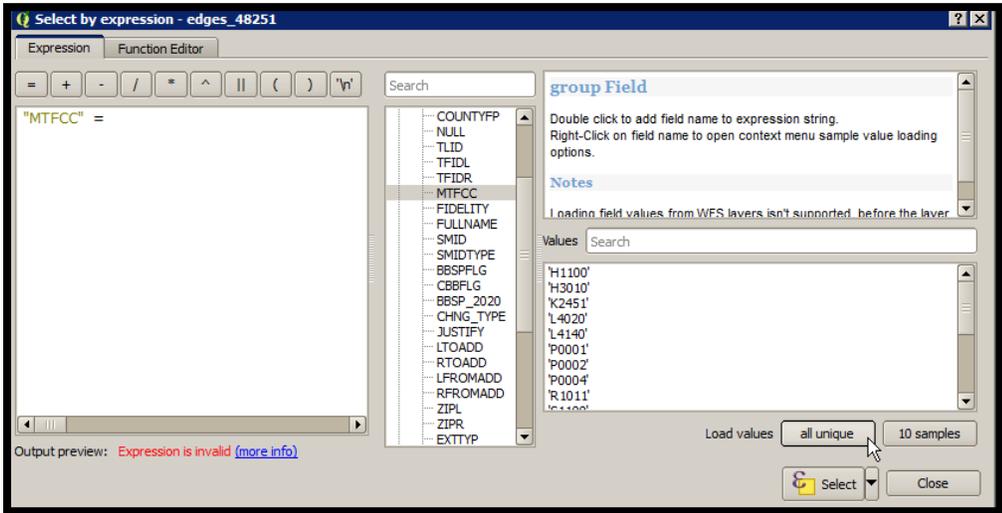
Button	Name	Function/Description
	Deselect Features from All Layers	Click the Deselect Features from all Layers button to deselect the selected features in all layers in a single action.
	Measure	Click the Measure button to measure the distance between two or more points, an area, or an angle on a map. See Table 16 for examples of using the Measure tool.

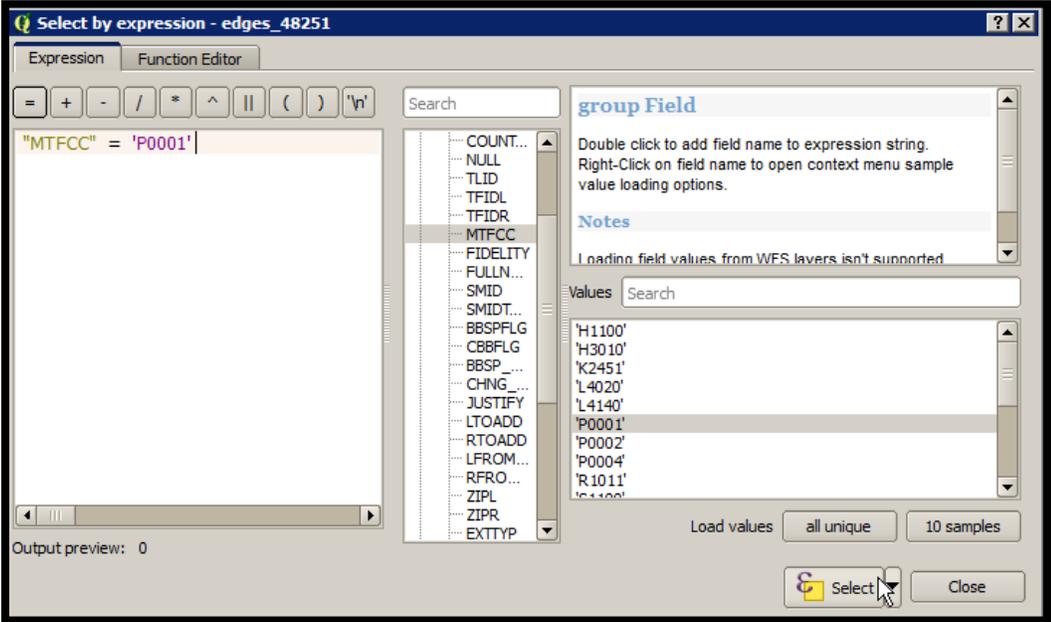
Table 15: Select Features Using an Expression Button

Step	Action and Result
Step 1	<p>With the edges layer selected in the Table of Contents, click the Select Features Using an Expression button on the Standard toolbar.</p> 
Step 2	<p>The <i>Select by Expression</i> dialog box opens. Click on the '+' next to Fields and Values to expand it.</p> 

Step	Action and Result
<p>Step 3</p>	<p>Double click on a field name to add it to the Expression window. This example depicts the selection of the MAF/TIGER Feature Classification Code (MTFCC) field and its field name appearance in the Expression window.</p> 
<p>Step 4</p>	<p>Single click on an operator button to add it to the Expression window. <i>In this example, the “=” was chosen.</i></p> <p>Note: There are more operators available than those shown above the Expression window. Click the Operators menu in the center window of the dialog box to see additional options, including commonly used expressions such as <, >, <=, >=.</p>  <p>For this screenshot, notice the Output preview: message below the window indicates the expression is invalid because the value for the expression is missing.</p>

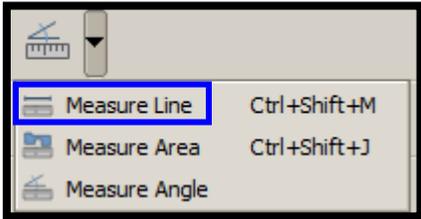
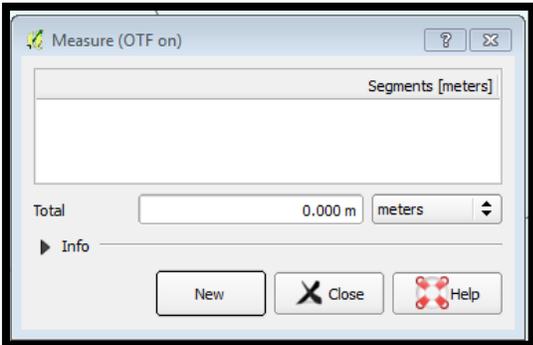
Step	Action and Result
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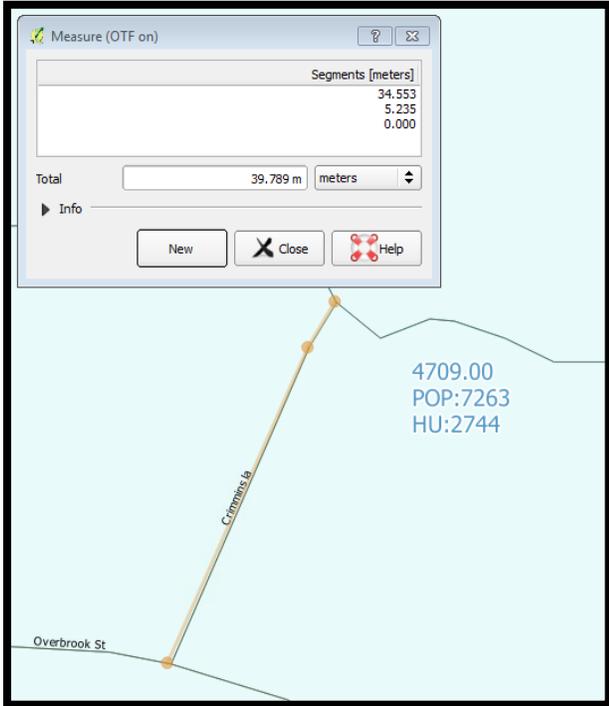
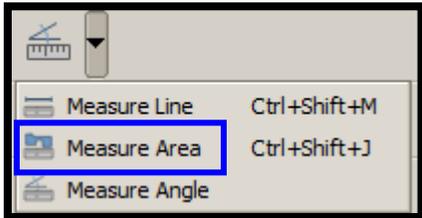
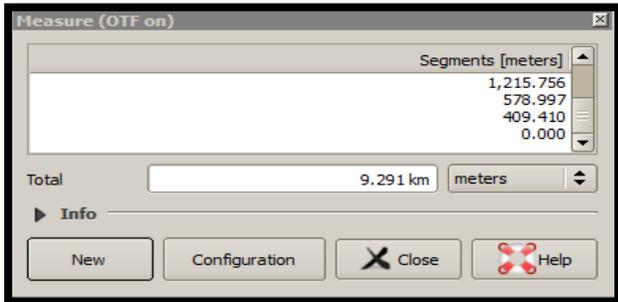
Step 5	<p>Reselect MTFCC. Click the Load values - all unique button, which shows all of the values for the chosen field name. Double click a value to <i>add it to the Expression window</i>.</p> <p>For more information about MTFCC codes, please refer to Appendix F or the following webpage: http://www.census.gov/geo/reference/mtfcc.html.</p> 
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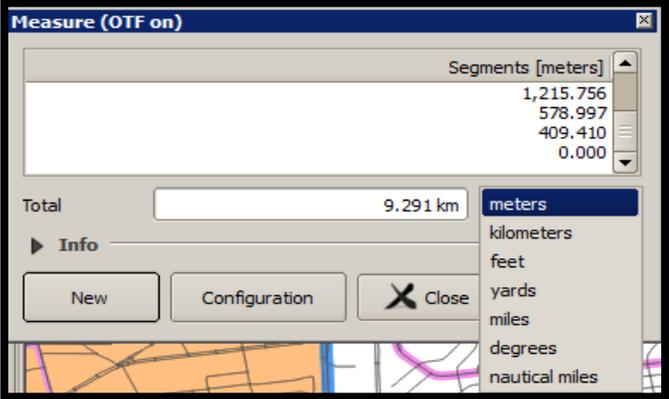
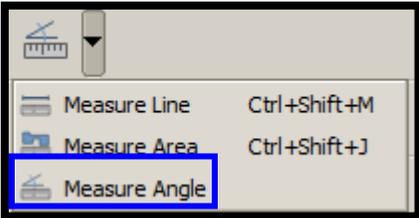
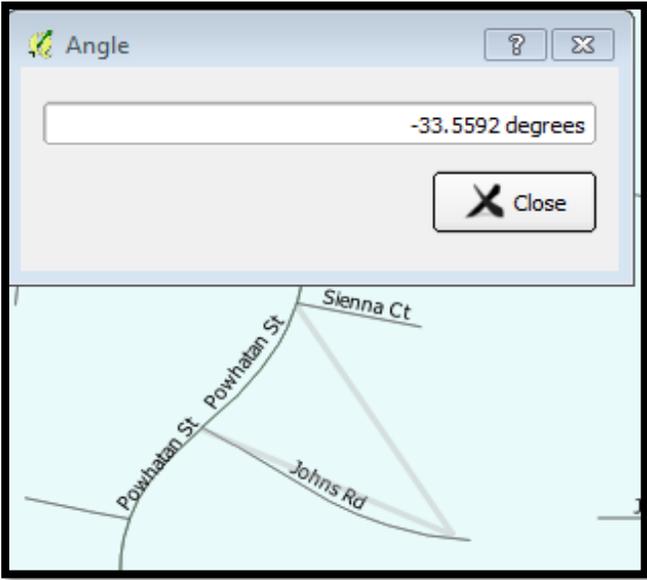
Step 6	<p>For this example, double click the value "P0001" (Nonvisible Linear Legal/Statistical Boundary) in the values window to <i>add it to the Expression window</i>.</p>  <p>To execute the expression, click the  Select button.</p>
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Step	Action and Result
Step 7	<p>The features meeting the expression, "MTFCC" = 'P0001', are highlighted on the map.</p> 

Table 16: Measure Button

Step	Action and Result
Step 1	<p>To measure the distance between two points on the map, select the Measure button and then Measure Line choice.</p>  <p>The Measure (OTF on) dialog box opens.</p> 

Step	Action and Result
<p>Step 2</p>	<p>Zoom to the desired map location to take the measurement. Left-click the beginning point on the map and continue clicking points until reaching the final point. Right-click to show completion of point selection. <i>The length of each segment of the line, as well as the total length of the line between the beginning point and the ending point, appear in the Measure box.</i></p>  <p>Click New to start another measurement or click Close to close the Measure tool.</p>
<p>Step 3</p>	<p>To measure the area on the map, select the Measure tool and then Measure Area choice.</p>  <p><i>The Measure (OTF on) dialog box opens.</i></p> 

Step	Action and Result
<p>Step 4</p>	<p>Zoom to the desired map location to take the measurement. Left-click on the map to begin drawing a polygon around the area to measure. Left-click at each vertex of the polygon. Right-click to show completion of the polygon. <i>The polygon's area appears in the Total field.</i> Use the drop-down to the right to see the area in other units of measure. Meters, kilometers, feet, yards, miles, degrees, and nautical miles are the unit of measure choices.</p>  <p>Click New to start another measurement or click Close to close the Measure tool.</p>
<p>Step 5</p>	<p>To measure an angle on the map, select the Measure tool and then Measure Angle choice.</p> 
<p>Step 6</p>	<p>Zoom to the desired map location to take the measurement. Left-click on the map to begin drawing the angle. Drag the mouse to create the first side of the angle, then left-click, and drag the mouse again to draw the second leg. <i>The Angle box opens showing the angle measurement.</i></p>  <p>Click Close to close the Measure tool.</p>

8.4.2 PSAP Toolbar

The **PSAP toolbar**, shown [Figure 15](#), provides the software functionality to complete PSAP review and update activities. It includes four separate sub-toolbars, identified by the grouping bars described earlier in the **Standard toolbar** section.



Figure 15. PSAP Toolbar

The first sub-toolbar contains the buttons for adding and deleting linear features, modifying linear feature attributes and areal features, displaying names and the legend, and renumbering block groups. The second sub-toolbar contains buttons for conducting geography and PSAP criteria reviews. The third sub-toolbar contains buttons for importing shapefiles, exporting the map to a zip file, and exporting a map to print. The fourth sub-toolbar contains buttons for adding an internet map service and adding imagery.

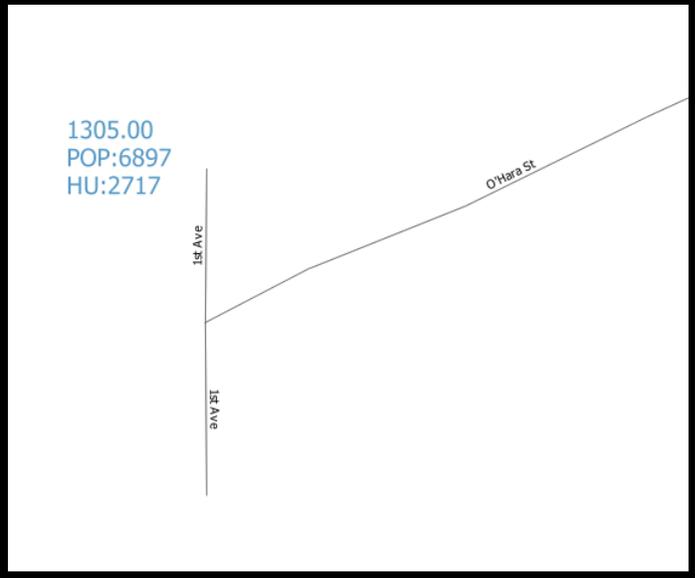
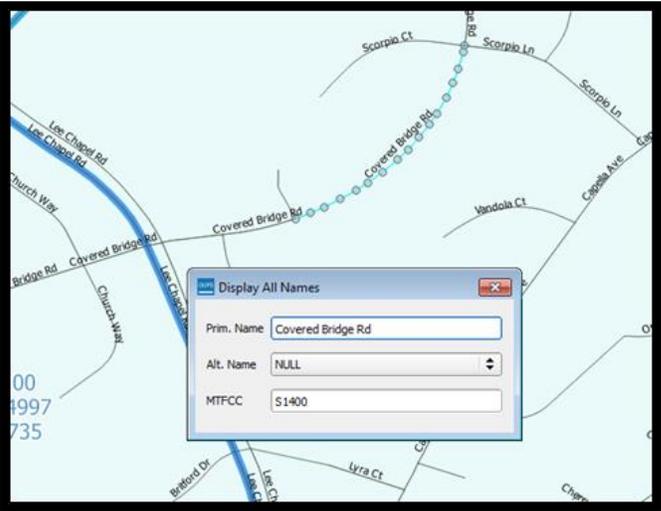
An additional toolbar, the **Manage Layers toolbar**, allows participants to add vector and raster data layers and import data tables. [Table 17](#) and [Table 27](#) describe the **PSAP toolbar** and the **Manage Layers toolbar** respectively.

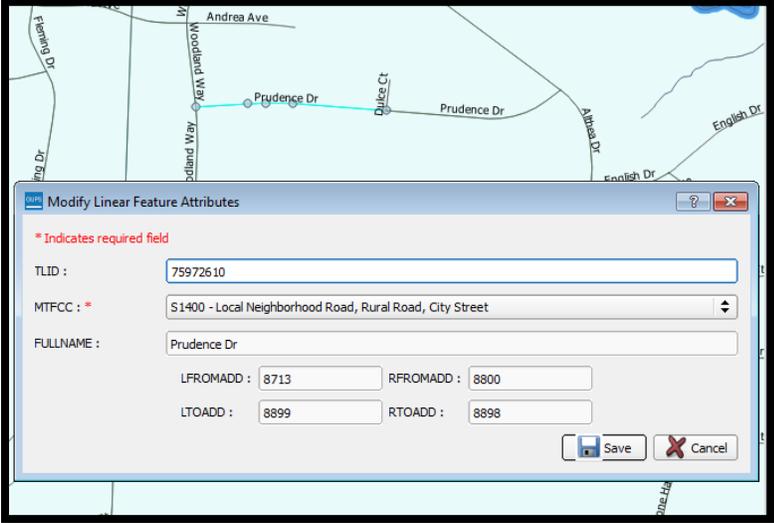
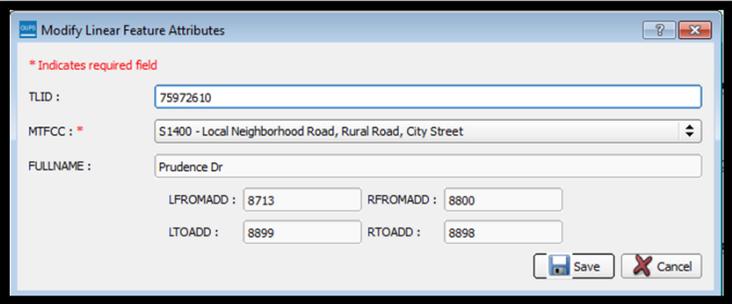
Table 17: PSAP Toolbar Buttons, Names, and Functions/Descriptions

Button	Name	Function/Description
	Add Linear Feature	<p>Click the Add Linear Feature button to digitize a new linear feature.</p> <p>To add a linear feature, click the mouse to begin the line and continue to click at each vertex point of the line. Right-click the mouse to complete the new line, shown in pink in the image below.</p>  <p>Upon completion of digitization, the Add Linear Feature dialog box opens. Click the MTFCC drop-down menu to choose the appropriate feature classification code. If named, type the name of the feature in the Name field.</p>

Button	Name	Function/Description
		<div> </div> <p>Note: To locate information on the MAF/TIGER Feature Classification Codes (MTFCC) codes, refer to Appendix F. Refer to Appendix H for a list of standardized street type abbreviations since the street type (i.e. St., Rd., Ave., Cir., etc.) is required to upload the feature correctly.</p>
	<p>Delete/Restore Linear Feature</p>	<p>Click the Delete/Restore Linear Feature button to delete a linear feature. Participants can restore linear features if deleted in error.</p> <p>To delete a linear feature, click the mouse on the feature to delete.</p> <div> </div> <p><i>The Delete/Restore Linear Feature confirmation dialog box opens with a question about certainty of the delete. Click OK to mark the feature for deletion. The deleted feature appears on the map with a gray X's on top of the linear feature.</i></p>

Button	Name	Function/Description
		<div> </div> <p>Note: When a feature is marked for deletion, GUPS assigns a delete flag to the feature in the attribute table. The deletion occurs later if it remains marked as such. Assigning a flag rather than immediately deleting the feature allows for the restoration of the feature if deleted in error.</p> <p>To restore a deleted linear feature, click on the Delete/Restore Linear Feature button. Click the feature on the map previously marked for deletion (<i>highlights in light yellow</i>).</p> <div> </div> <p><i>The Delete/Restore Linear Feature confirmation dialog box opens with question restore the line.</i></p> <p>Click the OK button to remove the delete line flag from the attribute table and restore the feature.</p>

Button	Name	Function/Description
		
	<p>Display All Names</p>	<p>Click the Display All Names button to display the primary and alternate names for a street. It also shows the MTFCC for other linear features such as streams, railroads, non-visible features.</p> <p>To check for the name of a street feature, click the Display All Names button and then click on the street on the map. The selected feature highlights in light blue and the Display All Names dialog box opens showing the primary name in the Prim. Name field and the alternate name, if one exists, in the Alt. Name field. To see all alternate names, click the drop-down arrow to the right of the Alt. Name field. If no alternate name exists, 'NULL' appears in the Alt. Name field.</p> 

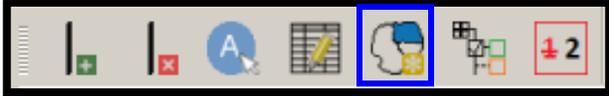
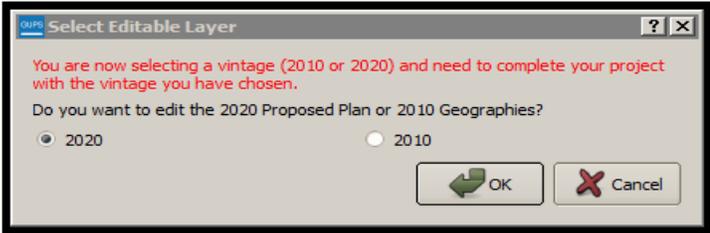
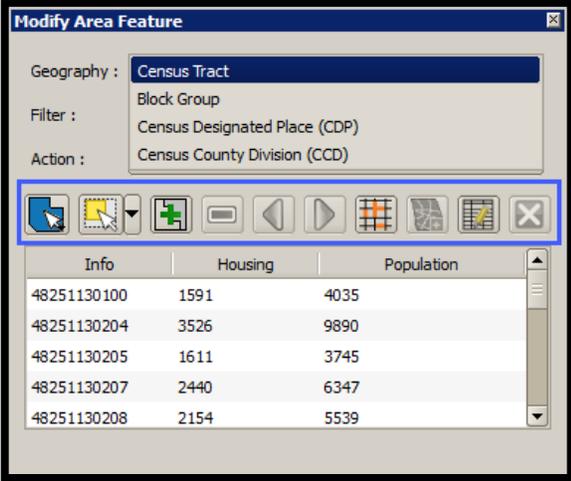
Button	Name	Function/Description
	<p>Modify Linear Feature Attributes</p>	<p>Click the Modify Linear Feature Attributes button to edit attribute fields for a selected linear feature.</p> <p>To edit the attribution of a linear feature, click the Modify Linear Feature Attributes button and then click the linear feature to edit.</p>  <p>The Modify Linear Feature Attributes dialog box opens with the TIGER/Line Feature ID (TLID) of the feature selected. The MTFCC field displays the assigned MTFCC. If the feature is unnamed, the FULLNAME field is blank. The TLID field is not eligible for modification.</p> <p>To update the MTFCC field, click the down-drop box and select the correct MTFCC code. This field is required for all linear features.</p>  <p>To update the FULLNAME field, enter the name if the field is blank. If the field contains an incorrect name, highlight the existing name and press the Delete key from the keyboard or backspace over the existing name to clear the field prior to entering the current/correct name.</p>
	<p>Modify Area Feature</p>	<p>Click the Modify Area Feature button to choose the geography, filter, and action for the statistical geographies in the given entity (county or tribal). Applying a search filter to each geography helps locate the statistical geographies that do not meet specified criteria. Refer to Table 18 for several detailed examples of its use. This button is a major component used for updating statistical geographies.</p>
	<p>Show/Hide Legend</p>	<p>Click the Show/Hide Legend button to hide the layer list. Click it again to show the layer list.</p>

Button	Name	Function/Description
	Renumbering Tool	Click the Renumbering Tool button to renumber newly created or modified block groups resulting from merges or splits. Renumbering is not required. Participants choosing to renumber should execute this tool after all block group work concludes. Save the project to make the changes permanent.
	Geography Review Tool	Click the Geography Review Tool button to filter a layer based on field values in the attribute table. The Geography Review Tool does not allow for changes. Refer to Table 20 for details on its use.
	Review Change Polygons	Click the Review Change Polygons button to view the review the updated polygons created from the edits made to census tracts, block groups, CDPs, and CCDs where applicable. The Review Change Polygons button allows for changes to previous updates. Refer to Table 21 for details on its use.
	PSAP Criteria Review	Click the PSAP Criteria Review button to generate a list of threshold failures and to correct the failures or provide a justification for the failures. This mandatory check is required before creating a data output file. Refer to Section 10.1 and Table 22 for details on its use. Note: If reviewing the 2020 Proposed Plan, no threshold failures will register until the participant performs edits.
	Import County Zip	Click the Import County Zip button to import a participant’s “DataDirectory” output .zip file into GUPS for further review and update. Refer to Table 23 for details on its use. Note: GUPS generates this “DataDirectory” .zip file as part of the Export to Zip → Share with Another Participant function described in Table 24 .
	Export to Zip	Click the Export to Zip button to create the .zip file containing all required data and shapefiles for submission to the Census Bureau or to share with another participant. Refer to Table 24 for details on its use.
	Print Map to File	Click the Print Map to File button export a printable map in .pdf, png, .tif, or jpeg format. Refer to Table 25 for details on its use.
	Internet Map Service	Click the Internet Map Service button to load a GIS map service from the internet into GUPS to assist with overlaying external source visuals/data. Note: An internet connection is required for this button to function.
	Add Imagery	Click the Add Imagery button to add either USGS or Esri imagery to overlay the working county shapefiles. Remove imagery using the same button. Refer to Table 26 for details on its use.
	Undo	Click the Undo button to revert the last change made by the participant. After making the layer where the change occurred active in the Table of Contents , this button activates on the Advanced Digitizing toolbar and in the Edit menu if the Undo action is permissible. Note: This button (and action) is very important for a participant to utilize prior to saving any changes. Participants should be confident with the change they have made prior to saving. If not, they should perform the Undo action.
	Redo	Click the Redo button to restores the last change made by the participant. This button activates on the Advanced Digitizing toolbar if a redo action is permissible.

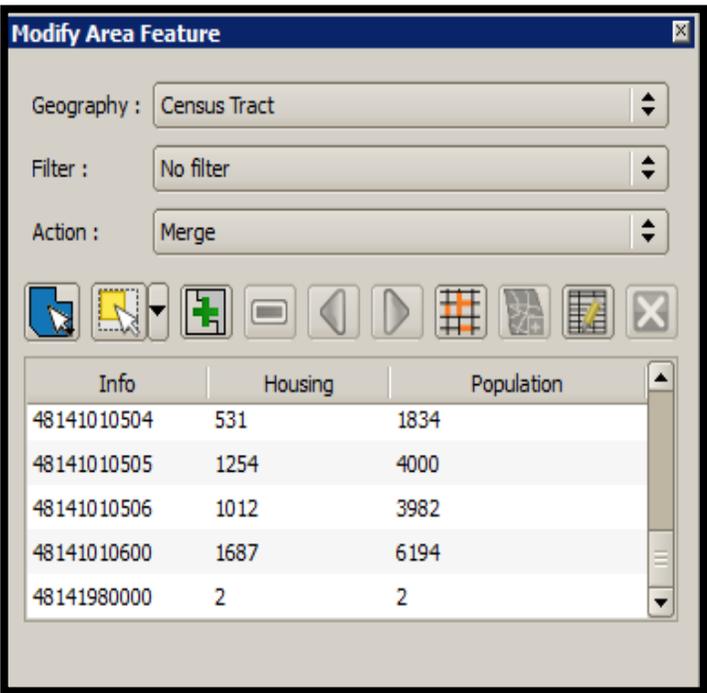
8.4.2.1 Modify Area Feature Button

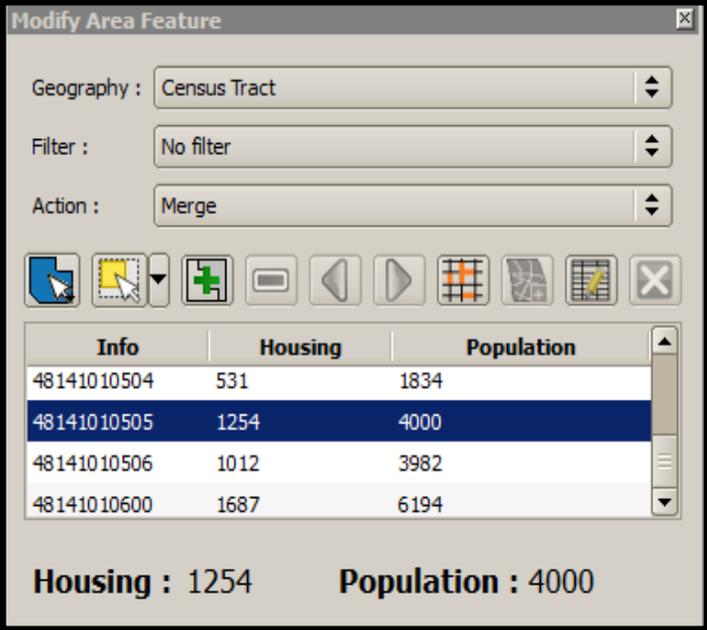
The **Modify Area Feature** button allows participants to review and update census tracts, block groups, census designated places (CDPs), and census county divisions (CCDs) in applicable states. Please refer to [Chapter 9](#) for detailed review and update instructions of each statistical area. The following section discusses the mechanics of the tool itself, not the criteria for which to use the tool.

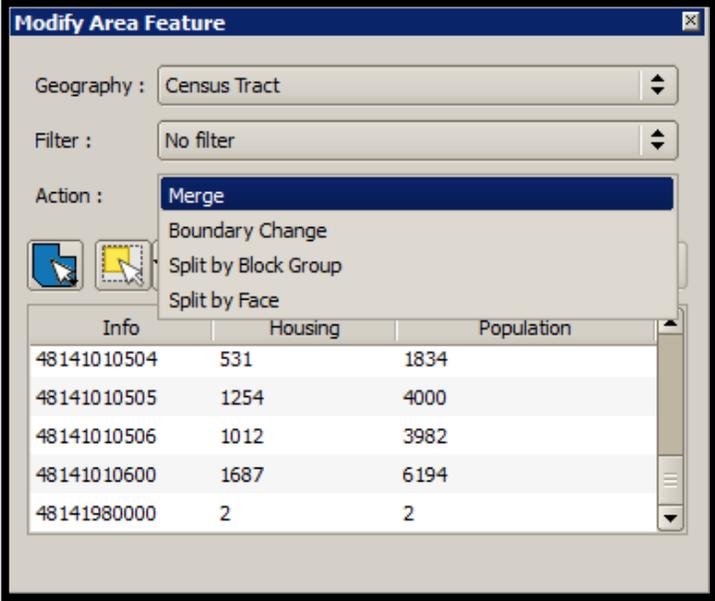
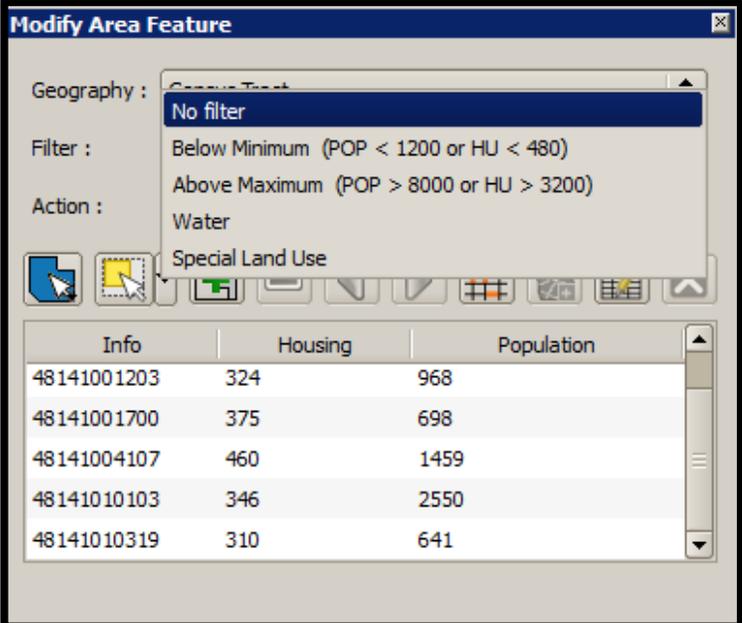
Table 18: Modify Area Feature Button

Step	Action and Result																		
<p>Step 1</p>	<p>Click the Modify Area Feature button.</p>  <p>IMPORTANT: The first time use of this button in the working county launches the Select Editable Layer window. The window shows two editable layer choices (2020 Proposed Plan and 2010 Geographies). This window only appears with the initial launch of the button in any given working county. Once selected, GUPS remembers the geography chosen in this window. If a participant wants to start over, they must initiate the GUPS Data Settings button to delete the current project. See Table 14 for details on deleting a project and starting again.</p> 																		
<p>Step 2</p>	<p>After selection of the editable layers, <i>the Modify Area Feature dialog box opens</i>. Click the Geography drop-down menu to select the geography to review and update.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>48251130100</td> <td>1591</td> <td>4035</td> </tr> <tr> <td>48251130204</td> <td>3526</td> <td>9890</td> </tr> <tr> <td>48251130205</td> <td>1611</td> <td>3745</td> </tr> <tr> <td>48251130207</td> <td>2440</td> <td>6347</td> </tr> <tr> <td>48251130208</td> <td>2154</td> <td>5539</td> </tr> </tbody> </table> <p>Geographies that appear in the Geography drop-down menu are editable with the tools located above the information window; however, those tools change based upon the geography selected.</p> <p>Note: For the 21 states with CCDs, the Census County Division (CCD) choice appears in the Geography drop-down menu.</p>	Info	Housing	Population	48251130100	1591	4035	48251130204	3526	9890	48251130205	1611	3745	48251130207	2440	6347	48251130208	2154	5539
Info	Housing	Population																	
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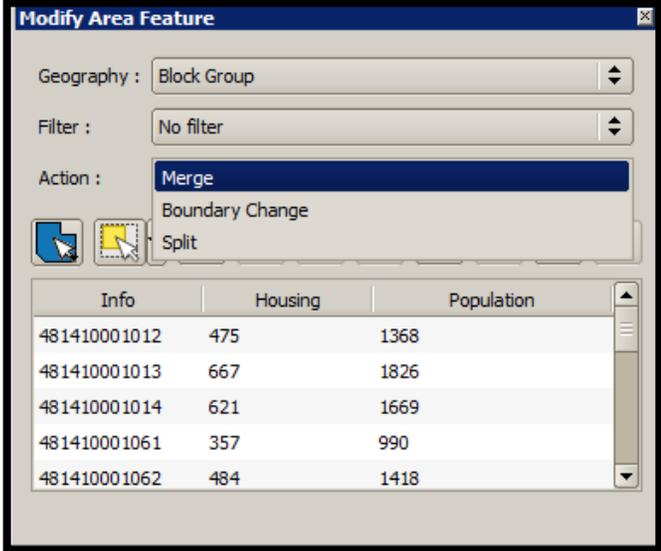
Step	Action and Result
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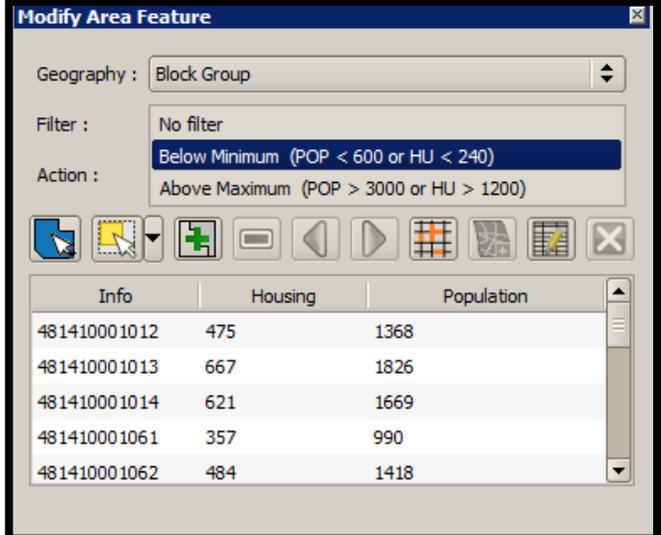
<p>Step 3</p>	<p>Choose Census Tract from the Geography drop-down menu. The default filter, No filter, displays all census tracts in the information window.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>48141010504</td> <td>531</td> <td>1834</td> </tr> <tr> <td>48141010505</td> <td>1254</td> <td>4000</td> </tr> <tr> <td>48141010506</td> <td>1012</td> <td>3982</td> </tr> <tr> <td>48141010600</td> <td>1687</td> <td>6194</td> </tr> <tr> <td>48141980000</td> <td>2</td> <td>2</td> </tr> </tbody> </table>	Info	Housing	Population	48141010504	531	1834	48141010505	1254	4000	48141010506	1012	3982	48141010600	1687	6194	48141980000	2	2
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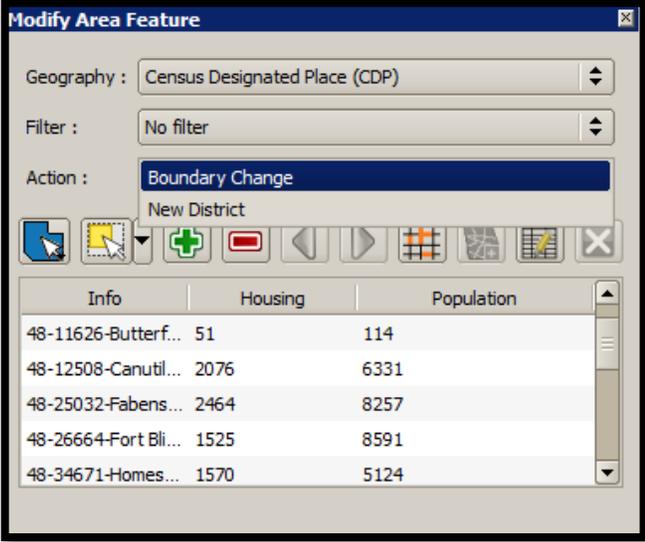
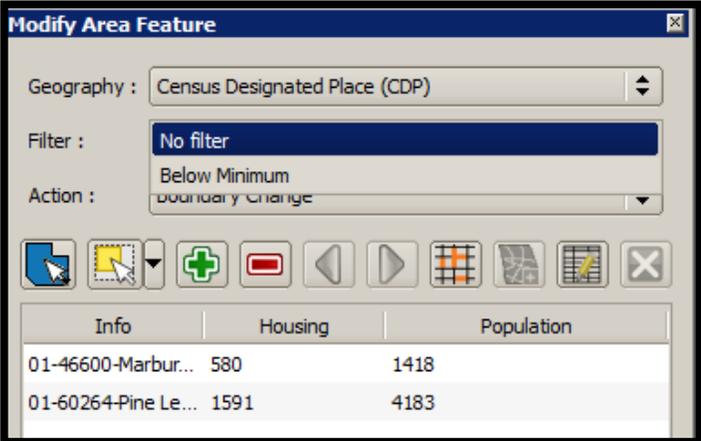
<p>Step 4</p>	<p>Double click on a row in the list to select a census tract. <i>The map zooms to the selected tract.</i></p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>48141010504</td> <td>531</td> <td>1834</td> </tr> <tr style="background-color: #000080; color: white;"> <td>48141010505</td> <td>1254</td> <td>4000</td> </tr> <tr> <td>48141010506</td> <td>1012</td> <td>3982</td> </tr> <tr> <td>48141010600</td> <td>1687</td> <td>6194</td> </tr> </tbody> </table> <p>Housing : 1254 Population : 4000</p>	Info	Housing	Population	48141010504	531	1834	48141010505	1254	4000	48141010506	1012	3982	48141010600	1687	6194
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Step	Action and Result																		
Step 5	<p>The Action drop-down menu activates four separate types of updates, Merge, Boundary Change, Split by Block Group, or Split by Face.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>48141010504</td> <td>531</td> <td>1834</td> </tr> <tr> <td>48141010505</td> <td>1254</td> <td>4000</td> </tr> <tr> <td>48141010506</td> <td>1012</td> <td>3982</td> </tr> <tr> <td>48141010600</td> <td>1687</td> <td>6194</td> </tr> <tr> <td>48141980000</td> <td>2</td> <td>2</td> </tr> </tbody> </table>	Info	Housing	Population	48141010504	531	1834	48141010505	1254	4000	48141010506	1012	3982	48141010600	1687	6194	48141980000	2	2
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48141980000	2	2																	
Step 6	<p>With Census Tract selected, click the Filter drop-down menu to view census tracts that do not meet the population and housing unit criteria - (below minimum – numbers are below the minimum population and housing thresholds and above maximum – numbers are above the maximum population and housing thresholds). Refer to Table 3 for the 2020 population and housing unit criteria for tracts.</p> <p>If present in the working county, participants can also select and view, water tracts (assigned tract codes in the 9900 series) and special land use tracts (assigned tract codes in the 9800 series).</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>48141001203</td> <td>324</td> <td>968</td> </tr> <tr> <td>48141001700</td> <td>375</td> <td>698</td> </tr> <tr> <td>48141004107</td> <td>460</td> <td>1459</td> </tr> <tr> <td>48141010103</td> <td>346</td> <td>2550</td> </tr> <tr> <td>48141010319</td> <td>310</td> <td>641</td> </tr> </tbody> </table>	Info	Housing	Population	48141001203	324	968	48141001700	375	698	48141004107	460	1459	48141010103	346	2550	48141010319	310	641
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48141004107	460	1459																	
48141010103	346	2550																	
48141010319	310	641																	

Step	Action and Result
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<p>Step 7</p>	<p>Selection of Block Group from the Geography drop-down menu enables three actions in the Action drop-down menu, Merge, Boundary Change, and Split.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>481410001012</td> <td>475</td> <td>1368</td> </tr> <tr> <td>481410001013</td> <td>667</td> <td>1826</td> </tr> <tr> <td>481410001014</td> <td>621</td> <td>1669</td> </tr> <tr> <td>481410001061</td> <td>357</td> <td>990</td> </tr> <tr> <td>481410001062</td> <td>484</td> <td>1418</td> </tr> </tbody> </table>	Info	Housing	Population	481410001012	475	1368	481410001013	667	1826	481410001014	621	1669	481410001061	357	990	481410001062	484	1418
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<p>Step 8</p>	<p>As described above for census tracts, with Block Group selected, click the Filter drop-down menu to view the block groups that do not meet the population and housing unit criteria - (below minimum – numbers are below the minimum population and housing unit criteria and above maximum – numbers are above the maximum population and housing unit criteria). Refer to Table 5 for the 2020 population and housing unit criteria for block groups.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>481410001012</td> <td>475</td> <td>1368</td> </tr> <tr> <td>481410001013</td> <td>667</td> <td>1826</td> </tr> <tr> <td>481410001014</td> <td>621</td> <td>1669</td> </tr> <tr> <td>481410001061</td> <td>357</td> <td>990</td> </tr> <tr> <td>481410001062</td> <td>484</td> <td>1418</td> </tr> </tbody> </table>	Info	Housing	Population	481410001012	475	1368	481410001013	667	1826	481410001014	621	1669	481410001061	357	990	481410001062	484	1418
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Step	Action and Result																		
<p>Step 9</p>	<p>Selection of Census Designated Place (CDP) from the Geography drop-down menu enables two actions in the Action drop-down menu, Boundary Change and New District.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>48-11626-Butterf...</td> <td>51</td> <td>114</td> </tr> <tr> <td>48-12508-Canutil...</td> <td>2076</td> <td>6331</td> </tr> <tr> <td>48-25032-Fabens...</td> <td>2464</td> <td>8257</td> </tr> <tr> <td>48-26664-Fort Bli...</td> <td>1525</td> <td>8591</td> </tr> <tr> <td>48-34671-Homes...</td> <td>1570</td> <td>5124</td> </tr> </tbody> </table>	Info	Housing	Population	48-11626-Butterf...	51	114	48-12508-Canutil...	2076	6331	48-25032-Fabens...	2464	8257	48-26664-Fort Bli...	1525	8591	48-34671-Homes...	1570	5124
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48-34671-Homes...	1570	5124																	
<p>Step 10</p>	<p>With Census Designated Place (CDP) selected, leave the Filter drop-down menu set to No Filter to view all of the CDPs in the working county with their population and housing unit information. Recall there are no minimum population and housing thresholds, but a CDP cannot have zero population and zero housing units. Refer to Appendix B for a summary of threshold criteria.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>01-46600-Marbur...</td> <td>580</td> <td>1418</td> </tr> <tr> <td>01-60264-Pine Le...</td> <td>1591</td> <td>4183</td> </tr> </tbody> </table>	Info	Housing	Population	01-46600-Marbur...	580	1418	01-60264-Pine Le...	1591	4183									
Info	Housing	Population																	
01-46600-Marbur...	580	1418																	
01-60264-Pine Le...	1591	4183																	

Step	Action and Result
<p>Step 11</p>	<p>With Census County Division (CCD) selected, click the Action drop-down menu to see the three actions available, Merge, Boundary Change, and New District. There is no Filter menu visible for CCDs since no threshold requirements exist.</p> <p>Note: The 21 states with CCDs may review and update those statistical geographies using the Modify Area Feature tool. States without CCDs will not see this choice in the Geography drop-down menu.</p> <div> </div> <p>As shown in Appendix B, there are no population or housing criteria for CCDs. As a result, edits to them are rare. The intentions of the CCD menu functionality are primarily to align the CCD boundaries to census tract boundaries (using the Boundary Change action). Use local knowledge to make modifications to ensure the sub-county level of geography remains sound and accurate. Do not eliminate CCDs, but ensure their boundaries are valid. If a census tract boundary changed that is also a CCD boundary, review the CCD boundary to determine if it should change as well. Though rare, the Census Bureau permits the creation of new CCDs (using the New District action) for high-level planning purposes. Refer to Chapter 5 for guidance.</p>

Within the **Modify Area Feature** dialog box is a section of additional buttons used to implement changes to the various statistical geographies. [Figure 16](#) highlights the section of additional buttons while [Table 19](#) describes these buttons and their functionality in detail.

Note: The buttons that appear in this toolbar change depending on the geography and action chosen by the participant; therefore, [Figure 16](#) does not depict all of the potential buttons, but only those that appear with Census Tract and Boundary Change selections. [Table 19](#) discusses all the buttons that appear at any point during a participant’s PSAP review.

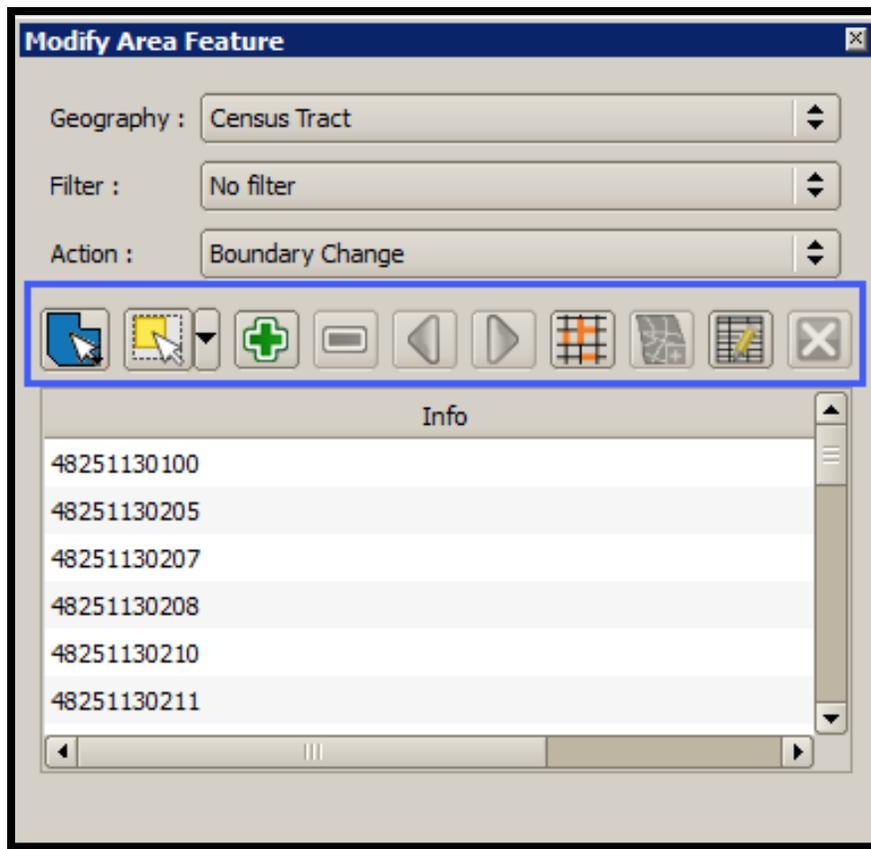


Figure 16. Modify Area Feature Buttons: Census Tract – Boundary Change

Table 19: Modify Area Feature Buttons Detail

Button	Name	Function
	Select Target Area	Allows the participant to select the geographic area (selected from the Geography drop-down menu) by clicking on the map.
	Select Features	Allows the participant to select/deselect layer features in the map window with a single click, dragging the cursor, or drawing graphics on the screen.
	Merge	Select Merge from the Action drop-down menu to activate this button. The Merge button combines multiple geographic entities. Note: Be aware this button is very similar in appearance to the Add Area button activated by the Boundary Change Action selection.

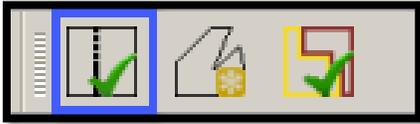
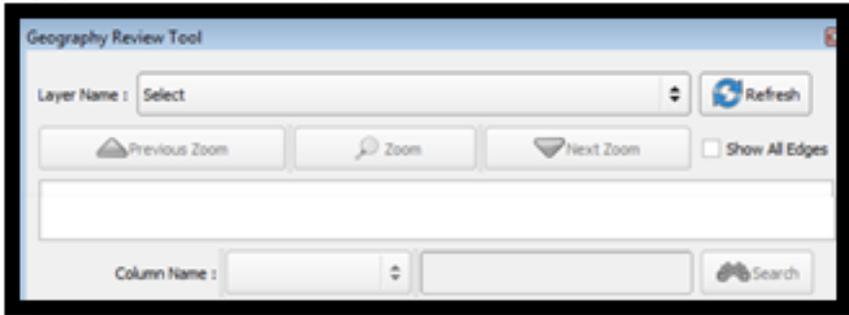
Button	Name	Function
	Add Area	<p>Select Boundary Change from the Action drop-down menu to activate this button. The Add Area button adds smaller geographic entities (faces or block groups) to the geographic area selected on the map. To add more than one face, click on the first face, hold down the Ctrl key, and continue clicking on the other faces until complete.</p> <p>Note: Be aware this button is very similar in appearance to the Merge button activated by the Merge Action selection. Locate the definition of faces in Appendix A.</p>
	Split by Block Group or Split by Face (Census Tract) and Split (Block Group)	<p>Once selected, the selected geographic entity is split by the entire block group or individual faces of the geographic area selected on the map.</p> <p>Note: Be aware this button activates in both the Census Tract and Block Group geography drop-down menus. With Census Tract geography chosen, select Split by Block Group or Split by Face from the Action drop-down menu to activate this button. From Block Group geography, select Split from the Action drop-down menu.</p>
	Remove Area	<p>Select Boundary Change from the Action drop-down menu. Remove smaller geographic entities (Face and Block Group) from the geographic entity selected on the map by using this button. This button only activates for CDPs.</p>
	Previous Non-contiguous Area	<p>Button activates if the selected statistical geographic area is not contiguous and provides a means to pan back to each noncontiguous piece.</p>
	Next Non-contiguous Area	<p>Button activates if the selected statistical geographic area is not contiguous and provides a means to pan forward to each noncontiguous piece.</p>
	Show / Hide Boundary Eligibility Theme	<p>Displays the features on the map that have questionable boundaries (dashed yellow line) and not acceptable boundaries (dashed red line).</p>
	Add Entity	<p>Select New District from the Action drop-down menu of either CDP or CCD Geography drop-down menu. Add select faces to create a new geographic entity.</p>

Button	Name	Function
	Change Attributes	Edits the attributes of a selected feature. For census tracts, a participant may edit Tract Code (TRACTCE), Tract Type (TRACTTYP) and Tract Name (SITE_NAME) fields. These fields activate depending on selections and change made in the Change Attributes window. TRACTTYP and SITE_NAME exist for special use census tracts. Similar to census tracts, for block groups, a participant can edit Block Group Code (BLKGRPCE), Block Group Type (BGTY), and Block Group Name (SITE_NAME).
	Delete Area Feature	Select Boundary Change from the Action drop-down menu. The Delete Area Feature button deletes an area feature. This is used only for CDPs.

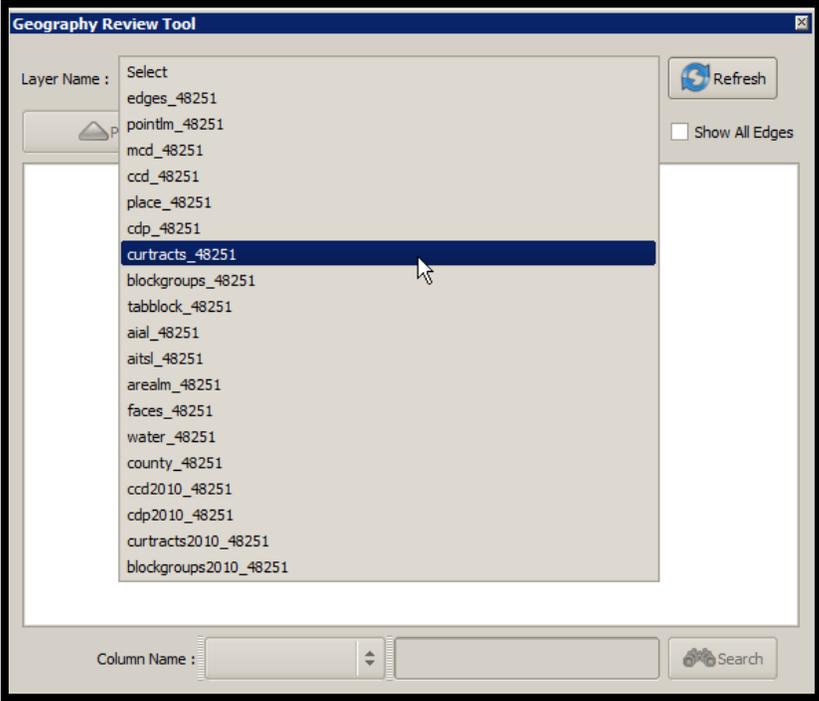
8.4.2.2 Geography Review Tool Button

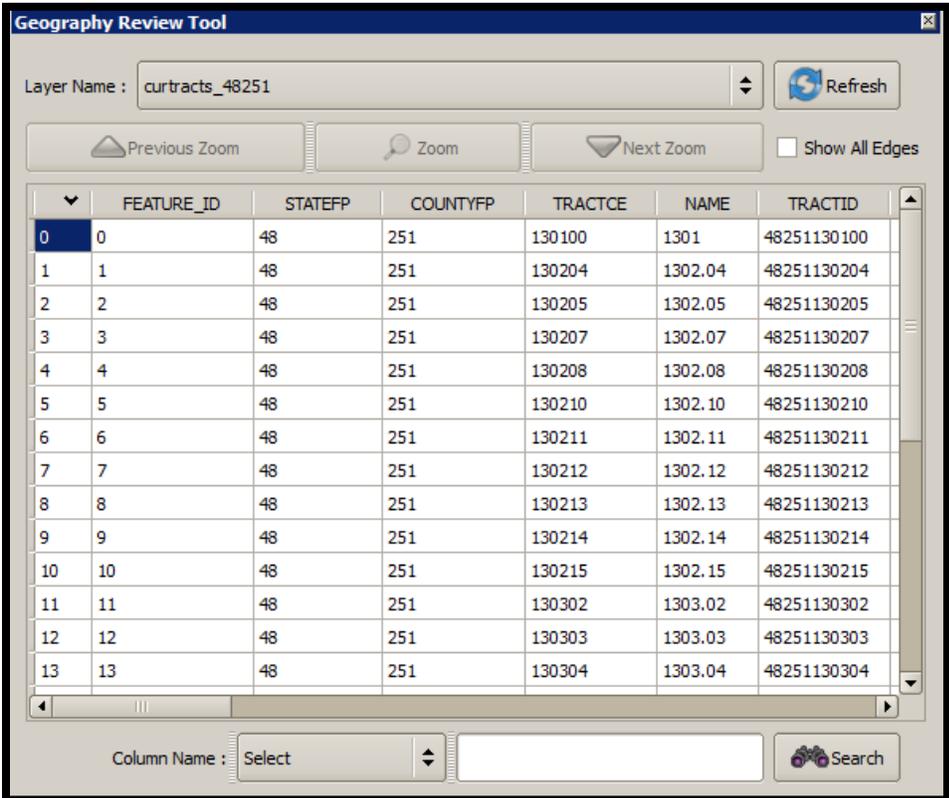
The **Geography Review Tool** button provides access to the attribute tables of some of the layers displayed in the **Table of Contents**. The layers of interest for PSAP are the curtracts, blockgroups, ccd, and cdp layers. It filters map layers based on field values in the attribute table. This tool provides an overall review of the new or deleted entities, or the entities with boundary changes. Participants choosing to conduct their review from the 2020 proposed plan utilize this tool to locate the changes made to census tracts and block groups during the Census Bureau’s internal review. [Section 9.1.1](#) discusses that process while [Table 20](#) includes information for executing this button. [Section 10.3](#) provides detailed information and examples.

Table 20: Geography Review Tool Button

Step	Action and Result
Step 1	<p>Click the Geography Review Tool button.</p>  <p><i>The Geography Review Tool window opens.</i></p> 

Step	Action and Result
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Step 2	<p>Select the layer to review from the Layer Name drop-down menu.</p>  <p>The screenshot shows the 'Geography Review Tool' window. The 'Layer Name' dropdown menu is open, displaying a list of layers. The layer 'curtracts_48251' is highlighted in blue. Other layers in the list include edges_48251, pointlm_48251, mcd_48251, ccd_48251, place_48251, cdp_48251, blockgroups_48251, tabblock_48251, aial_48251, aitsl_48251, arealm_48251, faces_48251, water_48251, county_48251, ccd2010_48251, cdp2010_48251, curtracts2010_48251, and blockgroups2010_48251. A 'Refresh' button is visible in the top right corner. At the bottom, there is a 'Column Name' field and a 'Search' button.</p>
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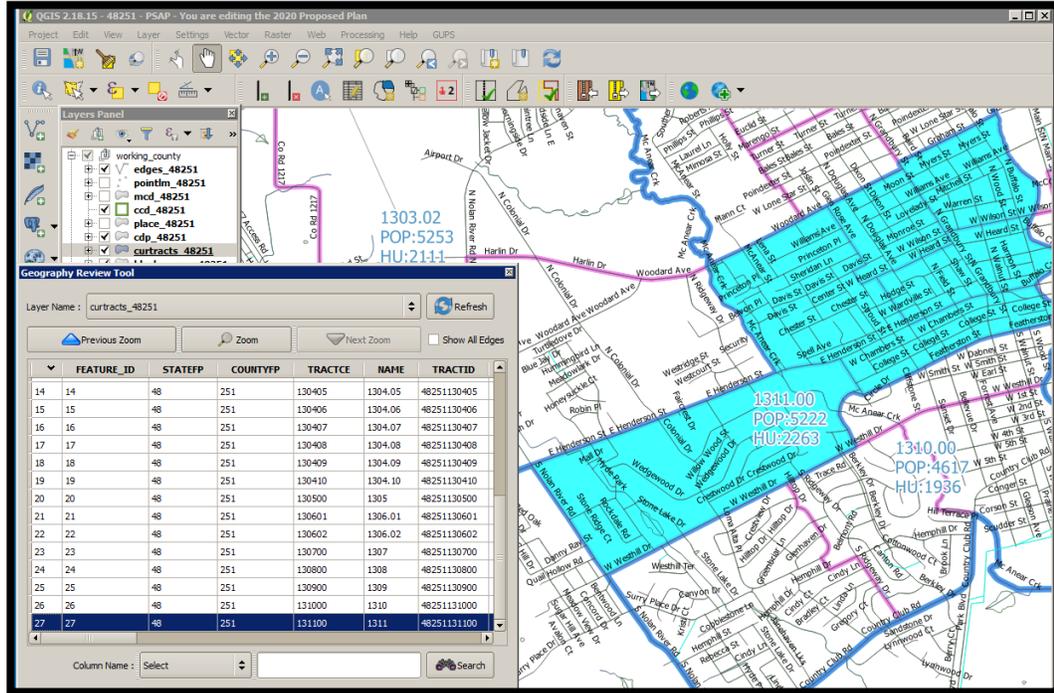
Step 3	<p>After making layer selection, the attribute table for the layer opens, with the attributes for each of the current census tracts.</p>  <p>The screenshot shows the 'Geography Review Tool' window with the 'Layer Name' dropdown set to 'curtracts_48251'. Below the dropdown are 'Previous Zoom', 'Zoom', and 'Next Zoom' buttons. The 'Show All Edges' checkbox is unchecked. An attribute table is displayed, showing the following data:</p> <table border="1"> <thead> <tr> <th></th> <th>FEATURE_ID</th> <th>STATEFP</th> <th>COUNTYFP</th> <th>TRACTCE</th> <th>NAME</th> <th>TRACTID</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>48</td><td>251</td><td>130100</td><td>1301</td><td>48251130100</td></tr> <tr><td>1</td><td>1</td><td>48</td><td>251</td><td>130204</td><td>1302.04</td><td>48251130204</td></tr> <tr><td>2</td><td>2</td><td>48</td><td>251</td><td>130205</td><td>1302.05</td><td>48251130205</td></tr> <tr><td>3</td><td>3</td><td>48</td><td>251</td><td>130207</td><td>1302.07</td><td>48251130207</td></tr> <tr><td>4</td><td>4</td><td>48</td><td>251</td><td>130208</td><td>1302.08</td><td>48251130208</td></tr> <tr><td>5</td><td>5</td><td>48</td><td>251</td><td>130210</td><td>1302.10</td><td>48251130210</td></tr> <tr><td>6</td><td>6</td><td>48</td><td>251</td><td>130211</td><td>1302.11</td><td>48251130211</td></tr> <tr><td>7</td><td>7</td><td>48</td><td>251</td><td>130212</td><td>1302.12</td><td>48251130212</td></tr> <tr><td>8</td><td>8</td><td>48</td><td>251</td><td>130213</td><td>1302.13</td><td>48251130213</td></tr> <tr><td>9</td><td>9</td><td>48</td><td>251</td><td>130214</td><td>1302.14</td><td>48251130214</td></tr> <tr><td>10</td><td>10</td><td>48</td><td>251</td><td>130215</td><td>1302.15</td><td>48251130215</td></tr> <tr><td>11</td><td>11</td><td>48</td><td>251</td><td>130302</td><td>1303.02</td><td>48251130302</td></tr> <tr><td>12</td><td>12</td><td>48</td><td>251</td><td>130303</td><td>1303.03</td><td>48251130303</td></tr> <tr><td>13</td><td>13</td><td>48</td><td>251</td><td>130304</td><td>1303.04</td><td>48251130304</td></tr> </tbody> </table> <p>At the bottom, the 'Column Name' dropdown is set to 'Select' and the 'Search' button is visible.</p>		FEATURE_ID	STATEFP	COUNTYFP	TRACTCE	NAME	TRACTID	0	0	48	251	130100	1301	48251130100	1	1	48	251	130204	1302.04	48251130204	2	2	48	251	130205	1302.05	48251130205	3	3	48	251	130207	1302.07	48251130207	4	4	48	251	130208	1302.08	48251130208	5	5	48	251	130210	1302.10	48251130210	6	6	48	251	130211	1302.11	48251130211	7	7	48	251	130212	1302.12	48251130212	8	8	48	251	130213	1302.13	48251130213	9	9	48	251	130214	1302.14	48251130214	10	10	48	251	130215	1302.15	48251130215	11	11	48	251	130302	1303.02	48251130302	12	12	48	251	130303	1303.03	48251130303	13	13	48	251	130304	1303.04	48251130304
	FEATURE_ID	STATEFP	COUNTYFP	TRACTCE	NAME	TRACTID																																																																																																				
0	0	48	251	130100	1301	48251130100																																																																																																				
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4	4	48	251	130208	1302.08	48251130208																																																																																																				
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6	6	48	251	130211	1302.11	48251130211																																																																																																				
7	7	48	251	130212	1302.12	48251130212																																																																																																				
8	8	48	251	130213	1302.13	48251130213																																																																																																				
9	9	48	251	130214	1302.14	48251130214																																																																																																				
10	10	48	251	130215	1302.15	48251130215																																																																																																				
11	11	48	251	130302	1303.02	48251130302																																																																																																				
12	12	48	251	130303	1303.03	48251130303																																																																																																				
13	13	48	251	130304	1303.04	48251130304																																																																																																				

Step

Action and Result

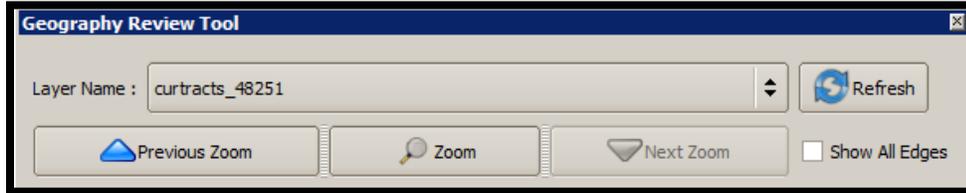
Step 4

To see a census tract on the map, click its row in the attribute table list and then click **Zoom** or double click the row. *The map automatically zooms to the selected census tract.*



Step 5

To view other tracts, use the **Previous Zoom** and **Next Zoom** buttons. The previous or next row highlights and GUPS zooms to the map for that row.



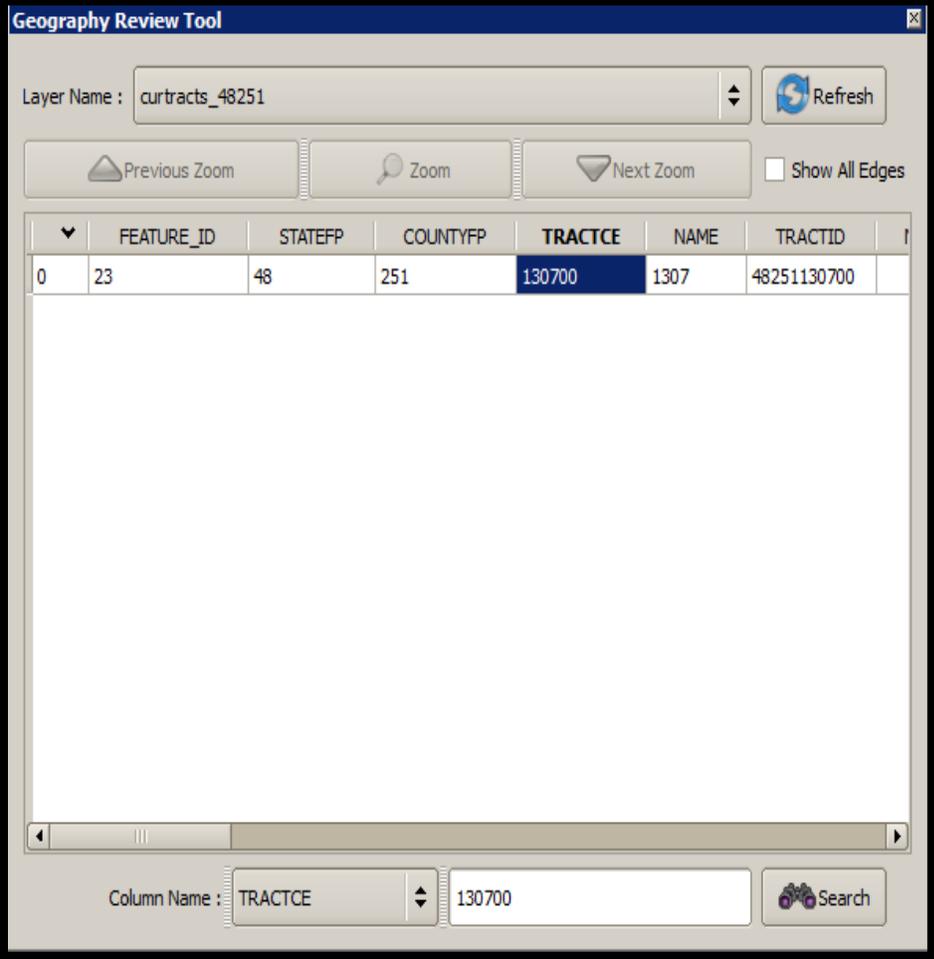
Step	Action and Result
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Step 6

Use the **Column Name** drop-down menu at the bottom of the dialog box to filter the table layers by specific attributes (i.e., TRACTCE, CHNG_TYPE, etc.). In this example, select **TRACTCE**.

The screenshot shows the 'Geography Review Tool' window. At the top, the 'Layer Name' is set to 'curtracts_48251'. Below this are navigation buttons for 'Previous Zoom', 'Zoom', and 'Next Zoom', along with a 'Show All Edges' checkbox. The main area contains a table with the following columns: FEATURE_ID, STATEFP, COUNTYFP, TRACTCE, NAME, and TRACTID. A dropdown menu is open over the table, listing various column names. The 'TRACTCE' option is highlighted in blue. Below the table, there is a 'Column Name' field and a 'Search' button. At the bottom, a map shows a portion of a geographic area with labels for 'Noian Riv' and 'Arbor Spring Univ'. The coordinate is displayed as -97.44047, 32.32027 and the scale is 1:15.

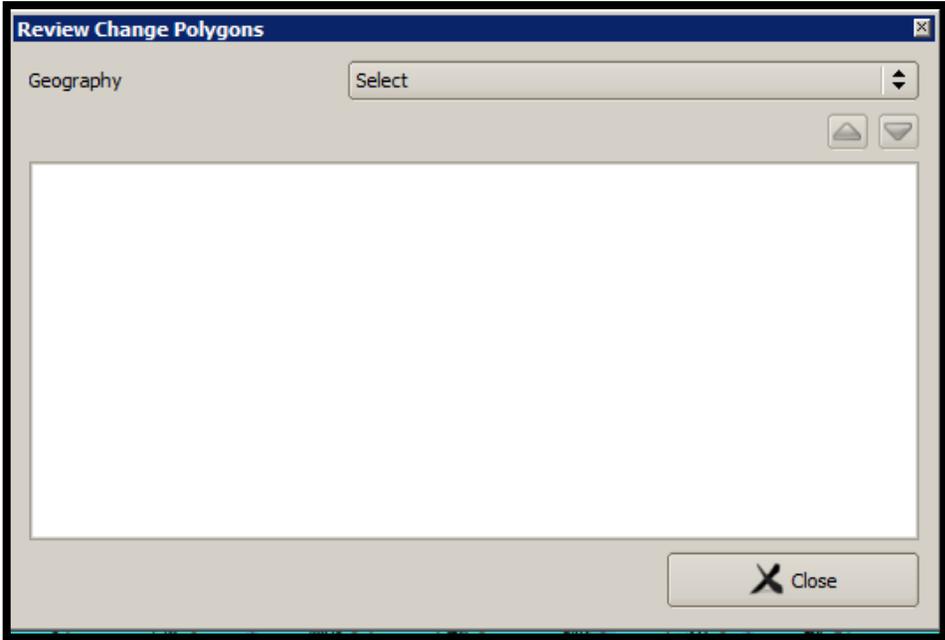
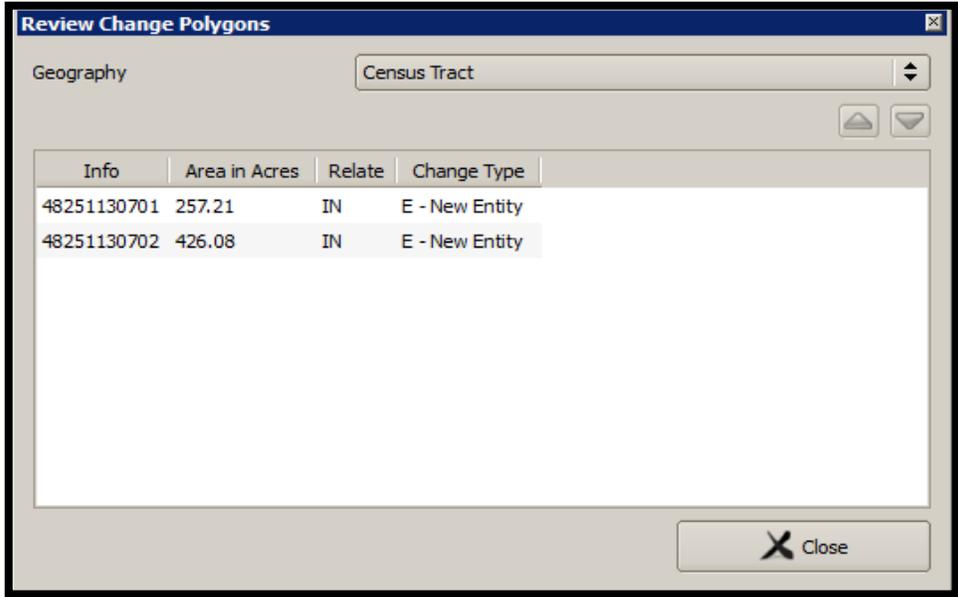
	FEATURE_ID	STATEFP	COUNTYFP	TRACTCE	NAME	TRACTID
14	14	48	251	130405	1304.05	48251130405
15	15	48	251	130406	1304.06	48251130406
16	16	48	251	130407	1304.07	48251130407
17	17	48	251	130408	1304.08	48251130408
18	18	48	251	130409	1304.09	48251130409
19	19	48	251	130410	1304.10	48251130410
20	20	48	251	130500	1305	48251130500
21	21	48	251	130601	1306.01	48251130601
22	22	48	251	130602	1306.02	48251130602
23	23	48	251	130700	1307	48251130700
24	24	48	251	130800	1308	48251130800
25	25	48	251	130900	1309	48251130900
26	26	48	251	131000	1310	48251131000
27	27	48	251	131100	1311	48251131100

Step	Action and Result
<p>Step 7</p>	<p>Once TRACTCE displays in the Column Name field, type in the census tract code in the Search box and then click on the Search button.</p>  <p>This filters the attribute table to display just the one tract.</p> 
<p>Step 8</p>	<p>Selecting the one tract from the attribute table activates the Zoom menu that allows for quick zoom to the selected tract. Clicking the Refresh button restores the attribute table to display all records for the chosen layer name.</p>

8.4.2.3 Review Change Polygons Button

The **Review Change Polygons** button reviews transaction, or change polygons, for census tracts, block groups, CDPs, and CCDs. This tool may be helpful for participants to use as part of their quality check of the work they performed to modify the statistical geographies. The execution of this tool is not required to make a submission to the Census Bureau. Information for executing this button are in [Table 21](#), while [Section 10.2](#) provides detailed information and examples.

Table 21: Review Change Polygons Button

Step	Action and Result												
Step 1	<p>Click the Review Change Polygons button.</p> 												
Step 2	<p>The Review Change Polygons window appears.</p> 												
Step 3	<p>Choose the statistical geography to review from the Geography drop-down menu, <i>in this example Census Tract</i>.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Area in Acres</th> <th>Relate</th> <th>Change Type</th> </tr> </thead> <tbody> <tr> <td>48251130701</td> <td>257.21</td> <td>IN</td> <td>E - New Entity</td> </tr> <tr> <td>48251130702</td> <td>426.08</td> <td>IN</td> <td>E - New Entity</td> </tr> </tbody> </table> <p>The Review Change Polygons window populates with the geographies to review.</p>	Info	Area in Acres	Relate	Change Type	48251130701	257.21	IN	E - New Entity	48251130702	426.08	IN	E - New Entity
Info	Area in Acres	Relate	Change Type										
48251130701	257.21	IN	E - New Entity										
48251130702	426.08	IN	E - New Entity										

Step **Action and Result**

Step 4

Click on a row in the list. The **Map View** zooms to the selected entity.

Info	Area in Acres	Relate	Change Type
48251130701	257.21	IN	E - New Entity
48251130702	426.08	IN	E - New Entity

Step 5

To correct a change, activate the **Modify Area Feature** tool and click on the **Select Target Area** button to highlight the geography to edit. Dependent on the type of geography selected, the **Action** menus; and therefore the update update potential, vary.

Info	Housing	Population
48251130701	719	1939
48251130702	943	2465
48251130800	1517	4523
48251130900	1117	3220

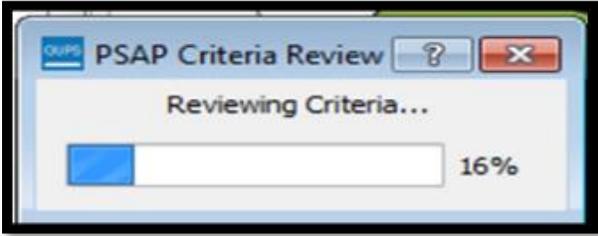
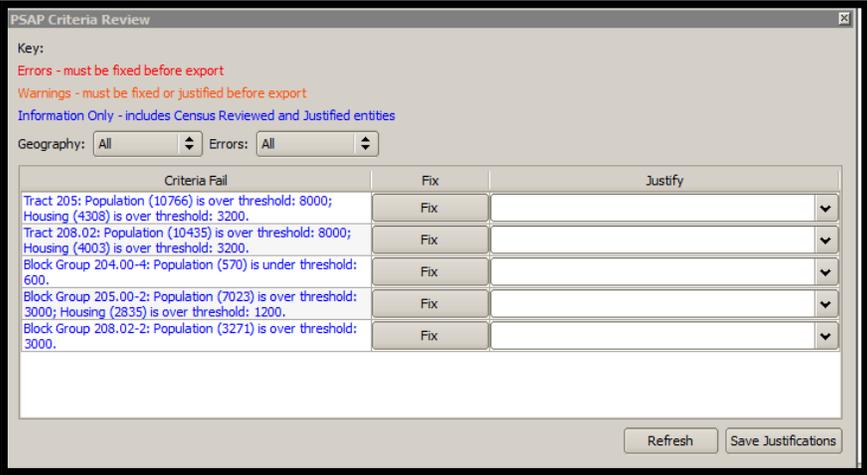
Housing : 719 Population : 1939

Note: These edits modify the entity selected, not the specific change polygon. The change polygon simply provides a record of the action(s) taken on each entity and is not editable.

8.4.2.4 PSAP Criteria Review Button

Click the **PSAP Criteria Review** button to generate a list of threshold failures and correct the failures or provide a justification for the failure. Participants must run this required check before creating a data output file for submission to the Census Bureau. **Table 22** includes information for executing this button. **Section 10.1** provides detailed information and examples.

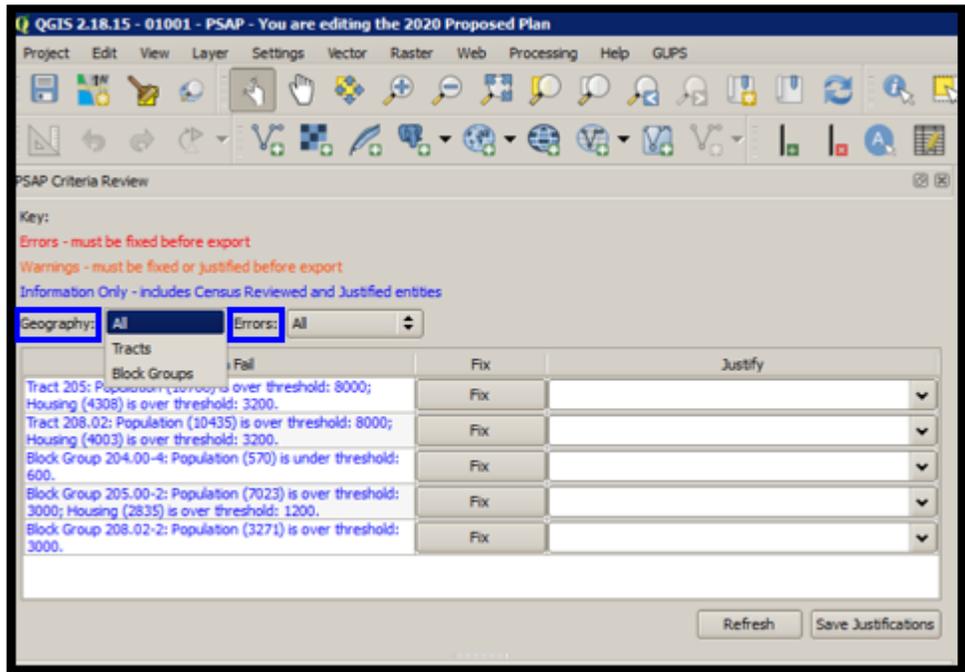
Table 22: PSAP Criteria Review Button

Step	Action and Result
<p>Step 1</p>	<p>Click the PSAP Criteria Review button.</p>  <p>A PSAP Criteria Review dialog box opens to inform participants that it is actively reviewing the population and housing unit criteria for all the Geographic entities in the working county.</p>  <p>After the PSAP Criteria Review completes, a comprehensive list of the failed entities (i.e., those entities that do not meet the established population and housing unit criteria) generates. In addition, the list of noncontiguous areas generates if they exist in the working county. As shown in the next image, <i>the errors to fix appear in red color while the warnings to fix or justify appear in orange</i>.</p> 

Step	Action and Result
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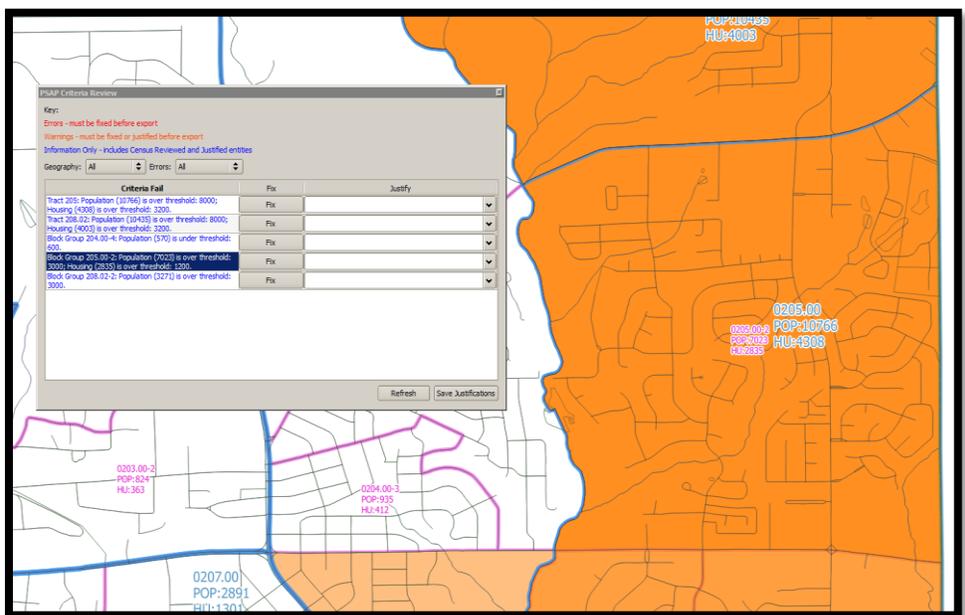
Step 2

Select the geography to review from the **Geography** drop-down menu or leave set to **All** to display both geographies at once. This list is dependent on the failing geographies in the working county. Participants can also filter the errors by selecting the error type from the **Errors** drop-down menu.



Step 3

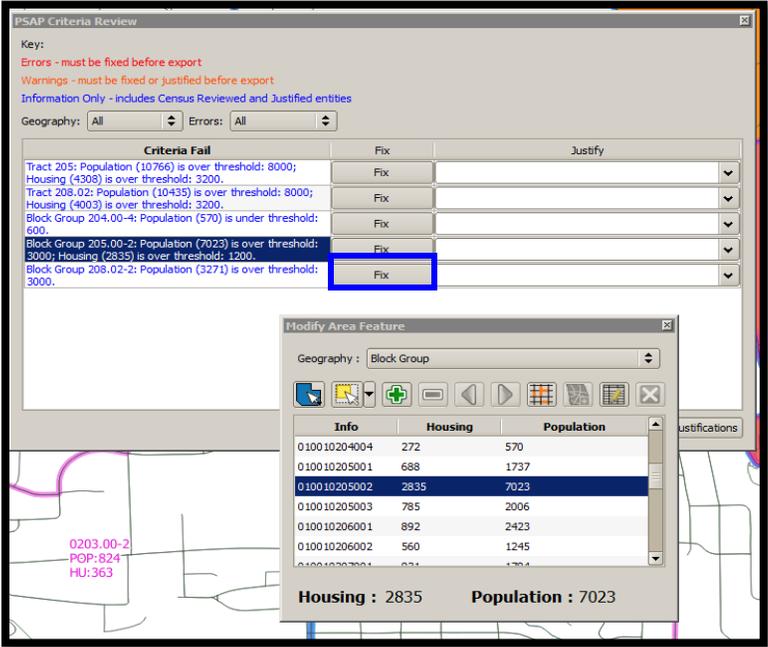
Click on an entity in the **Criteria Fail** list to zoom to that geography on the map.



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

Step 4

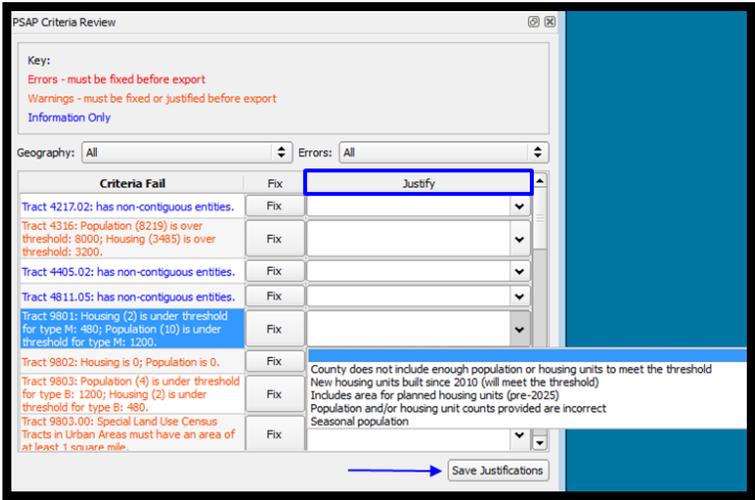
Click **Fix** to open the **Modify Area Feature** tool. Participants use the actions available in the **Modify Feature Area** tool to modify and apply changes to the problematic geography or they provide justification for the geography to remain as-is.



Note: Clicking the **Fix** button in the **Criteria Fail** list selects the same geography in the **Modify Area Feature** tool.

Step 5

Click the **Justify** drop-down menu to see the default justification choices. If none of the choices applies, or if justification that is more detailed is available, participants can type their own justification. Character limit is 150.



Click **Save Justifications** button to save and remove the failure from the list. A save is necessary after each justification.

Note: Attempting to perform another **Fix** before saving the justification invokes a confirmation dialog box that warns participants of the loss of information. Click **OK** to proceed and lose the justification information or click **Cancel** to return and save the last justification.

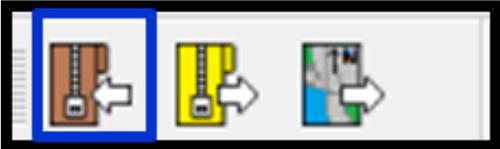
Step	Action and Result
Step 6	Save all changes and execute the PSAP Criteria Review tool again to ensure no failures remain without justification.

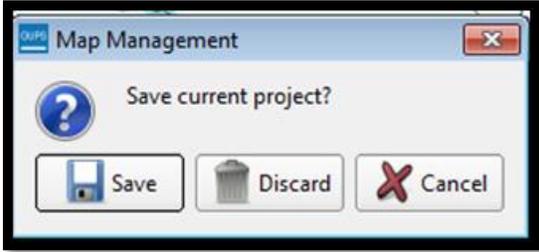
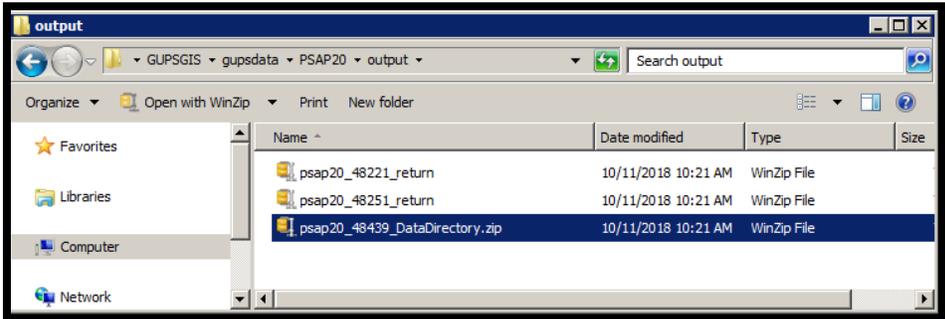
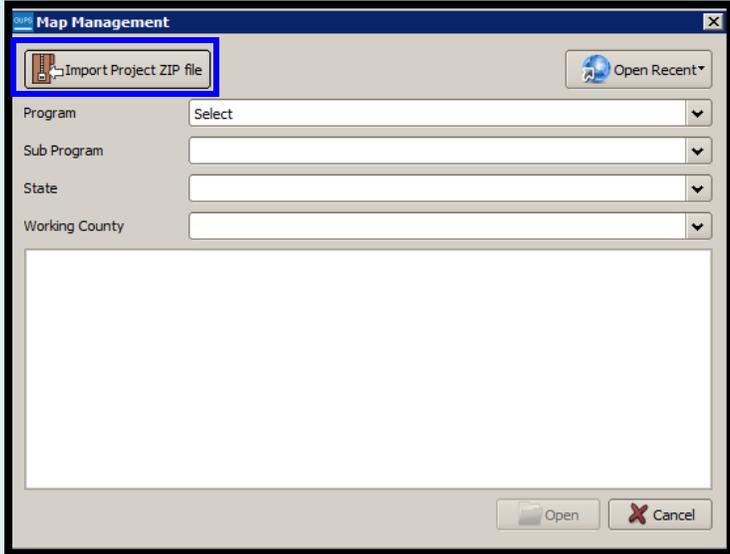
8.4.2.5 Import County Zip Button

The **Import County Zip** button imports a zipped PSAP project shared by another user. The file exported for sharing with another participant, described in [Section 8.4.2.6](#) is the file imported with this button. The “DataDirectory.zip” file becomes the working county. This file contains all the layers for the new project and includes the work performed by the other person in the form of “change layers.” Participants use this tool if they intend to have more than one-person review and update the same working county of if the supervisor/manager wants to review all work prior to making a submission to the Census Bureau. The functionality of the **Import Project ZIP file** button mimics the functionality of the information below; it merely presents the start-up process in a different manner, prior to opening a county. [Table 23](#) includes information for executing the button from the PSAP toolbar and shows an image of the **Import Project ZIP file** button.

IMPORTANT: Using this tool for a participant’s initial review and update means that work must occur sequentially, not concurrently. Parallel work (i.e., work performed independently by two or more people in the same county) cannot be reconciled in GUPS. As a result, this method of work may not be viable for the initial review and update. A decision on this work method is required prior to beginning work on a county. It likely is most useful for conducting quality checks after a working county is complete, prior to submitting it to the Census Bureau.

Table 23: Import County Zip Button

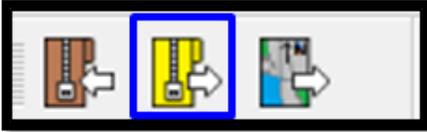
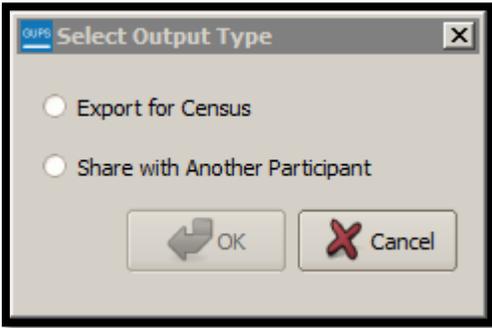
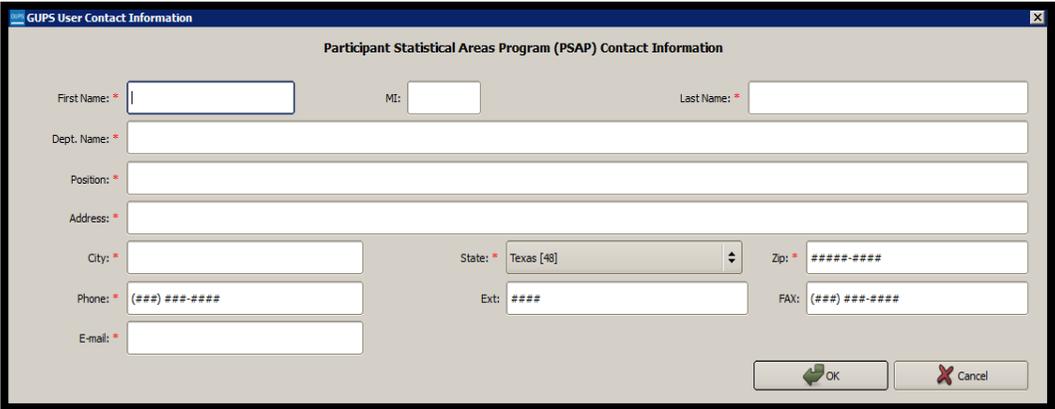
Step	Action and Result
Step 1	Click the Import County Zip button. Because the imported file becomes the working county, the Census Bureau suggests no project be open within GUPS. 

Step	Action and Result
<p>Step 2</p>	<p>If a project is open, a Map Management dialog box opens to either Save or Discard the current project.</p>  <p>After saving or discarding the project, a file explorer window appears allowing participants to navigate to the “output” directory where the .zip file to import is stored.</p>  <p>This is the file created by using the Export to Zip button, Share with Another Participant choice. After importing, participants are able to see the work performed by the previous reviewer and can begin their review and update.</p>
<p></p>	<p><i>This image depicts the Import Project ZIP file button in the Map Management window.</i></p>  <p>As mentioned in the introductory portion of this section, this button mimics the Import County Zip button functionality on the PSAP toolbar. It is available upon initial start-up of a GUPS session. This is the best way to import the shared .zip file rather than using the Import County Zip button from within a working county. Opening by this manner eliminates the Save/Discard window that appears in Step 2.</p>

8.4.2.6 Export to Zip Button

The **Export to Zip** button creates a .zip file containing all the required data and shapefiles for submission to the Census Bureau or to share with other reviewers. Participants that intend to make any change to either the 2020 proposed plan or the 2010 geographies must use this button to create the zip file for submission or for sharing. **Table 24** includes information for executing this button. **Section 10.4** repeats much of the same information, but serves to provide closure to the review and update process at the end of the documentation.

Table 24: Export to Zip Button

Step	Action and Result
Step 1	<p>Click the Export to Zip button.</p> 
Step 2	<p>A Select Output Type dialog box opens with two options: Export for Census and Share with Another Participant.</p>  <p>To share the final edits/changes with the Census Bureau, choose the Export for Census option. To share with other participants to complete edits on the same county, choose Share with Another Participant. The OK button activates upon selection of either choice. The Cancel button activates with the Select Output Type window.</p>
Step 3	<p>A GUPS User Contact Information window opens with the Export for Census option. It requests contact information from the participant. All fields denoted with a red star are required for submission.</p> 

Step	Action and Result
<p>Step 4</p>	<p>Following the completion of the GUPS User Contact Information, the Export to Zip dialog box opens. GUPS generates the .zip file and gives it a name that defines the name of the program (psap20), the working county FIPS ID (48251), and “return” to differentiate the final zip from the zip created for sharing. GUPS automatically saves all exported data within the .zip file in the output directory (e.g., H:\GUPSGIS\gupsdata\PSAP20\output).</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> </div> <p>For participants choosing to Share with Another Participant, GUPS generates a .zip file, stores it in the output directory, and <i>gives it a name similar to the Export for Census file, but uses “DataDirectory” rather than “return.”</i> All of the project files necessary for GUPS to operate correctly bundle together as a result of using this option, while the ‘Export to Census’ bundles only a few layers necessary for processing. Participants must decide early whether they wish to use this functionality, as it does not allow for a concurrent review of a county. Two or more people cannot conduct independent reviews of the same county because their parallel work cannot be reconciled within GUPS.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> </div>

8.4.2.7 Print Map to File Button

The **Print Map to File** button exports and saves a printable map in .pdf, .png, .tif, or jpeg format. [Table 25](#) includes information for executing this button.

Table 25: Print Map to File Button

Step	Action and Result
<p>Step 1</p>	<p>Click the Print Map to File button</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> </div>

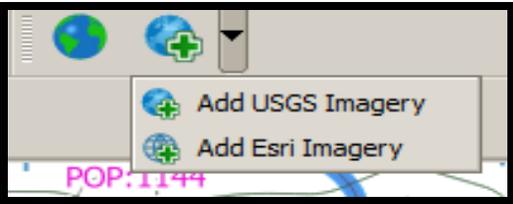
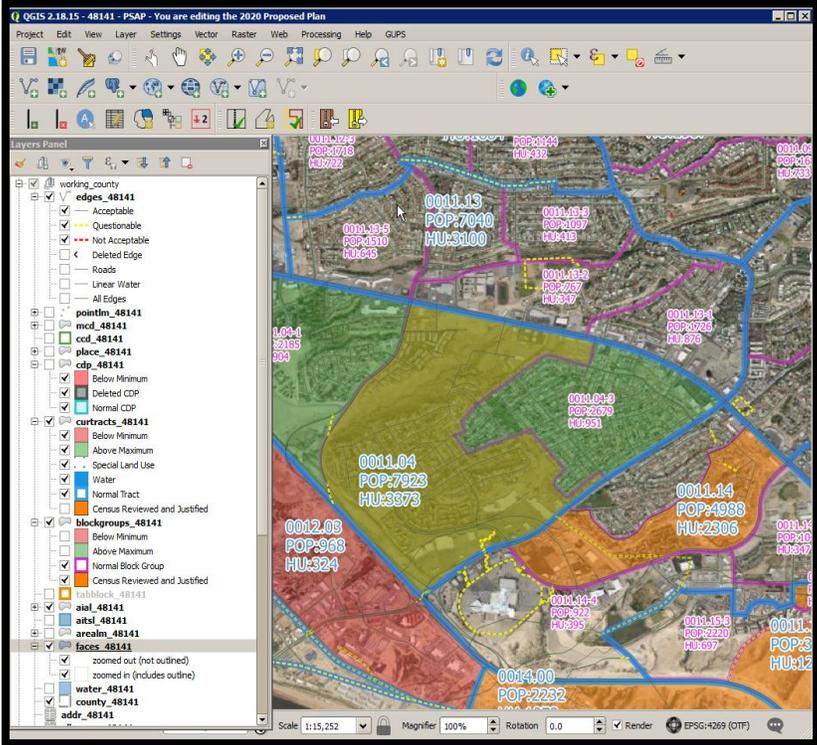
Step	Action and Result
<p>Step 2</p>	<p><i>The Print Map to File dialog box opens.</i></p> <div> </div> <p>Enter the Map Title and Map Sub-Title under Desired Map Titles: section. Click the radio button for Portrait or Landscape under Page Orientation: section. Set the map scale to Match Current Map Extent or Fixed Scale in the Map Scale: section. Choose the page size in the Desired Page Size: section and the file format in the Export File Format: section. Click Save to create a map or Cancel to close the window.</p> <p>If choose to Save, a <i>Windows Explorer</i> window opens to specify a file name for the exported map. As with the .zip file export described in the previous section, GUPS automatically saves all exported map files in the same output directory (e.g., H:\GUPSGIS\gupsdata\PSAP20\output), but participants can change the destination folder to their preference.</p>

8.4.2.8 Add Imagery Button

The **Add Imagery** button adds imagery to the GUPS map view. An internet connection is required. [Table 26](#) includes information for executing this button.

IMPORTANT: The Census Bureau strongly encourages participants to utilize this tool in order to visualize the boundaries of the statistical geographies and orient participants to the area under review.

Table 26: Add Imagery Button

Step	Action and Result
Step 1	<p>Click the Add Imagery button.</p> 
Step 2	<p>Participants choose to add USGS or Esri imagery.</p> 
Step 3	<p>After selecting imagery, it appears in the Map View beneath the displayed geographies.</p>  <p>Note: The Census Bureau requests the use of imagery in order to provide the visual reference necessary to orient participants and to initiate any changes to the statistical geographies.</p>

8.4.3 Manage Layers Toolbar

The **Manage Layers toolbar**, shown below in [Figure 17](#), supplements the **Add Imagery** button within the **PSAP toolbar**. It offers additional QGIS functionality that allows participants to import their own imagery, geodatabase, web mapping service, or other data layers into the GUPS. [Table 27](#) describes these buttons, but for exact detail on the functionality refer to the QGIS website provided in Part Two.



Figure 17. Manage Layers Toolbar

Table 27: Manage Layers Toolbar Buttons, Names, and Functions/Descriptions

Button	Name	Function / Description
	Add Vector Layer	Click the Add Vector Layer button to add shapefile and geodatabase files to the GUPS project.
	Add Raster Layer	Click the Add Raster Layer button to add raster datasets such as imagery to the GUPS project.
	Add SpatialLite Layer	Click the Add SpatialLite Layer button to add data from a SpatialLite database.
	Add PostGIS Layers	Click the Add PostGIS Layers button to add data from a PostGIS layer, a MSSQL spatial layer, a DB2 spatial layer, or an Oracle spatial layer.
	Add WMS/WMTS Layer	Click the Add WMS/WMTS Layer button to add data from Web Mapping Services (WMS), Web Mapping Tile Services (WMTS), or from ArcGIS MapServer. GUPS supports publicly accessible and secured map services.
	Add WCS Layer	Click the Add WCS Layer button to add data from Web Coverage Services, which provide access to raster data useful for client-side map rendering.
	Add WFS Layer	Click the Add WFS Layer button to add data from Web Feature Services or from ArcGIS FeatureServer.
	Add/Edit Virtual Layer	Click the Add/Edit Virtual Layer button to add or edit a virtual layer. PSAP does not use.
	New Shapefile Layer	Click the New Shapefile Layer button to create a new shapefile layer or new temporary scratch layer. This button is inactive and not useful for PSAP.

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

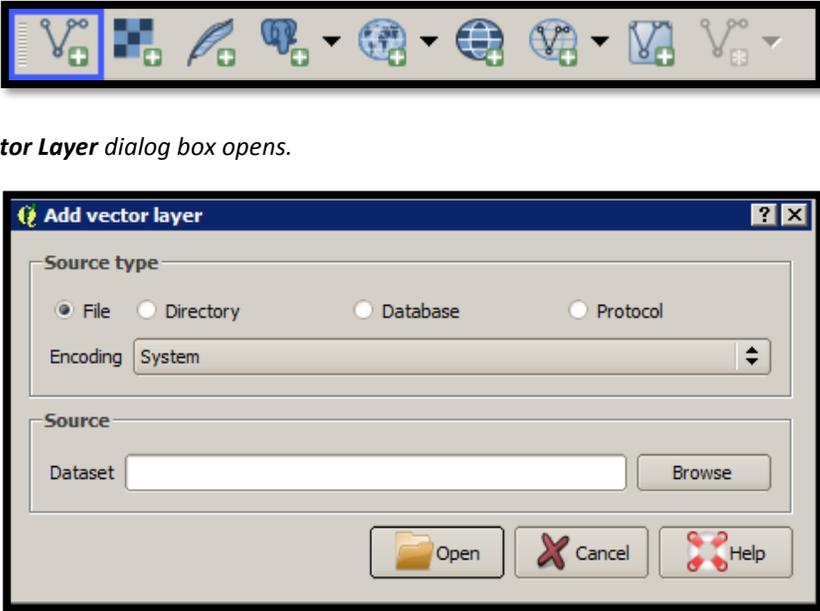
Participants may only upload one participant-provided data layer at a time. Participants with multiple data layers to upload must work with one and close it before loading another. Below are the steps to import the most commonly used data formats.

8.4.3.1 Add Vector Layer Button

The **Add Vector Layer** button described in [Table 28](#) allows participants to add shapefile or geodatabase data layers.

Table 28: Add Vector Layer Button

Step	Action and Result
Step 1	Click the Add Vector Layer button on the Manage Layers toolbar.

Step	Action and Result
	 <p>The Add Vector Layer dialog box opens.</p>
Step 2	In the Encoding drop-down menu, the default value is System . If an error message is received, use the drop-down to select UTF-8 .
Step 3	Click the Browse button in the Source section to navigate to the folder and locate the shapefile or geodatabase to select. Click the filename to populate the Dataset field.
Step 4	Click the Open button to add the shapefile/geodatabase to the Table of Contents and to the Map View window and Table of Contents .

8.4.3.2 Add WMS/WMTS Layer Button

The **Add WMS/WMTS Layer** button allows participants to load data from a web mapping service, web mapping tile service, or ArcGIS MapServer. [Table 29](#) describes the steps for using the button below.

Table 29: Add WMS/WMTS Layer Button

Step	Action and Result
Step 1	Click the Add WMS/WMTS Layer button on the Manage Layers toolbar . Dependent on the service selected, either <i>the Add Layer(s) from a WM(T)S Server</i> or <i>the Add ArcGIS MapServer Layer dialog box</i> opens. This example depicts adding a WMS.
Step 2	Select the WMS to add. Click the Layers tab and click the New button under the tab. <i>The Create a new WMS Connection dialog box</i> opens.
Step 3	In the Name field, type a name for the web mapping imagery service. In the URL field, type (or copy/paste) the URL for the service. If the service requires a user name and password, type them in the fields provided. Click OK . <i>The service adds to the drop-down menu for web mapping services appearing just below the Labels tab.</i> Note: If working inside a firewall, the system may prompt for a user name and password to obtain resources from outside the firewall.
Step 4	Select the imagery service from the drop-down menu. The available layers appear in the ID/Name/Title/Abstract box.

Step	Action and Result
Step 5	<p>Click on the layer to display, then click the Add button to add the service to the Table of Contents and to the Map View window.</p> <p>Note: The WMS displays on top of the other layers selected in the Map View, but participants can move it by clicking the WMS layer and, while holding down the mouse button, dragging it to the bottom of the Table of Contents.</p>

If participants do not have access to a web mapping service, have a poor Internet connection, or work under a restrictive firewall, they can still add other types of imagery files to GUPS (e.g., a county or state imagery dataset). The **Add Imagery** button automatically links to the USGS and Esri imagery. [Table 26](#) discusses its use.

8.4.3.3 Add Raster Layer Button

The **Add Raster Layer** button allows participants to add imagery files they may have on their own system. [Table 30](#) covers the few steps necessary to add raster data, i.e., imagery files.

Table 30: Add Raster Layer Button

Step	Action and Result
Step 1	Click the Add Raster Layer button on the Manage Layers toolbar. <i>The Open a GDAL Supported Raster Data Source dialog box opens.</i>
Step 2	Navigate to the folder on the computer (or network) where the imagery file is stored.
Step 3	Select the file and click Open . <i>The file loads into the GUPS.</i>

PART 3 USING GUPS FOR 2020 CENSUS PSAP

This portion of the Respondent Guide includes guidance for the use of GUPS to conduct PSAP review from either the 2020 proposed plan or the 2010 geographies. It provides specific instructions for using the GUPS tools to review and perform updates on the relevant geographies. The methods for reviewing and updating boundaries for census tracts, block groups, and CCDs are the same.

The next three chapters cover the following content:

Chapter 9 Review and Update of PSAP Geographies

- Guidance for the review PSAP geographies.
- Instruction for the update of each of the four standard PSAP geographies.
 - Census tracts.
 - Block groups.
 - Census designated places (CDPs).
 - Census county divisions (CCDs).

Chapter 10 Validate Data and Prepare Files for Submission

- Instructions for using the GUPS review tools to validate data.
 - PSAP Criteria Review Tool.
 - Geography Review Tool.
 - Review Change Polygon Tool.
- Instructions to prepare files for submission.
 - Export .zip files to share.
 - Export .zip files to submit.

Chapter 11 Secure Web Incoming Module (SWIM)

- Instructions to establish account.
- Instructions to submit files.

CHAPTER 9. REVIEW AND UPDATE OF PSAP GEOGRAPHIES

The Census Bureau requests participants evaluate land use characteristics and settlement patterns to make informed decisions to resolve any issues with existing statistical geographies. The Census Bureau recommends using two primary datasets within GUPS to perform the PSAP review: the edges layer to determine the type of linear features used for boundaries and aerial imagery to clarify questions on land use and settlement patterns.

A linear feature in the edges layer can be visible, such as a road or a shoreline, or non-visible, such as the legal limits of a city or a parcel property line. Linear features are coded by type in the MAF/TIGER database with an 'MTFCC', a 5-digit alphanumeric string such as 'S1400' (Local Road) or 'H3010' (Stream/River), and are named where applicable (e.g. 'Harley Ave.' or 'Little Bend River'). While review is subjective, normalizing the methods of evaluation and features for consideration help provide a framework for a consistent review and lays the foundation for consistently reviewed geographies.

Mentioned in [Table 26](#), aerial imagery is a background layer that pulls tiles from either the National Agriculture Imagery Program (NAIP) or Esri into the extent of the working county in GUPS. The NAIP dataset originates from the USGS National Map Orthoimagery service. Both USGS and Esri imagery loads dynamically at the viewable scale in the QGIS map canvas. These images are typically one-meter resolution, with some areas having access to sub-foot resolution imagery and a few very remote places (typically interior Alaska) having coarser or even no available imagery. With each pixel in the image corresponding to one square meter of ground surface, determining land use classification through the presence or absence of vegetation, the type and distribution of structures through identification of roofs, and major landmarks such as stadiums is possible. At this resolution, participants are also able to verify placement of visible linear features in the edge layer in most cases.

As important as understanding the GUPS mechanics and the PSAP criteria, the basic concepts of utilizing imagery and understanding the linear features that comprise the statistical geographies is vital to a successful 2020 Census PSAP.

9.1 Review of PSAP Geographies

For 2020, the Census Bureau offers two approaches for the review and update of statistical geographies. Participants can review the 2020 proposed plan or they can review the 2010 geographies. The next two sub-sections describe each of these approaches in order for participants to decide which approach best fits their situation.

IMPORTANT: After reviewing the statistical geographies in GUPS and determining the update status of the materials, please complete the postcard (P-300) included with the delineation materials indicating whether changes are forthcoming. The receipt of this postcard assists the Census Bureau with planning for incoming submissions. The Census Bureau requests the return of this postcard within a month of receipt of the materials.

9.1.1 Review from the 2020 Proposed Plan

Though the Census Bureau generated the 2020 proposed plan to alleviate PSAP respondent burden, the 2020 proposed plan also serves as a means to encourage a thorough review and program participation. The two specific geographies, census tracts and block groups, comprise the 2020 proposed plans. No 2020 proposed changes are included for CDPs or CCDs. The Census Bureau anticipates proposed CDP changes will appear in the verification phase materials.

Be aware the Census Bureau used estimates (population and housing) to prepare the 2020 proposed plans. The Census Bureau encourages participants to review the proposed plan closely and update it based on their local knowledge, historical insight of the area(s), and other key factors of which they may only be aware.

To begin a review of the 2020 proposed plan, GUPS functionality facilitates comparison with the 2010 geography using the supplemental reference layers and symbolization when creating the GUPS project (e.g., “2010_Geographies” layers). Refer to [Appendix E](#) for details on various supplemental sources that can assist participants during 2020 Census PSAP. The [Geography Review Tool](#) Button described in [Section 8.4.2.2](#) (to browse the 2020 layers) and a county level list of entities that have changed significantly from 2010 are leveraged during the review of the 2020 proposed geographies. To use these tools and data, after selecting the 2020 proposed plan when opening the [Modify Area Feature Button](#) detailed in [Section 8.4.2.1](#), the Census Bureau suggests participants:

- Open the list of changed entities (e.g., psap20_proposed_changes_<SSCCC>.xlsx) described in [Section 1.1](#) outside of GUPS. Copy the first value in the TRACTCE field.
- In GUPS, open the **Geography Review Tool** and execute the following four steps:
 - Select “curtracts_STCOU” layer from the **Layer Name** drop-down menu.
 - Select “TRACTCE” from the **Column Name** drop-down menu. Paste the TRACTCE value copied from the list of changed entities Microsoft Excel file into the search field at the bottom of the screen and click the **Search** button.
 - Highlight the row with the TRACTCE value in the table view.
 - Click **Zoom**.
- Once located, click the Deselect Features from all Layers button from the Attributes toolbar.
- Scroll to the **2010_Geographies** layer in the **Table of Contents** and expand it by clicking the ‘+’ to the left of the layer name.
- Check the “curtracts2010_STCOU” to display the 2010 census tract geography.
- Correct any changes made by Census Bureau based on local knowledge and experience by using the **Modify Area Feature** tool and repeat the process for every record with a TRACTCE value and an empty BLKGRPID value.
- Repeat the previous **Geography Review Tool** steps replacing census tracts for the block groups.
 - Copy the first value present in the BLKGRPID field from the list of changed entities file.
 - Select “blockgroups_STCOU” layer from the **Layer Name** drop-down menu.
 - Select “BLKGRPID” from the **Column Name** drop-down menu. Paste the BLKGRPID value copied from the list of changed entities into the search field at the bottom of the screen and click the **Search** button.
 - Highlight the row with the BLKGRPID in the table view.
 - Click **Zoom**.
- Once located, click the **Deselect Features from all Layers** button from the **Attributes toolbar**.

- Scroll to the **2010_Geographies** layer in the **Table of Contents** and expand it by clicking the ‘+’ to the left of the layer name.
- Check the “blockgroups2010_STCOU” to display the 2010 block group geography.
- Correct any changes made by Census Bureau based on local knowledge and experience by using the **Modify Area Feature** tool and repeat the process for every record with a BLKGRPID value. No action is necessary if the change made by the Census Bureau is agreeable to the participant.

With all the changed census tracts and block groups reviewed, perform the following steps:

- Execute the **PSAP Criteria Review** tool to see any new threshold failures introduced by the participant updates
 - Begin with the census tracts. Review, edit, or justify the failures that are above the criteria thresholds and then those that are below thresholds. Conduct the same review for the block groups, then review and update the CDPs and finish with the CCDs.
- Execute the **Review Change Polygons** tool to review changes introduced by the participant and make additional adjustments if necessary.
- Execute the **Geography Review Tool** again to provide another overall review of the new or deleted entities, or the entities with boundary changes.

IMPORTANT: If a participant disagrees with a majority of the changes in the 2020 proposed plan or if they want to work fresh from the 2010 data, they **MUST** launch the **GUPS Data Settings** tool described in **Table 14** to execute a “Clean by Project” task. GUPS does not overwrite a working county that has begun review in GUPS. The initial launch of the **Modify Area Feature** tool sets the geography selection that cannot be reset without a “clean.”

In addition to using the list of changed entities to focus a participants’ review, an initial review of the curtracts2010_STCOU and blockgroups2010_STCOU layers is possible by visually reviewing the below minimum (red shading) and above maximum (green shading) geographies. “Normal” census tracts and block groups will be absent of shading. See **Figure 18** for a visual from the **Table of Contents** in county 48251 for 2010_Geographies.

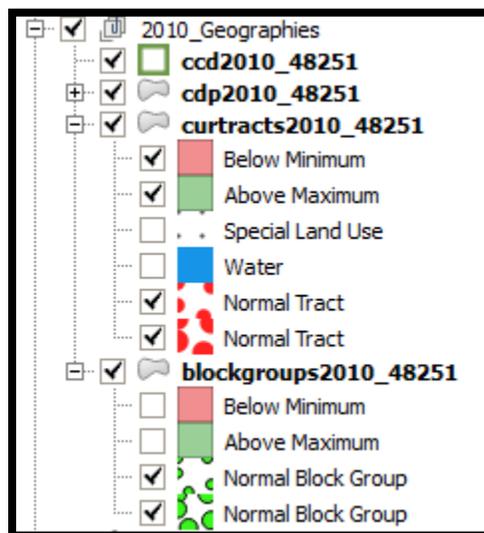


Figure 18. 2010 Geographies in the Table of Contents

Clearing the threshold failures (above maximum thresholds and below minimum thresholds of each of the statistical geographies) is the minimum required to participate in PSAP. If time permits, the Census Bureau encourages the review of all remaining geographies.

Once satisfied with the geographies, export the files for submission to the Census Bureau. [Chapter 10](#) within this part of the Respondent Guide describes the use of the aforementioned tools.

Note: Participants visualize the threshold failures in the **Map View** and in the **Table of Contents** depicted in red (below threshold criteria) and green (above threshold criteria).

9.1.2 Review from the 2010 Geographies

Beginning the PSAP review from the 2010 geographies instead of the 2020 proposed plan means that participants must resolve all threshold failures that exist within the working county, or provide justifications for not correcting the failures. As with a review and update from the 2020 proposed plan, clearing the threshold failures (above maximum thresholds and below minimum thresholds of each of the statistical geographies) is the minimum required to participate in PSAP. If time permits, a review of all of the statistical geographies is encouraged as a form of validation of the existing statistical geographies.

To begin a review of the 2010 geographies, the Census Bureau suggests participants use the **Modify Area Feature** tool, described in [Section 9.2.1](#), to review and update the statistical geographies that do not meet the required thresholds (whether population and/or housing).

- Begin the review with census tracts. Review and update the failures that are above the criteria thresholds and then those that are below thresholds. Conduct the same review for the block groups, then review and update the CDPs and finish with the CCDs. Use the instructions mentioned in [Section 9.1.1](#) regarding a review of the 2010 layers to assist with locating the failing geographies or simply let the GUPS tools locate the problem geographies.
- Time permitting, review the boundaries of the statistical geographies.
- Execute the same three validation tools described in [Section 9.1.1](#), the PSAP Criteria Review tool, the Review Change Polygons tool, and the Geography Review Tool.
- Once satisfied with the geographies, export the files for submission to the Census Bureau.

[Section 9.2](#) details the various steps necessary for updating the four standard statistical geographies.

9.2 Update of PSAP Geographies

Once the decision on which version of geography to review is made, the update process can begin. The content in this section is prepared and presented from the perspective of making changes, regardless of the source of the geography. There may be some variance on functionality and guidance dependent on the source of the geography under review; i.e., review of 2020 proposed plan vs. review of 2010 geographies. Focus on the function of the tool, not the version of geography used to apply the change.

Although this section of the guide focuses on updating statistical geographies to meet criteria thresholds, there are some scenarios where it is better to maintain the existing geography regardless of any changes that may have occurred since the last decennial census. Some situations where this may be appropriate include the following:

- Existing special land use areas.
- Areas of seasonal or vacation housing (usually with skewed population and housing ratios).
- Ultra-high density urban areas with the inability for further splitting.
- Underlying problem with legal boundaries used as statistical boundaries.

9.2.1 Modify Area Feature Tool

The **Modify Area Feature** tool introduced in [Section 8.4.2.1](#) enables participants to apply a search filter to each PSAP geography to locate the entities that do not meet specified criteria such as below minimum, above maximum, water, special land use, and AIR/ORTL/Hawaiian Home Lands (HHL). It enables participants to perform specified actions such as merge, boundary change and split to entities to meet criteria and thresholds.

IMPORTANT: The Modify Area Feature tool is the main tool participants use to make changes to the statistical geographies. All of the upcoming sections in this chapter reference use of this tool.

Table 31 summarizes the different actions that the GUPS participant will be able to apply to each of the geographies as well as the filter options and definitions of the population and housing unit criteria.

Table 31: Modify Area Feature Actions by Statistical Geography

Geography	Action	Filter Options	Population and Housing Units Criteria	Change Types
Census tract	Merge, Boundary Change, Split by Block Group, Split by Face, and Change Attributes.	No filter, Below Minimum, Above Maximum, Water, Special Land Use	Census tract is BELOW the minimum population (<1,200) OR housing unit (< 480) threshold. Census tract is ABOVE the maximum population (> 8,000) or housing unit (> 3,200) threshold.	M for Merge, B for Boundary Change, E for Split, and G for Attribute Change. These codes manifest most notably in the Review Change Polygons tool.
Block group	Merge, Boundary Change, Split, and Change Attributes.	No filter, Below Minimum, Above Maximum	Block group is BELOW the minimum population (<600) OR housing unit (< 240) threshold. Block group is ABOVE the maximum population (> 3,000) or housing unit (> 1,200) threshold.	M for Merge, B for Boundary Change, E for Split, and G for Attribute Change. These codes manifest most notably in the Review Change Polygons tool.

Geography	Action	Filter Options	Population and Housing Units Criteria	Change Types
Census designated place (CDP)	Boundary Change, New District, and Change Attributes.	No filter, Below Minimum	None, but must contain some population, housing units, or both.	B for Boundary Change, E for New District (CDP), G for Attribute Change, and X for Deleted CDP. These codes manifest most notably in the Review Change Polygons tool.
Census county division (CCD)	Merge, Boundary Change, New District, and Change Attributes.	The Filter option section does not exist for CCDs	None, but since comprised of census tracts the housing and population totals mimic those of that geography.	M for Merge, B for Boundary Change, E for New District (CCD), and G for Attribute Change. These codes manifest most notably in the Review Change Polygons tool.

Note: The **Change Attributes** choice is not within the **Action** drop-down menu, but appears within the **Modify Area Feature** tool window above the **Information** section after a participant selects the **Geography** and **Action**.

9.3 Census Tract Update Instructions

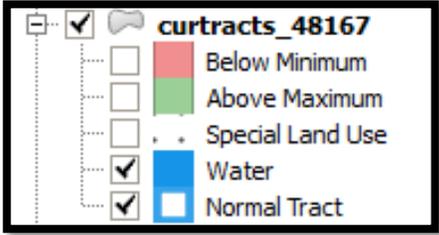
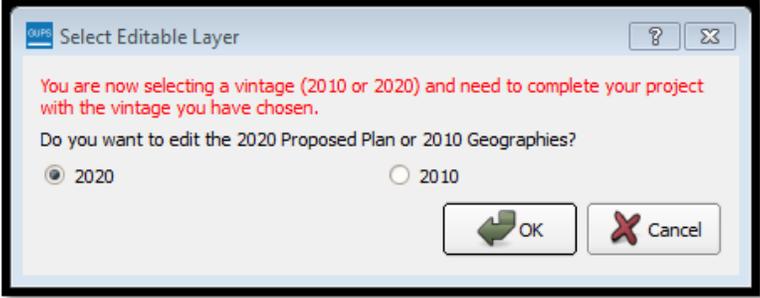
A century of census tract use, along with the ACS and the averaging of sample data for tracts over a five-year span, has shown that continuity and comparability in tracts and their boundaries over time are of considerable importance to data users. Pursuant to this goal, the Census Bureau requests that where a census tract must be updated, for example to meet the minimum or maximum population or housing unit thresholds, that the outer boundaries of the tract not be changed, but rather that a tract be split into two or more tracts, or merged with an adjacent tract. Over time, the Census Bureau developed a set of standards to guide the establishment and revision of census tracts. These practices and rules promote census tract consistency nationwide, and serve to meet local needs for small-area data.

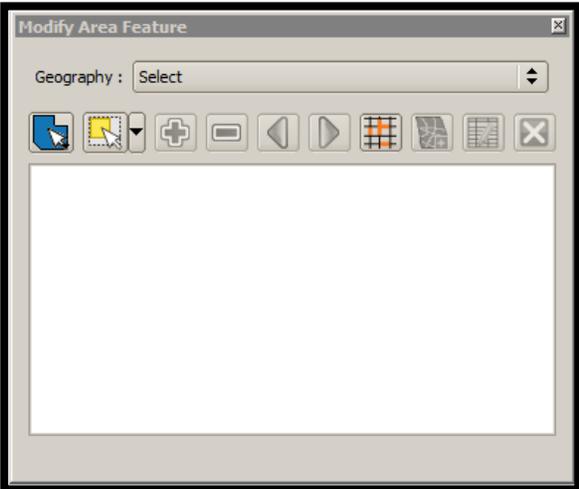
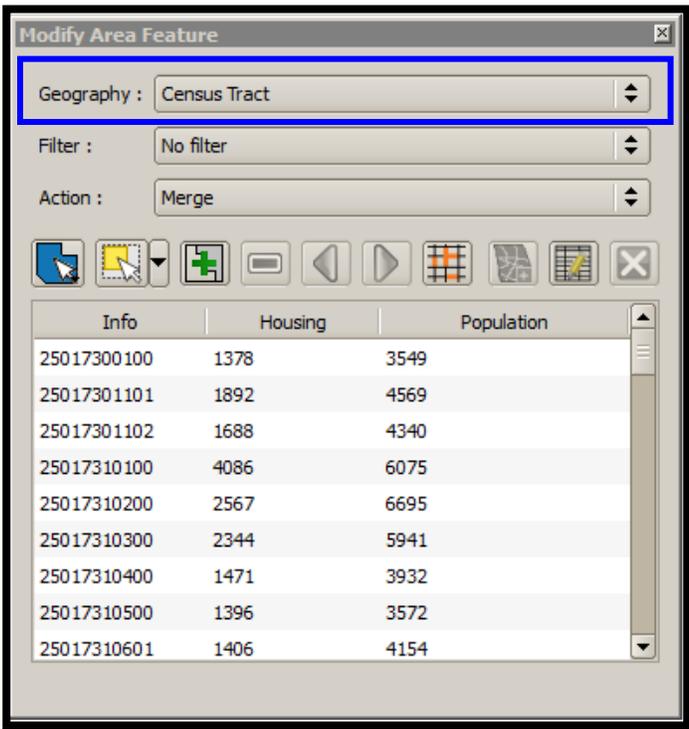
For 2020 Census PSAP, participants can split census tracts, either by using whole block groups or by using individual faces (areas). They can merge census tracts and change census tract boundaries, where the boundary has become errant. The Census Bureau discourages drastic changes to tract boundaries (that is, “retracting”), except in specified circumstances, which the Census Bureau will review on a case-by-case basis. It is not recommended to modify the external boundary of a census tract to resolve a threshold problem.

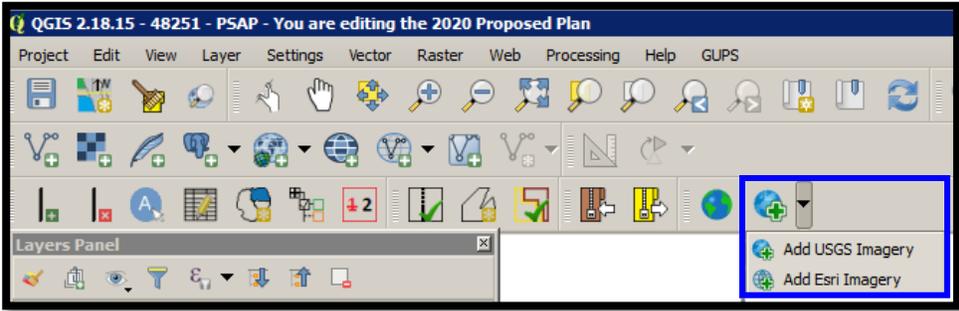
9.3.1 Select Census Tracts

Participants can change and modify census tracts, which modifies block groups automatically. Steps to select census tracts are included in [Table 32](#).

Table 32: Select Census Tracts

Step	Action and Result
Step 1	Download and review the data as described in Section 7.2, Open GUPS and Start a New Project .
Step 2	<p>Once loaded, GUPS displays all the data layers on the Map View formatted with color, style and labels. For this example, the “curtracts” is the Census Tract layer, has five different categories: Below Minimum and Above Maximum (both based on the total population and number of housing units); Special Land Use; Water; and Normal Tract.</p>  <p>GUPS uses assorted colors to classify the census tracts by housing units and population counts. The red fill indicates census tracts below minimum housing units and population counts. The green fill indicates census tracts above the maximum thresholds. The census tracts with no fill are “Normal Tracts” within the thresholds desired by the PSAP program.</p> <p>The entities grouped under Below Minimum and Above Maximum category require local knowledge of the land use, housing units’ type and population characteristics. Participants are required to further review and either apply the necessary actions to change entities using the Census requirements and guidelines. If no action is applied, participants must provide a Justification to maintain the entity.</p>
Step 3	<p>Click the Modify Area Feature button to start editing the layers within the selected county.</p> 
Step 4	<p>The Select Editable Layers window appears to choose the vintage to edit. The 2020 vintage is stored in the 2020 Proposed Plan. The 2010 vintage is stored in the 2010 geographies. Select the vintage radio button and then click OK button.</p>  <p>Note: This action occurs with the initial launch of the Modify Area Feature tool in the working county. This menu does not reappear with subsequent launch of the tool.</p>

Step	Action and Result
<p>Step 5</p>	<p>The Modify Area Feature dialog box displays in the center of the screen.</p>  <p>The Census Bureau suggests participants move the Modify Area Feature window to the upper left corner of the Map View. Moving the window allows the participant to have a full view of the map.</p>
<p>Step 6</p>	<p>Within the Modify Area Feature window, click the Geography drop-down menu to select Census Tract.</p>  <p>Regardless if participants selected 2020 vintage or 2010 vintage as the editable layer they should start reviewing and editing first, the Census Tracts layer with above maximum population counts or housing units. Second, the Census Tracts layer with below minimum population counts or housing units. Third, the Block Groups layer with above maximum population counts or housing units. Fourth, the Block Groups layer with below minimum population counts or housing units. Then the participants can move to reviewing the CDPs and the CCDs.</p>

Step	Action and Result
Step 7	<p>As noted earlier in Section 8.4.2.8, the Census Bureau strongly encourages the use of imagery to review and update the geographies. To enable imagery, click the Add Imagery button and choose the imagery source to display in the Map View.</p>  <p>Once selected the imagery displays in the Map View.</p>

9.3.2 Split Census Tracts by Block Group

To resolve the census tracts above the maximum threshold, participants can split census tracts by block group within the failing census tract. Splitting by block group is the first preference for splitting a census tract because it retains the boundaries of the new tract on features already in use for statistical geographies (block groups). See [Figure 19](#) for an example that depicts three total block groups, one split from the other two to form a new census tract.

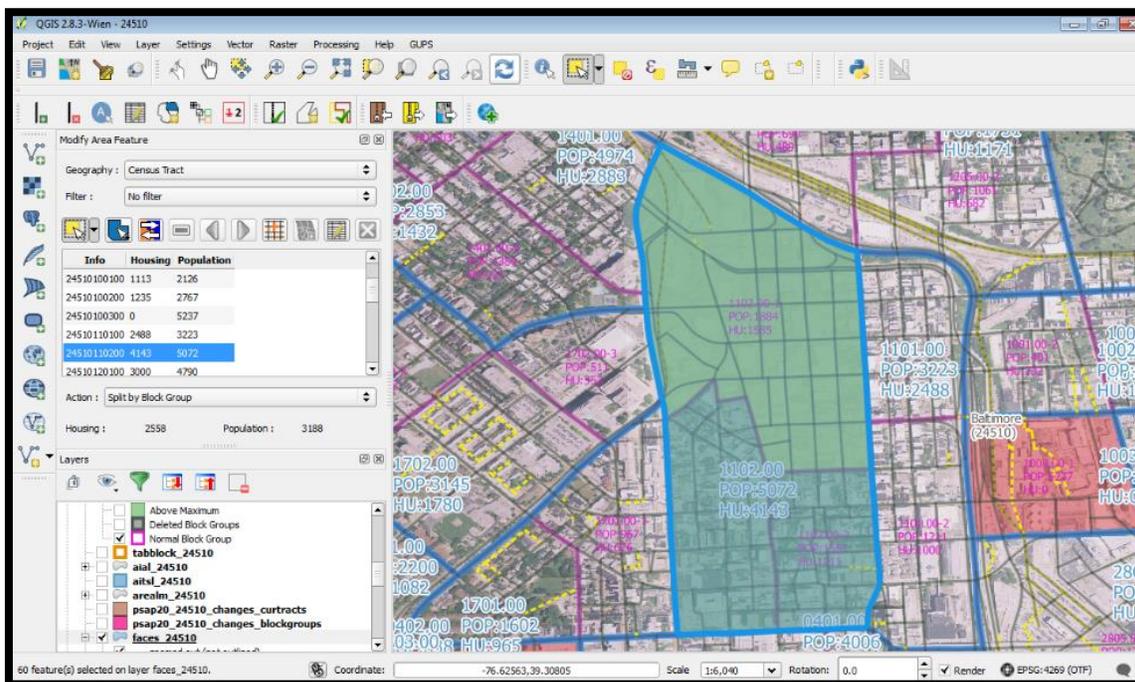
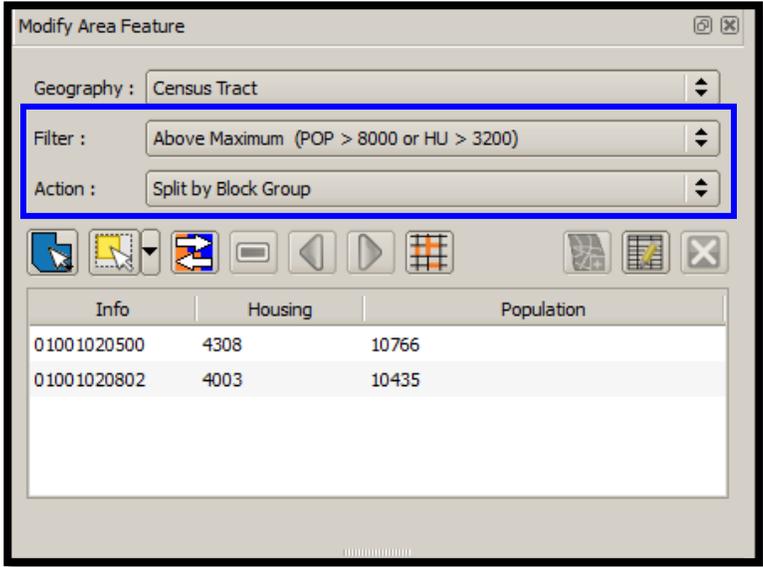
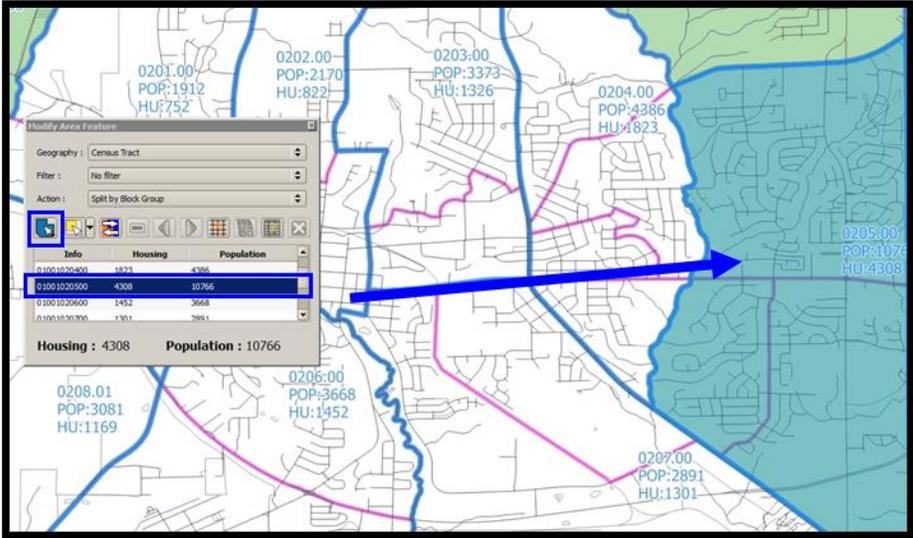


Figure 19. Splitting a Census Tract by Block Group Example

[Table 33](#) explains the steps to split a census tract by block group(s).

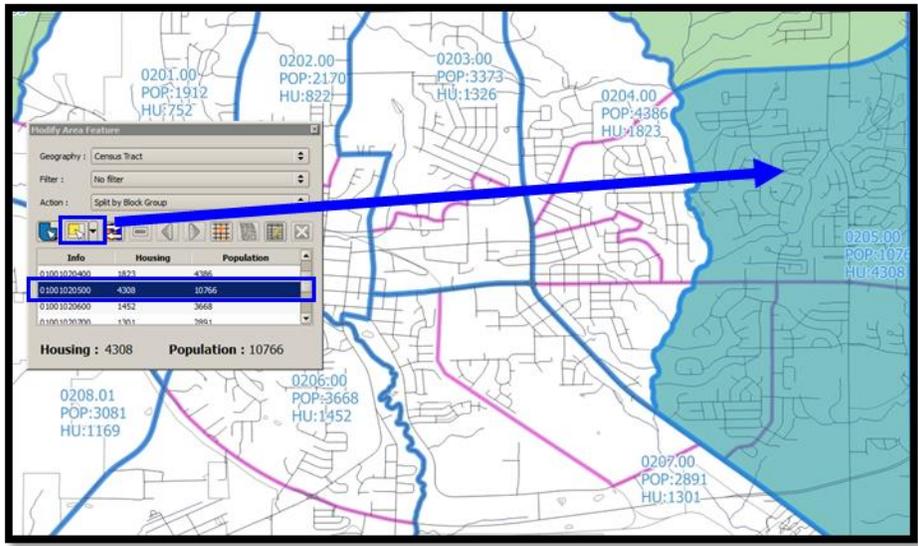
Table 33: Split Census Tracts by Block Group

Step	Action and Result									
Step 1	Follow steps from Table 32: Select Census Tracts to open the project and select a census tract for editing.									
Step 2	<p>Within the Modify Area Feature window, click the Filter drop-down menu to select Above Maximum (POP > 8000 or HU > 3200). <i>This selects all census tracts that have more than the maximum number of housing units or total population.</i> Change the Action drop-down to Split by Block Group. <i>This allows participants to split the census tract by block group(s).</i></p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>01001020500</td> <td>4308</td> <td>10766</td> </tr> <tr> <td>01001020802</td> <td>4003</td> <td>10435</td> </tr> </tbody> </table>	Info	Housing	Population	01001020500	4308	10766	01001020802	4003	10435
Info	Housing	Population								
01001020500	4308	10766								
01001020802	4003	10435								
Step 3	<p>Click Select Target Area button and click on the map to select a census tract OR double click to select a census tract from the Info column within the Modify Area Feature window. <i>The Map View zooms to the selected census tract to review for potential splitting and highlights it in light blue/green color.</i></p>  <p><i>The housing and population totals displays on the bottom of the Modify Area Feature tool.</i></p>									

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

Step 4

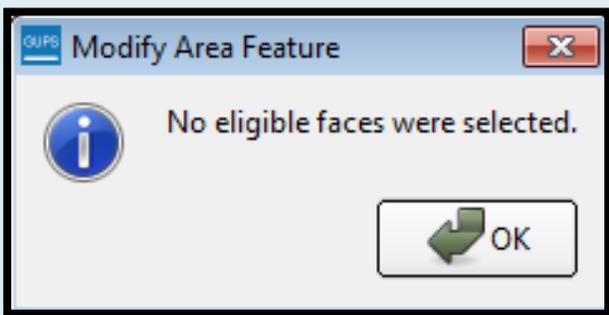
Click the **Select Features by Area** button with a single click on the **Map View** to select a single block group. Hold down the Ctrl key on the keyboard and then click to select additional block groups as needed. Participants can also click the **Map View** and drag the mouse to select multiple block groups. *The selected block group(s) highlight and the housing units and population numbers change dynamically.*



IMPORTANT: Remember to keep the census tract threshold numbers in mind:
 Population: 1,200 – 8,000 **Optimum: 4,000**
 Housing: 480 – 3,200 **Optimum: 1,600**



Participants are only able to select block group(s) within the highlighted census tract. *Selecting block group(s) outside the highlighted area will result in an error message.*

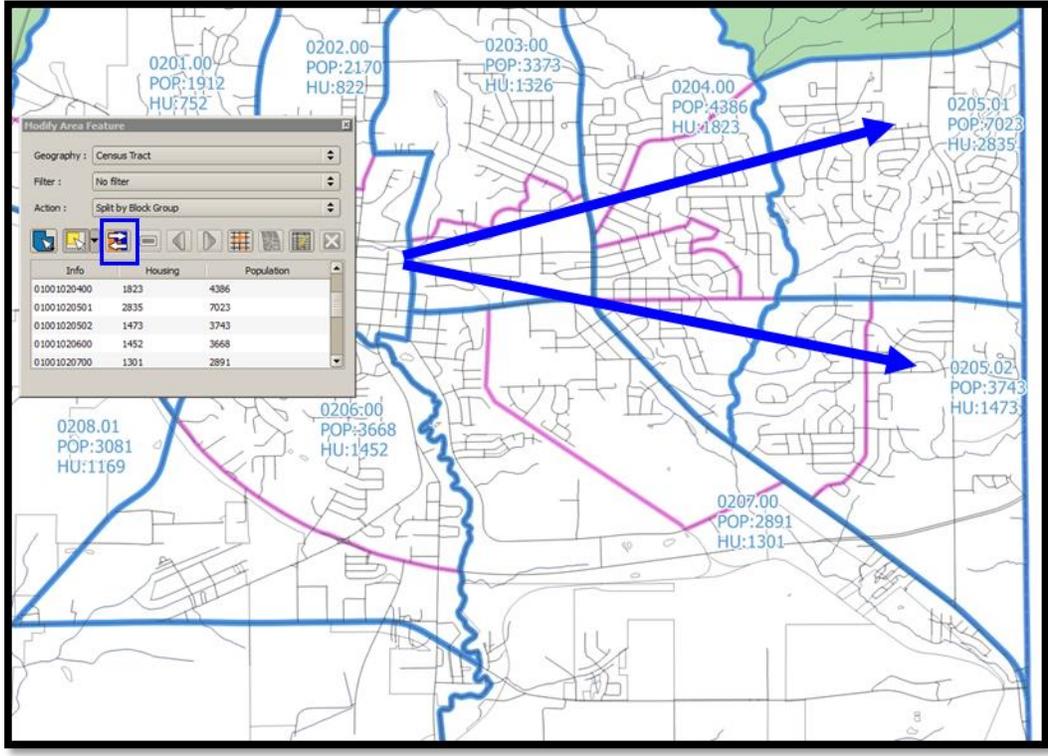


Click **OK** to dismiss the error and continue.

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

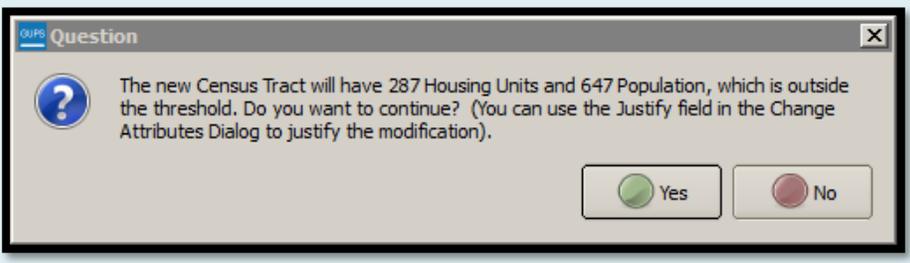
Step 5

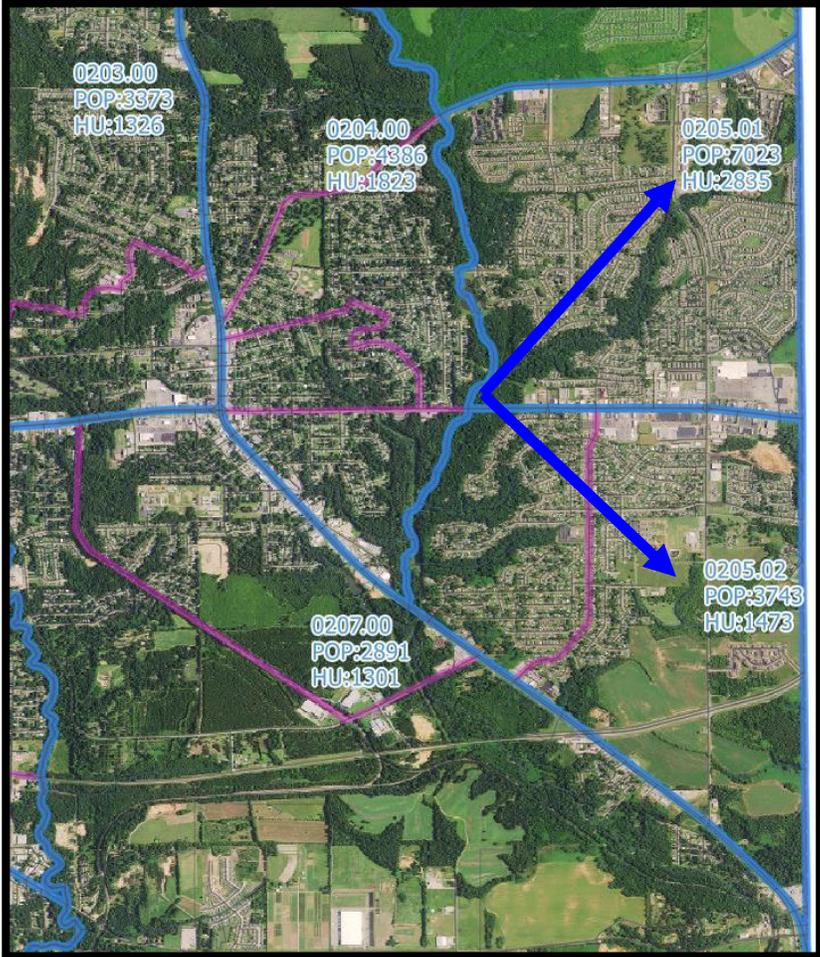
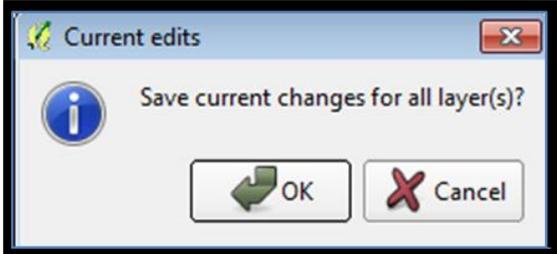
If the selected block groups generate a valid new census tract, click the **Split by Block Group** button to create two new census tracts.





If a **Question** window displays showing that the selection is outside the threshold of acceptable ranges, participants need to either justify this threshold violation or select additional geographies to meet the required threshold. Click **YES** if satisfied with new census tracts. Click **NO** if not satisfied and would like to revise.



Step	Action and Result
<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS created the new census tracts with new census tract numbers. If completed successfully, the two new tracts have no shading (no red or green) unless they fall outside the acceptable ranges of population or housing unit counts. <i>This step depicts imagery.</i></p>  <p>To reverse the split, prior to saving use the Undo button. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p>
<p>Step 7</p>	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the changes for all layer(s).</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.3.3 Split Census Tract by Face

To resolve the census tracts above the maximum threshold, participants can split census tracts by faces within the failing census tract instead of by entire block groups. Locate the definition of faces in [Appendix A](#). When there is only one block group in a tract or where the block groups do not reflect distinct land use areas, selecting a split by faces is preferred.

When using this method for splitting a census tract, there are two considerations. First, determine if there are clear land use distinctions within a tract (e.g., single-family homes on one side of the tract and multi-family apartments on the other). Conversely, there may be no significant difference in the land use or land use may not be the primary consideration because of overriding historical or linear feature factors. Either way, identifying a significant, visible, relatively permanent feature to use to split is important. See [Appendix G](#) for information regarding acceptable features for use in splitting tracts. See [Figure 20](#) that depicts the same tract shown in [Figure 19](#), but with the split using faces rather than block groups.

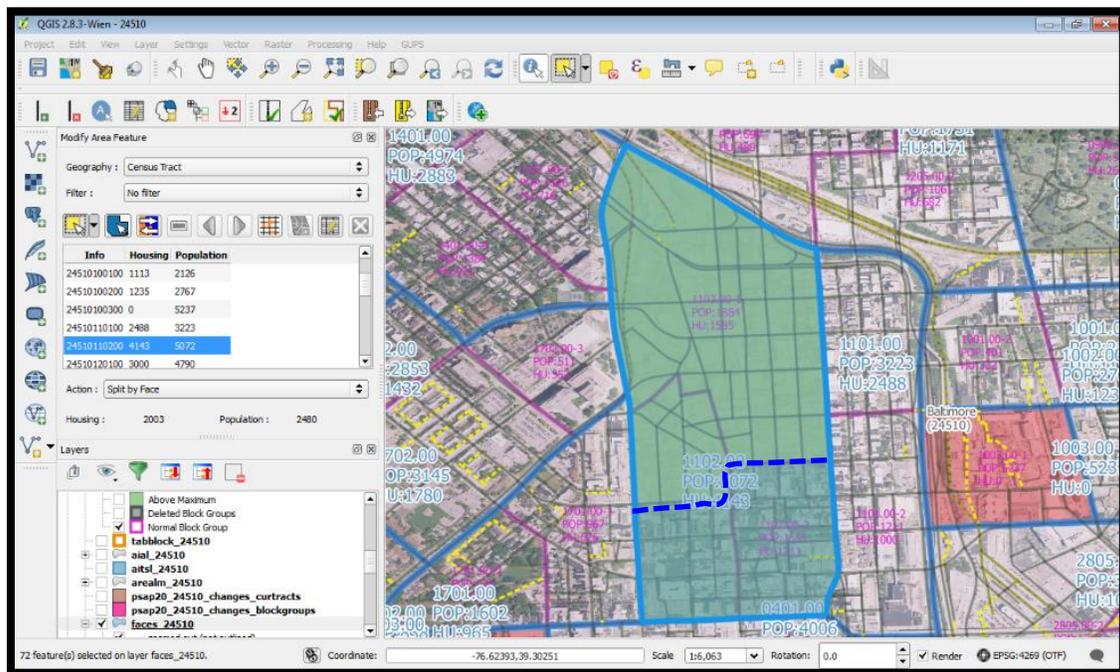
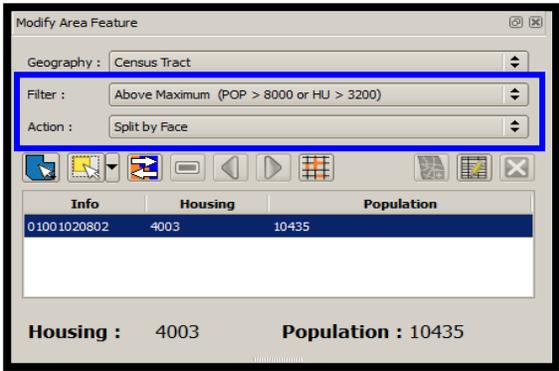
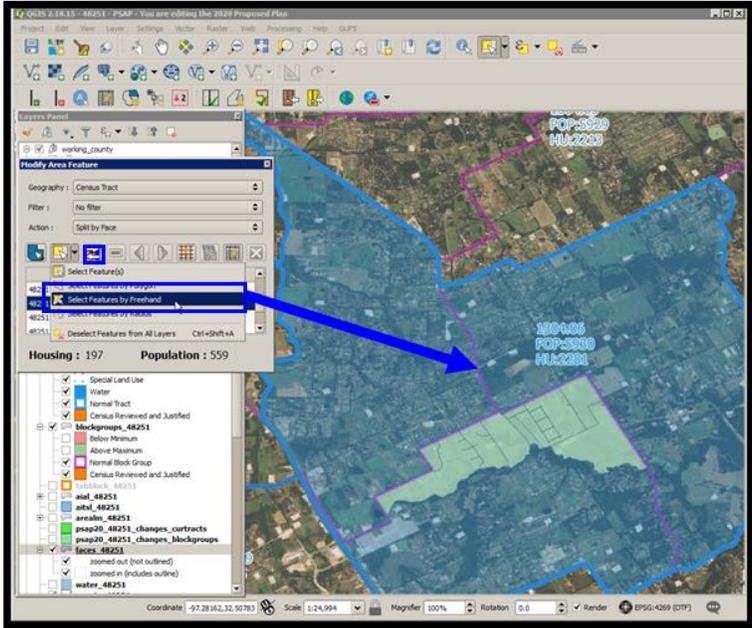


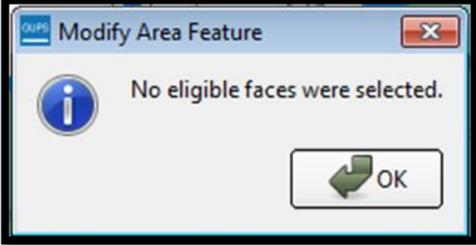
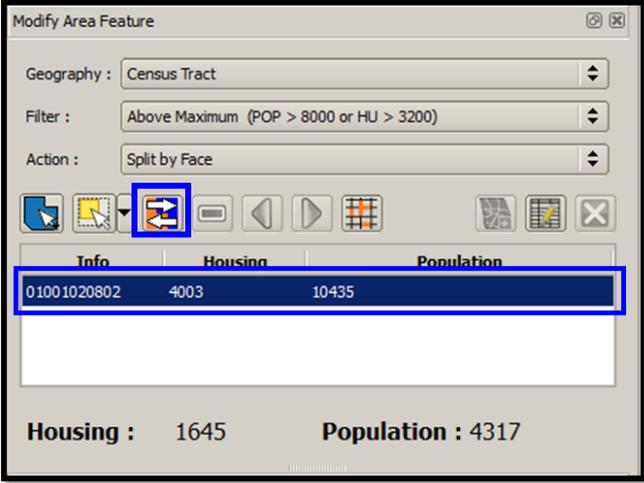
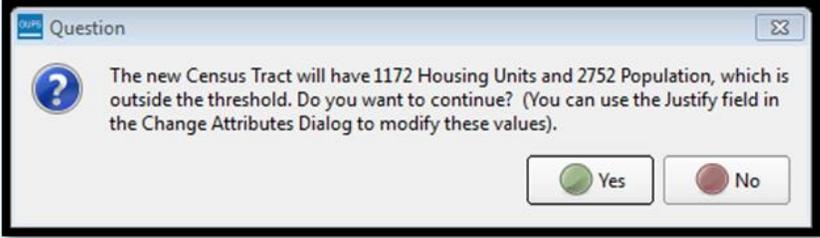
Figure 20. Splitting a Census Tract by Face Example

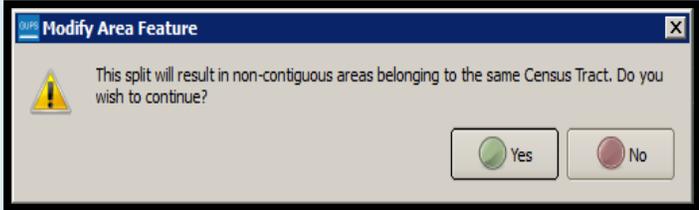
[Table 34](#) explains the steps to split a census tract by faces.

Table 34: Split Census Tract by Face

Step	Action and Result
Step 1	Follow steps from Table 32: Select Census Tracts to open the project and select a census tract for editing.

Step	Action and Result
<p>Step 2</p>	<p>Within the Modify Area Feature window, click the Filter drop-down menu to select Above Maximum (POP > 8000 or HU > 3200). <i>This selects all census tracts that have more than the maximum number of housing units or total population. Change the Action drop-down to Split by Face. This allows participants to split the census tract by faces (areas).</i></p>  <p>The housing and population totals displays on the bottom of the Modify Area Feature tool.</p>
<p>Step 3</p>	<p>As with the Split by Block Group step, click Select Target Area button and click on the map to select a census tract OR double click to select a census tract from the Info column within the Modify Area Feature window. <i>The Map View zooms to the selected census tract to review for potential splitting and highlights it in light blue/green color.</i></p>
<p>Step 4</p>	<p>Click the Select Features by Freehand button to select the faces (areas) to split the census tract. Left click the mouse on the starting point and drag the chasing line around the targeted area then right-click the mouse to end the review the selected area or simply let go of the left. <i>The selected faces highlight with a yellow/green shade.</i></p> <p>Hold the Ctrl key on the keyboard and single click to select and add any missing faces. Also, hold the Ctrl key and single click to unselect unnecessary selected faces. The use of the Shift key may also prove beneficial when adding to an existing set of faces, as it works similarly to the Ctrl key. <i>This step depicts imagery.</i></p> 

Step	Action and Result						
	<p>IMPORTANT: Remember to keep the census tract threshold numbers in mind: Population: 1,200 – 8,000 Optimum: 4,000 Housing: 480 – 3,200 Optimum: 1,600</p>						
	<p>Participants are only able to select faces (areas) within the highlighted census tract. <i>Selecting faces outside the highlighted area will result in an error message.</i></p> 						
<p>Step 5</p>	<p>If the selected faces generate a valid new census tract, click the Split by Face button to create two new census tracts.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>01001020802</td> <td>4003</td> <td>10435</td> </tr> </tbody> </table> <p>Housing : 1645 Population : 4317</p>	Info	Housing	Population	01001020802	4003	10435
Info	Housing	Population					
01001020802	4003	10435					
	<p>If a Question window displays showing that the selection is outside the threshold of acceptable ranges, participants need to either justify this threshold violation or select additional geographies to meet the required threshold. Click YES if satisfied with new census tract. Click NO if not satisfied and would like to revise.</p> 						

Step	Action and Result																		
	<p>If a Question window displays showing that the split will result in noncontiguous areas belonging to the same census tract, participants need to either select Yes to continue and fix the non-continuous areas or select again to make sure all necessary faces are selected.</p> 																		
<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS created the new census tracts with new census tract numbers. If completed successfully, the two new tracts have no shading (no red or green) unless they fall outside the acceptable ranges of population or housing unit counts. <i>This step depicts imagery.</i></p>  <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>48251130405</td> <td>2213</td> <td>5929</td> </tr> <tr> <td>48251130407</td> <td>2633</td> <td>7992</td> </tr> <tr> <td>48251130408</td> <td>2202</td> <td>7296</td> </tr> <tr> <td>48251130409</td> <td>2664</td> <td>6414</td> </tr> <tr> <td>48251130410</td> <td>2598</td> <td>6927</td> </tr> </tbody>	Info	Housing	Population	48251130405	2213	5929	48251130407	2633	7992	48251130408	2202	7296	48251130409	2664	6414	48251130410	2598	6927
Info	Housing	Population																	
48251130405	2213	5929																	
48251130407	2633	7992																	
48251130408	2202	7296																	
48251130409	2664	6414																	
48251130410	2598	6927																	

To reverse the split, prior to saving use the **Undo** button. Refer to [Table 12](#) and [Table 17](#) for instructions on the Undo functionality.

| **Step 7** | Click the **Save** button to save the edits and update the project. *The **Current edits confirmation dialog** asks to save the changes for all layer(s).* For more information on saving, please refer to [Section 7.3, Save a Project in GUPS](#). |

Step	Action and Result
	<div style="text-align: center;"> </div> <p>Click OK to save or Cancel to return to the Map View without saving.</p>

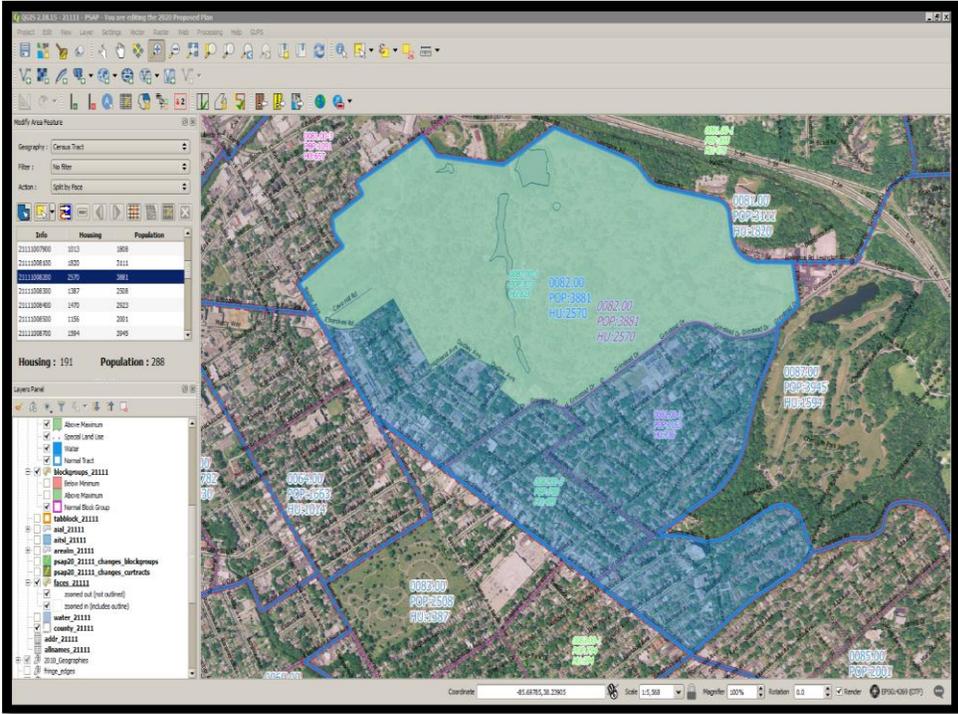
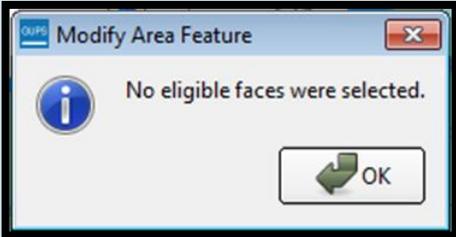
9.3.4 Creating a Special Use Census Tract

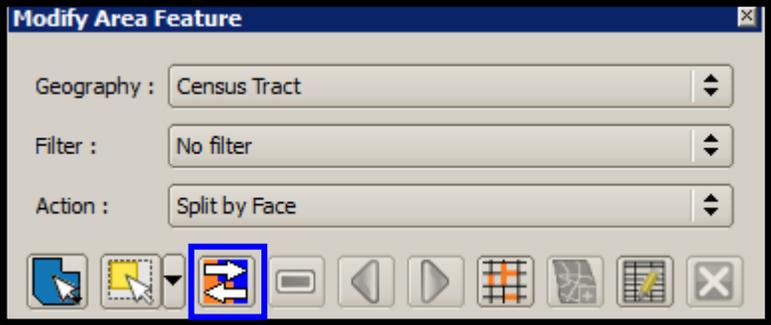
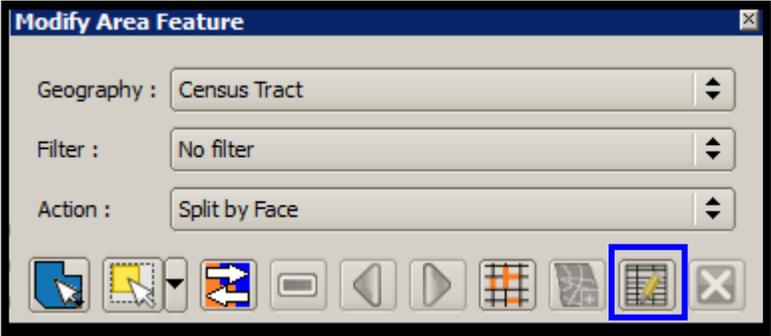
Participants may create special use census tracts for large land areas that exclude housing units or population (e.g., large public parks, forests, large bodies of water, airports). These may also include geographic areas characterized by unique populations (e.g., prisons or universities). Special use census tracts are optional. If delineated, they must be designated with a specific type of special use, have an official name, and ideally have no residential population or housing units (or at the least meet all the minimum population and housing thresholds for a special use census tract. They also must not create noncontiguous census tracts. Participants, along with the Census Bureau, decide if the presence of a special use census tract would be useful to help provide high quality, statistical data. Refer to [Chapter 2](#) for the special use census tract criteria and detailed threshold information. Review [Table 35](#) for an example of using GUPS tools to create a special use census tract.

Note: As with special use census tracts, refer to [Chapter 3](#) for the special use block group criteria and detailed threshold information. Special use block groups are coextensive with special use census tracts. Special use block groups can exist within standard census tracts if there is not enough population or housing to support a special use census tract.

Table 35: Creating a Special Use Census Tract

Step	Action and Result
<p>Step 1</p>	<p>As with the Split Census Tract by Face example, click Select Target Area button and click on the map to select a census tract OR double click to select a census tract from the Info column within the Modify Area Feature window.</p> <div style="text-align: center;"> </div> <p><i>The Map View zooms to the selected census tract to review for potential splitting and highlights it in light blue/green color.</i></p>

Step	Action and Result
Step 2	Ensure the Action field is Split by Face .
Step 3	<p>Click the Select Features by Freehand button to select the faces (areas) to split the census tract. Left click the mouse on the starting point and drag the chasing line around the targeted area then right-click the mouse to end the review the selected area.</p> <p><i>The selected faces highlight with a yellow/green shade.</i></p> <p>Hold the Ctrl key on the keyboard and single click to select and add any missing faces. Also, hold the Ctrl key and single click to unselect unnecessary selected faces. The use of the Shift key may also prove beneficial when adding to an existing set of faces, as it works similarly to the Ctrl key. <i>This step depicts imagery.</i></p> 
	<p>Participants are only able to select faces (areas) within the highlighted census tract. <i>Selecting faces outside the highlighted area will result in an error message.</i></p> 

Step	Action and Result
<p>Step 4</p>	<p>If the selected faces generate a valid new special use census tract, click the Split by Face button to create two new census tracts. <i>The new special use tract appears below.</i></p>  
<p>Step 5</p>	<p>Click the Change Attributes button in the Modify Area Feature window.</p> 

Step	Action and Result
<p>Step 6</p>	<p>Change the TRACTCE field to a valid special use census tract number (e.g., first two digits begin with 98xx). <i>This example uses 980000 since there are no other special use census tracts in this working county.</i> Enter a SITE_NAME that represents the name of the special use area. <i>This example uses Cave Hill Cemetery.</i> Enter a justification (up to 150 characters) for the use of the name in the JSTFY_NAME field. <i>This example uses Old Historic Landmark.</i></p> <div> </div> <p>Click OK to accept the modifications.</p>
<p>Step 7</p>	<p>Click the Save button to save the edits and update the project.</p>

9.3.5 Merge Census Tracts

To resolve the census tracts below the minimum threshold, participants perform a merge action. Merging tracts of the same code series is the preferred approach (e.g., merge adjacent census tracts 1200.01 and 1200.02 instead of merging 1200.01 with adjacent census tract 2000). This is the best method for maintaining historical comparability between censuses. Census tracts in the same code series increment their coding by suffix (the final two digits), while tracts merged outside of the same series increment by the next available tract code in the county, with a default .00 suffix. See [Figure 21](#) for a visual of this description.

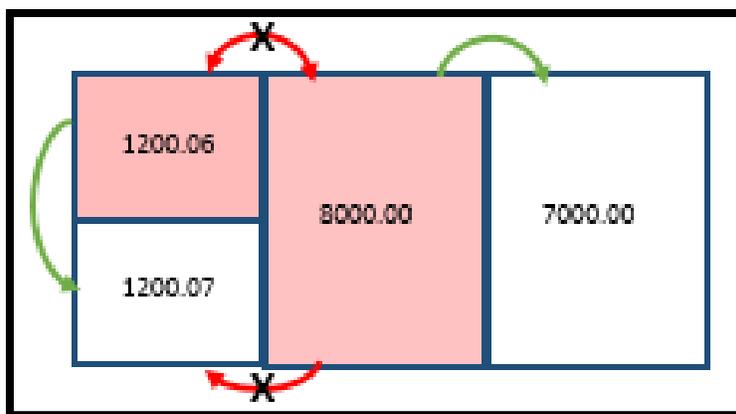


Figure 21. Merging Census Tracts within Same Code Series Visual

Other methods of merging, in order of priority, include:

- Merge two tracts of similar land use across a minor feature. This retains outer boundaries for historical comparison and ideally maintains continuity of housing type and demographics.
- Merge two tracts of dissimilar land use across a minor feature. This is less than ideal, but avoids creating census tracts that span major landscape features.
- Merge two tracts of similar land use across a major feature. This is less than ideal, but may group areas of similar housing and demographic characteristics.
- Merge two tracts of dissimilar land use across a major feature. The main benefit is to maintain the outer boundaries for historical comparison, but runs the high risk of compromising comparability of housing and population data within the new tract.
- Alter boundary of below threshold tract to include block groups of neighboring tract(s). This method is highly discouraged because it changes the outer, historic boundaries of census tracts.

Table 36 explains the steps to merge a census tract.

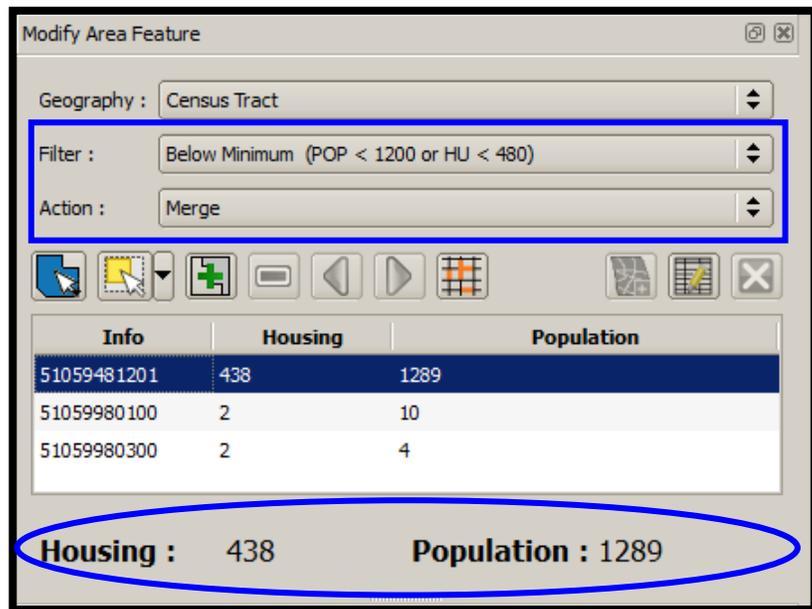
Table 36: Merge Census Tracts

Step	Action and Result
Step 1	Follow steps from Table 32: Select Census Tracts to open the project and select a census tract for editing.

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

Step 2

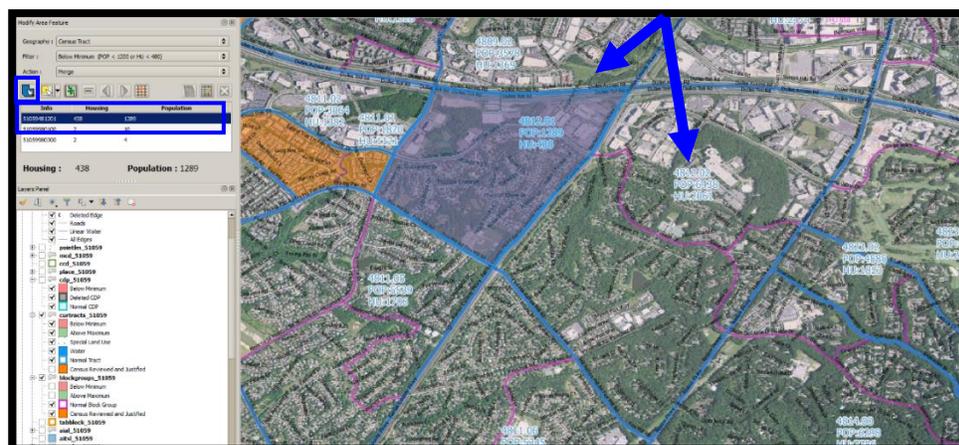
Within the **Modify Area Feature** window, click the **Filter** drop-down menu to select **Below Minimum (POP < 1200 or HU < 480)**. This selects all census tracts that have less than the minimum number of housing units or total population. Change the **Action** drop-down to **Merge**. This allows participants to merge (or combine) the census tracts falling below the minimum requirements.



The housing and population totals displays on the bottom of the **Modify Area Feature** tool.

Step 3

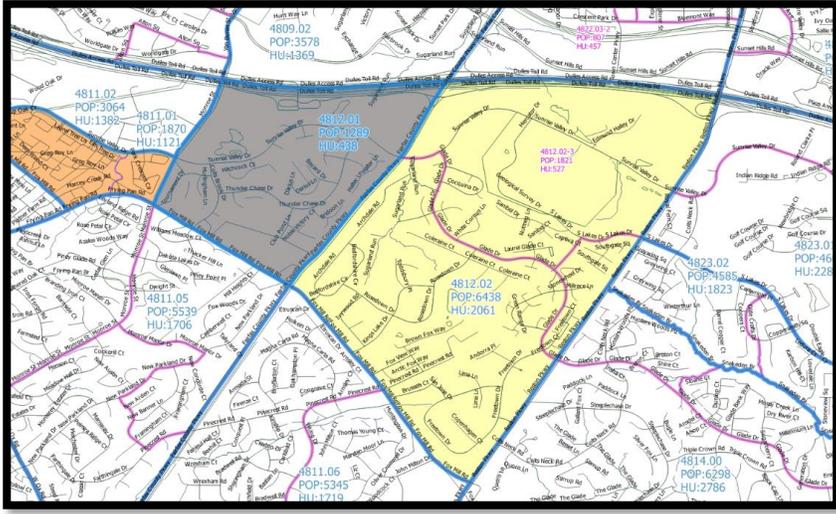
Double click to select a census tract from the **Info** column within the **Modify Area Feature** window. The **Map View** zooms to the selected census tract to review for a potential merge and highlights it in light blue/green color. Navigate the **Map View** to locate the best neighboring census tract(s) to merge. Verify the census tracts for historic relationships when possible. This step depicts imagery.



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

Step 4

Click the **Select Features by Area** or **single click** button to select the census tract(s) to use to merge with the below minimum census tract. *The newly selected census tract(s) highlight in yellow.*



IMPORTANT: Remember to keep the census tract threshold numbers in mind:
 Population: 1,200 – 8,000 **Optimum: 4,000**
 Housing: 480 – 3,200 **Optimum: 1,600**

Modify Area Feature

Geography : Census Tract

Filter : Below Minimum (POP < 1200 or HU < 480)

Action : Merge

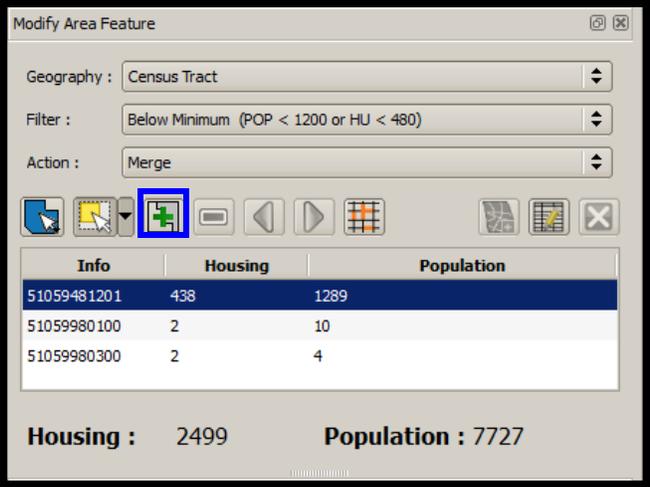
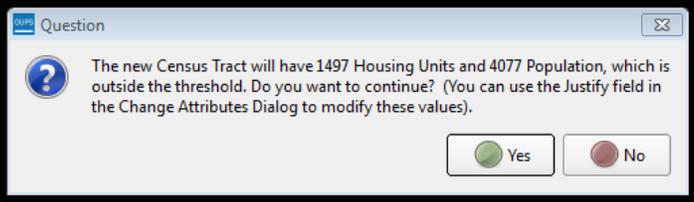
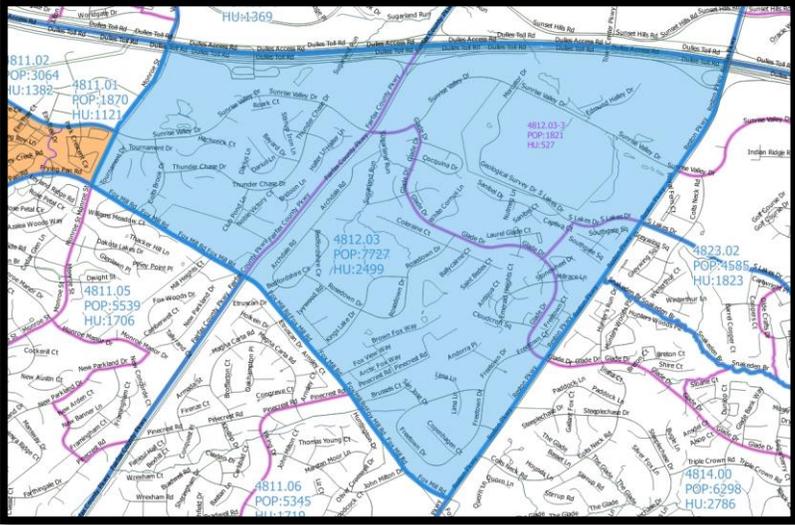
Info	Housing	Population
51059481201	438	1289
51059980100	2	10
51059980300	2	4

Housing : 2499 Population : 7727

The housing and population totals change dynamically while selecting tracts to merge, allowing participants to see the results of the merge, prior to actually merging the tracts.



Selecting census tracts not contiguous with each other result in geographic errors. Participants must correct contiguity errors (or provide a justification for keeping the tracts noncontiguous) prior to submission to the Census Bureau. The **Modify Area Feature** tool does not allow a participant to select census tracts in different counties.

Step	Action and Result
<p>Step 5</p>	<p>If the selected tract(s) generate a valid new census tract, click the Merge button to create a new census tract.</p> 
<p></p>	<p>If a Question window displays showing that the selection is outside the threshold of acceptable ranges, participants need to either justify this threshold violation or select additional geographies to meet the required threshold. Click YES if satisfied with new census tract. Click NO if not satisfied and would like to revise.</p> 
<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS created the new census tract with new census tract number. If completed successfully, the new tract has no shading (no red or green) unless it still falls outside the acceptable ranges of population or housing unit counts. To reverse the merge, prior to saving use the Undo button. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p> 

Step	Action and Result
<p>Step 7</p>	<p>Use the Change Attributes button to modify the merged tract number that GUPS automatically assigned if needed.</p> <div> </div> <p>In the Change Attributes window, enter all the requested information for the following fields with a red asterisk. Required information varies based on the type of geography.</p> <div> </div> <p>Click OK to save the attribute change or Cancel to return to close the window without saving.</p> <p>Note: The Justify field exists in the Modify Area Feature, Change Attributes tool. This field also exists in the PSAP Criteria Review tool described in a later section. Character limit is 150 for this field.</p>

Step	Action and Result
Step 8	<p>Click the Save button to save the edits and update the project. The Current edits confirmation dialog box asks to save the changes for all layer(s). For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p> <div style="text-align: center;"> </div> <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.3.6 Change Census Tract Boundaries

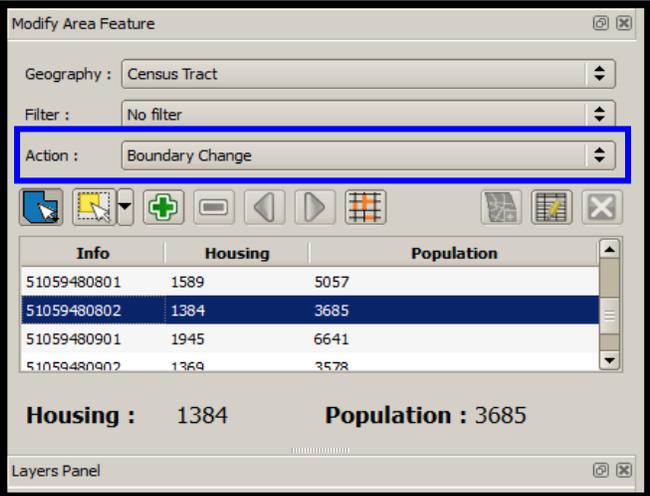
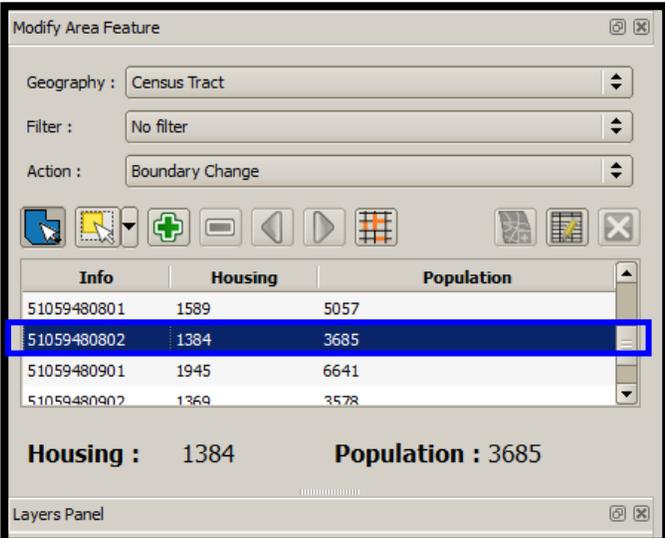
Participants apply boundary changes to census tracts in instances when the boundaries are errant and no longer accurately reflect the real boundary or when the boundary does not follow any visible features. Participants cannot change the census tract boundary where it follows an acceptable legal boundary as listed in [Section 2.3](#). If the boundary of the legal entity is incorrect, please report the boundary correction through the annual Boundary and Annexation Survey (BAS) program. Consult the [Part C](#) in the Introduction of this document for details on the BAS. Quality checks and comparisons of census tracts to the legal boundaries occur yearly to ensure the census tracts align with the boundary of the legal entity in the Census Bureau systems.

See [Section 9.3.6.1](#) for instructions to add linear features for use as census tract boundaries and [Section 9.3.6.3](#) for instructions to delete linear features. The **Boundary Change** action uses the faces layer to modify census tracts. Linear features create faces. [Table 37](#) explains the steps to change census tract boundaries.

IMPORTANT: The guiding principle for census tract boundaries is to maintain historical comparability between decennial censuses. Sometimes small boundary changes occur to maintain the census tract boundary along a visible feature such as a road or river; however, drastic changes to census tract boundaries compromise comparability of the census tracts between decades. The Census Bureau reserves the right to deny participant boundary changes that introduce significant changes.

Table 37: Change Census Tract Boundaries

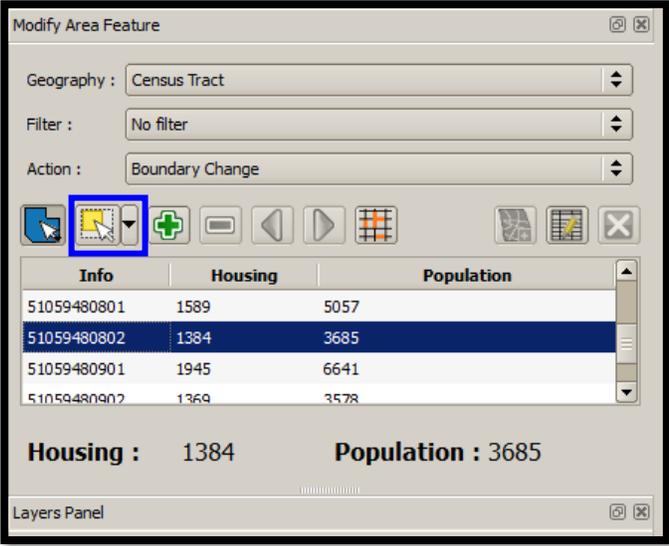
Step	Action and Result
Step 1	<p>Follow steps from Table 32: Select Census Tracts to open the project and select census tract for editing.</p>

Step	Action and Result
<p>Step 2</p>	<p>Within the Modify Area Feature window, click the drop-down Action menu to select Boundary Change.</p> 
<p>Step 3</p>	<p>Double click to select a census tract from the Info column within the Modify Area Feature window. <i>The Map View zooms to the selected census tract to review for a potential boundary change.</i></p> 

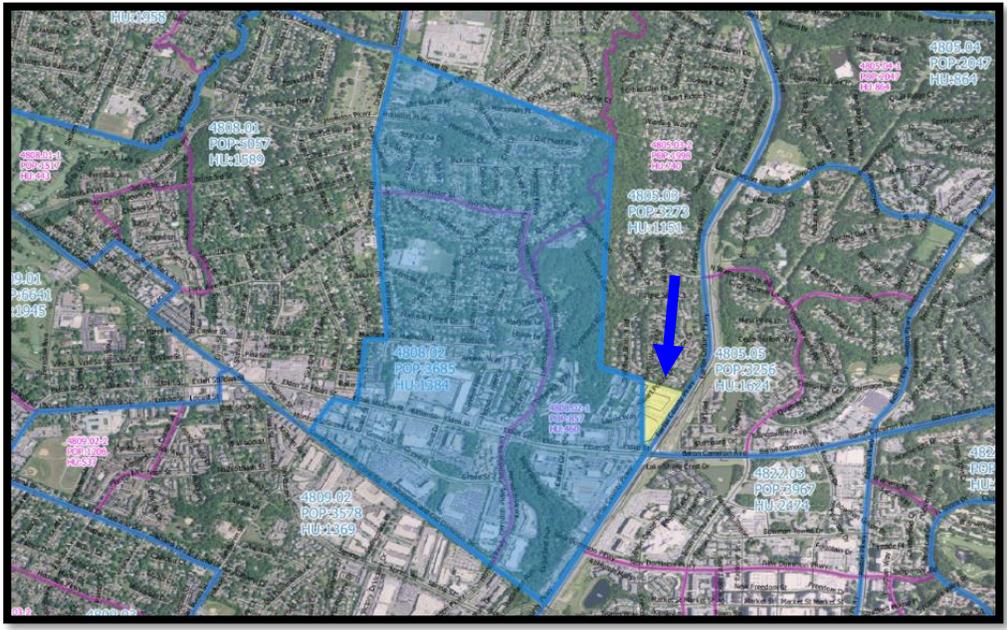
Step	Action and Result
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Step 4

Click the **Select Features By Area** or **single click** button to select the faces to use for boundary change.



The selected faces highlight in yellow. This step depicts imagery.



IMPORTANT: Remember to keep the census tract threshold numbers in mind:
 Population: 1,200 – 8,000 **Optimum: 4,000**
 Housing: 480 – 3,200 **Optimum: 1,600**

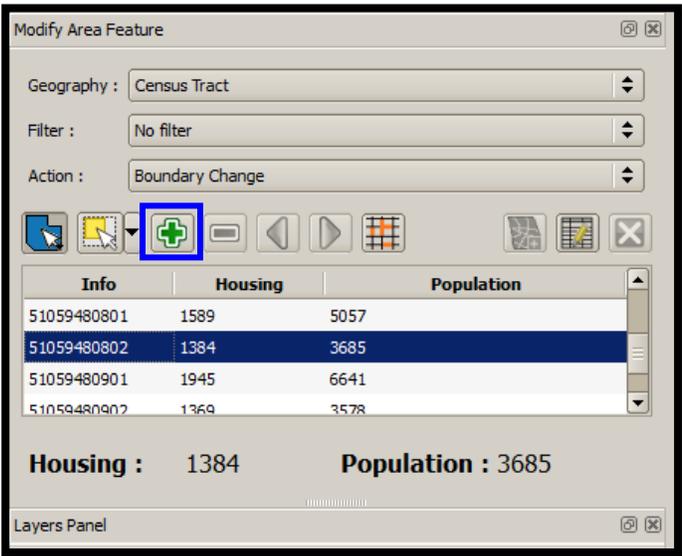
The housing and population totals change dynamically while selecting faces to alter the census tract boundary, allowing participants to see the results of the change, prior to actually modifying the boundary of the census tract.



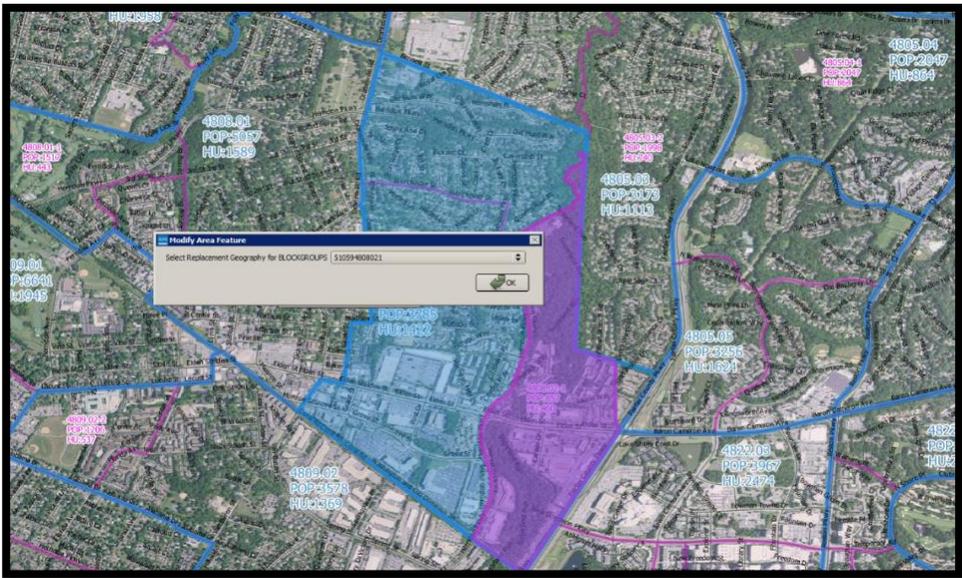
Selecting noncontiguous faces from the selected census tract result in geographic errors. Participants must correct contiguity errors prior to submitting their data to the Census Bureau.

Step	Action and Result
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Step 5	Click the Add Area button to apply boundary change to the selected census tract.
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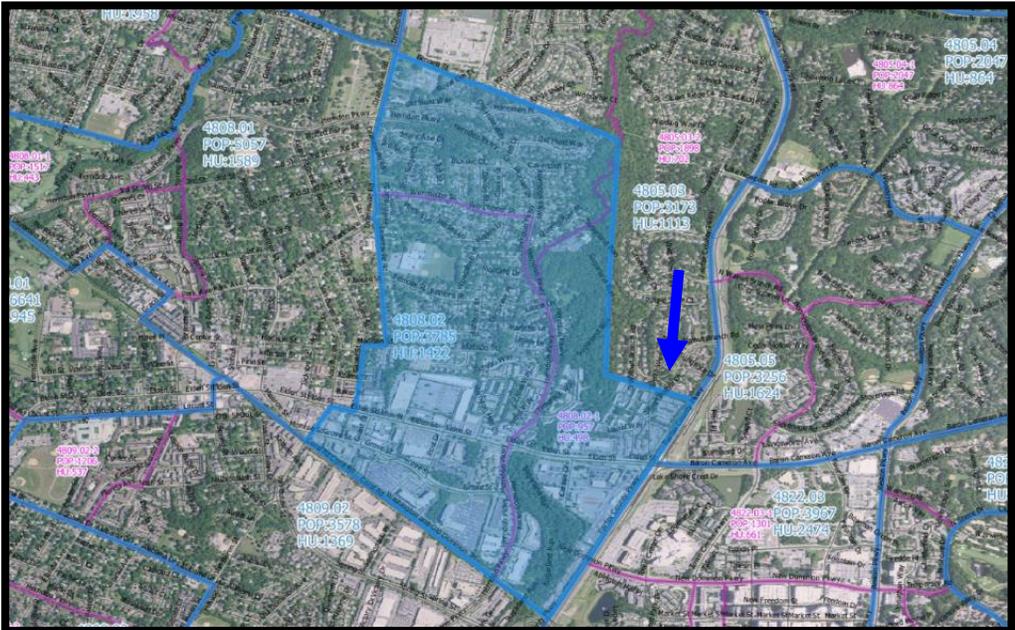
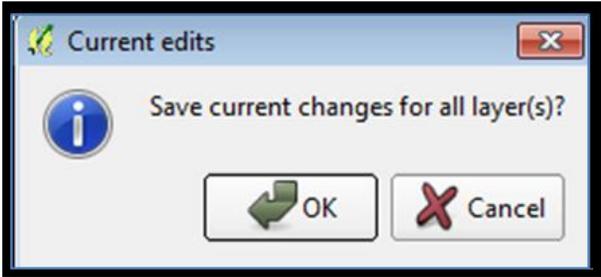


A window displays requesting participants select the block group to add the selected faces. The **Map View** displays the potential block group in the drop-down menu.



Note: GUPS highlights each block group as selected, allowing the participant to choose the adjacent one. Be mindful that this step can introduce contiguity errors.

After selecting the appropriate block group, click **OK** to add the selected faces to the selected block group highlighted on the map.

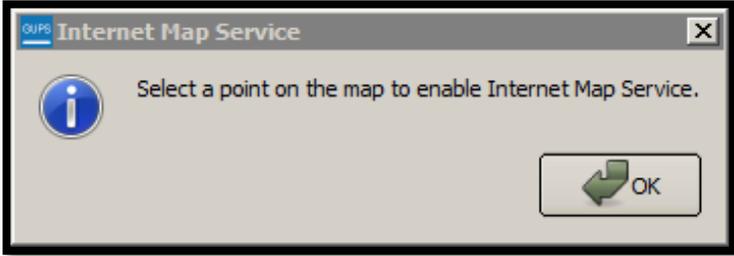
Step	Action and Result
<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS captured the boundary change properly for the census tract.</p>  <p>To reverse the boundary change, simply add the area back to the original census tract or perform the Undo action prior to saving. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p>
<p>Step 7</p>	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the changes for all layer(s).</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.3.6.1 Add Linear Feature

The addition of new or missing linear features may be necessary to form faces in order to modify all of the statistical geographies. While it may be tempting to add all missing linear features, with the time constraints of PSAP, focus first on adding only the linear features necessary to split statistical geographies or form new statistical geographies. Participants must utilize the Add Imagery button within GUPS for digitizing reference and may use the Internet Map Service button to provide a secondary source/visual of the area. [Table 17](#) describes the use of both buttons. Review [Table 38](#) for a detailed example.

IMPORTANT: Do not add linear features without the assistance of imagery.

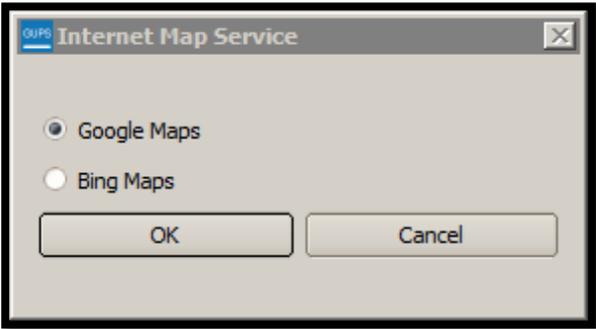
Table 38: Add Linear Feature

Step	Action and Result
Step 1	Download and review the data as described in Section 7.2, Open GUPS and Start a New Project.
Step 2	<p>Follow steps from Table 32: Select Census Tracts to open the existing project. Zoom to the area to add linear features. Ensure imagery is enabled as described in Step 7 of that table.</p>  <p>The image shows an aerial satellite view of a residential neighborhood. A blue arrow points to a specific area on the left side of the map, which appears to be a construction site or a cleared area. The surrounding area is densely packed with houses and streets. A small text box in the center of the map displays the following information: 0208.04, POP=5036, and HLU=2206.</p>
Step 3	<p>Click the Internet Map Service button.</p>  <p>The image shows a toolbar with several icons. A blue box highlights a globe icon, which is the Internet Map Service button. Other icons include a plus sign, a minus sign, and a cursor.</p> <p>An Internet Map Service window appears asking participants to select a point on the map to enable Internet Map Service.</p>  <p>The image shows a dialog box titled "GUPS Internet Map Service". It contains an information icon (i) and the text "Select a point on the map to enable Internet Map Service." There is an "OK" button with a green arrow pointing to the right.</p>

Step	Action and Result
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Step 4

Click a point in the **Map View** near the missing feature(s) to select the targeted area from which to launch the internet service. *Another **Internet Map Service** window appears to select either **Google Maps** or **Bing Maps**.*



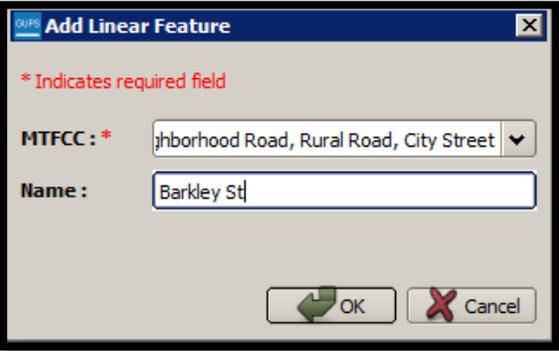
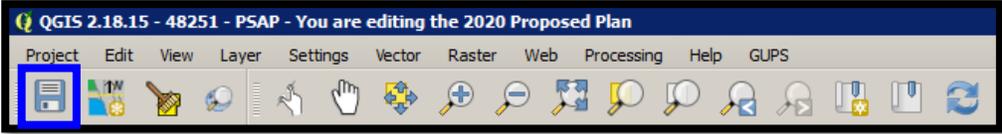
After selected, click **OK** and a new internet tab or session opens to the targeted section chosen in **Step 4**.



Step 5

Click the **Add Linear Feature** button from within the **PSAP** toolbar.



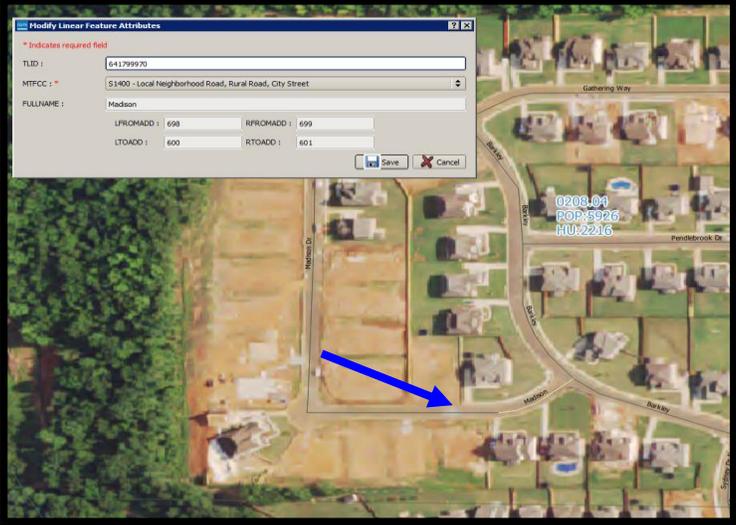
Step	Action and Result
<p>Step 8</p>	<p>From the MTFCC drop-down menu, select the proper code for the newly added feature. In this example, choose S1400.</p>  <p>The Name field activates after choosing the MTFCC. Enter the name and click OK.</p> 
<p>Step 9</p>	<p>Click the Save button to save the changes. Continue with the same steps to add any additional linear features.</p> 

9.3.6.2 Modify Linear Feature Attributes

Participants can modify the attributes of linear features by using the **Modify Linear Feature Attributes** button within the PSAP toolbar. This may be necessary to correct errors in existing feature names or correct errant MTFCC codes. See [Table 39](#) for an example.

Table 39: Modify Linear Feature Attributes

Step	Action and Result
<p>Step 1</p>	<p>Locate the linear feature to modify. Select the Modify Linear Feature Attributes button in the PSAP toolbar.</p> 

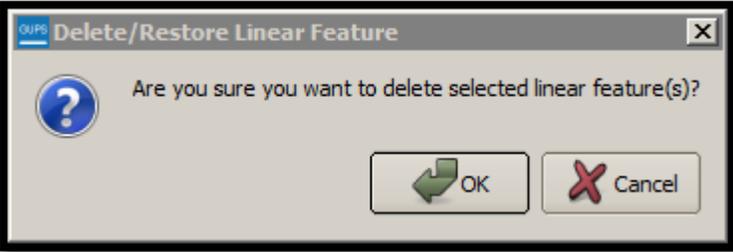
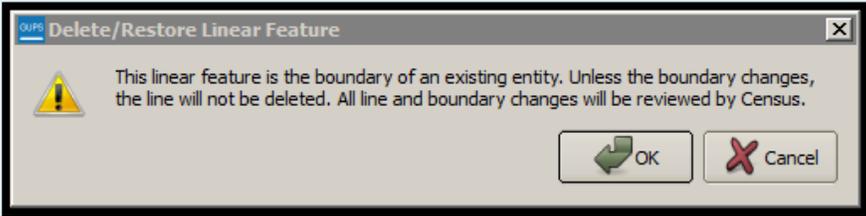
Step	Action and Result
Step 2	<p>In the Map View, left-click the linear feature to modify. A Modify Linear Feature Attributes window appears.</p> 
Step 3	<p>Change the MTFCC or the FULLNAME of the feature. Click the Save button to save the modification.</p>

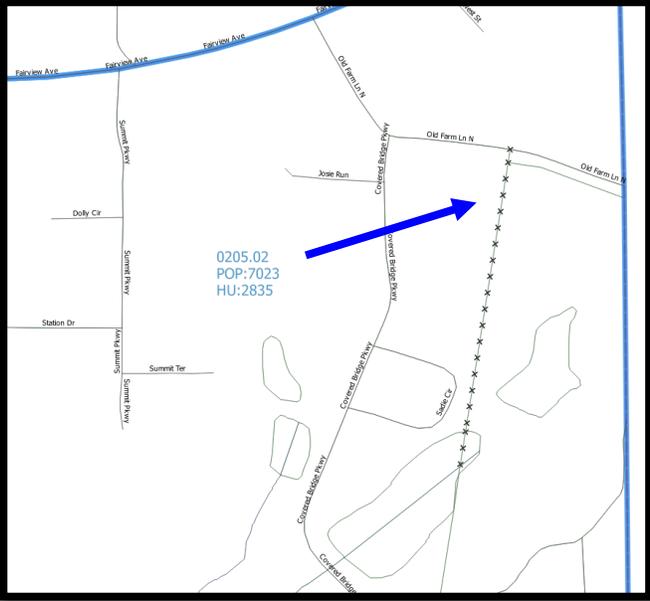
9.3.6.3 Delete/Restore Linear Feature

GUPS allows participants to delete linear features and/or restore recently deleted features since the last save process by using the **Delete/Restore Linear Feature** button within the PSAP toolbar. Review [Table 40](#) for examples of both deleting and restoring a linear feature.

Table 40: Delete/Restore Linear Feature

Step	Action and Result
Step 1	<p>Locate the linear feature to delete. Select the Delete/Restore Linear Feature button in the PSAP toolbar.</p> 

Step	Action and Result
<p>Step 2</p>	<p>In the Map View, left-click the linear feature to delete. A <i>Delete/Restore Linear Feature</i> window appears.</p>  
<p>Step 3</p>	<p>Click OK to proceed with deletion of the selected feature.</p>
	<p>If the feature selected forms the boundary of an existing entity, <i>GUPS displays the following warning message.</i></p> 

Step	Action and Result
Step 4	<p>The feature is marked for deletion and displays in GUPS with the “X” character along the entire feature. Imagery disabled in order to better view the “X” characters.</p> 
Step 5	<p>GUPS uses the same tool to restore the deleted feature if the deletion was in error. Enable the Delete/Restore Linear Feature button. Select the feature marked for deletion from the previous step. A <i>Delete/Restore Linear Feature</i> window appears asking for confirmation to restore the linear feature.</p>  <p>Click OK to restore the feature.</p>
Step 6	<p>Click the Save button to save the changes.</p>

9.4 Block Group Update Instructions

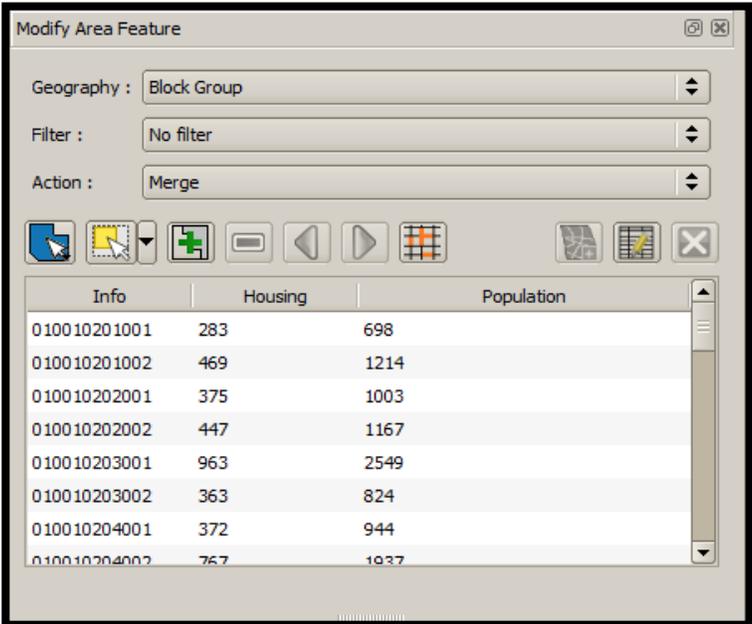
Participants can split block groups by face, merge block groups, and change block group boundaries. [Part 1](#) outlined the criteria and background for updating block groups, while [Part 2](#) introduced the tools for updating. This section provides detailed examples for performing the aforementioned updates of splitting, merging, and changing boundaries. Refer to [Section 9.3.4](#) for details on special use block groups.

IMPORTANT: Participants may renumber the block groups using the **Renumbering Tool** in the **PSAP toolbar**. If participants do want to renumber to avoid any gaps in the numbering of block groups, execute the tool after all work on the block group geography concludes. Do not execute the tool, if participants wish to retain the existing block group numbering.

9.4.1 Select Block Group

Participants can change and modify block groups. This is the second priority for participants' review after reviewing and updating census tracts. However, there may be instances in which the census tracts remain within specified thresholds, but block groups require updating due to population or housing changes. In those cases, participants begin with a review of the block groups. Steps to select block groups to begin a review are included in [Table 41](#).

Table 41: Select Block Group

Step	Action and Result																											
Step 1	Download and review the data as described in Section 7.2, Open GUPS and Start a New Project .																											
Step 2	<p>Follow steps from Table 32: Select Census Tracts to open the existing project. After completing Steps 1 – 4 (step 5 only appears with the initial setup), modify Step 6 by clicking the Modify Area Feature, Geography drop-down menu and selecting Block Group. Enable the imagery as described in Step 7 in order to visualize and orient to the block group(s) under review.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr><td>010010201001</td><td>283</td><td>698</td></tr> <tr><td>010010201002</td><td>469</td><td>1214</td></tr> <tr><td>010010202001</td><td>375</td><td>1003</td></tr> <tr><td>010010202002</td><td>447</td><td>1167</td></tr> <tr><td>010010203001</td><td>963</td><td>2549</td></tr> <tr><td>010010203002</td><td>363</td><td>824</td></tr> <tr><td>010010204001</td><td>372</td><td>944</td></tr> <tr><td>010010204002</td><td>767</td><td>1937</td></tr> </tbody> </table>	Info	Housing	Population	010010201001	283	698	010010201002	469	1214	010010202001	375	1003	010010202002	447	1167	010010203001	963	2549	010010203002	363	824	010010204001	372	944	010010204002	767	1937
Info	Housing	Population																										
010010201001	283	698																										
010010201002	469	1214																										
010010202001	375	1003																										
010010202002	447	1167																										
010010203001	963	2549																										
010010203002	363	824																										
010010204001	372	944																										
010010204002	767	1937																										

9.4.2 Split a Block Group

To resolve the block groups above the maximum threshold, participants split block groups by faces within the problematic block group, ideally into two equal parts. Unlike census tracts, historical comparability between decades is not a strong expectation. It is more important to ensure block groups meet the suggested criteria rather than maintaining historical comparability. Participants are encouraged to use one of two options when splitting block groups. Either they split the block group into geometrically equal parts or they split according to

land use areas. See [Figure 22](#) and [Figure 23](#) for an example of each option.

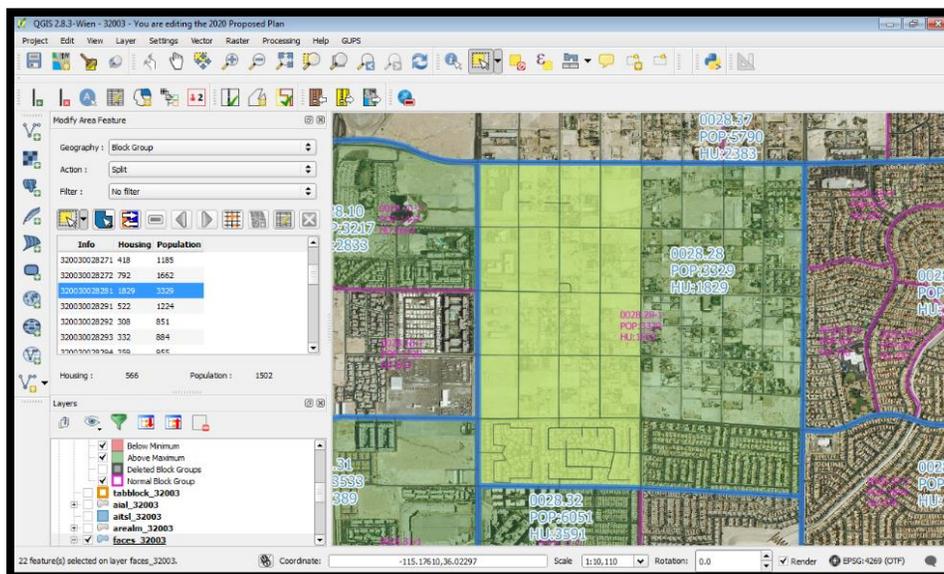


Figure 22. Dividing a Block Group into Geometrically Equal Parts Example

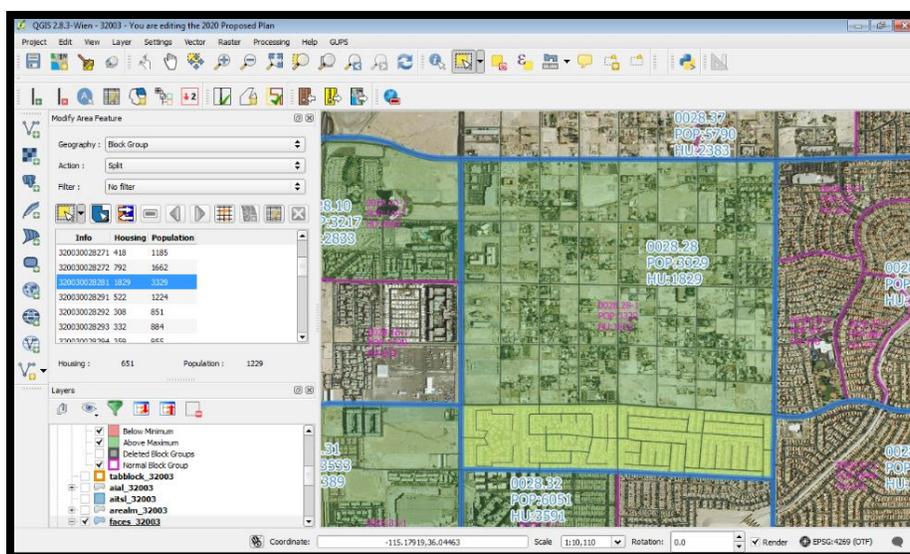


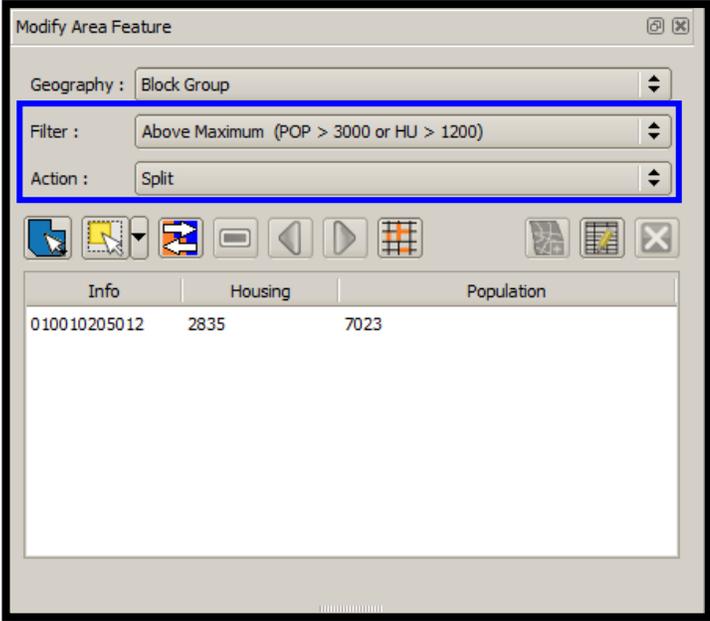
Figure 23. Dividing a Block Group According to Land Use Areas Example

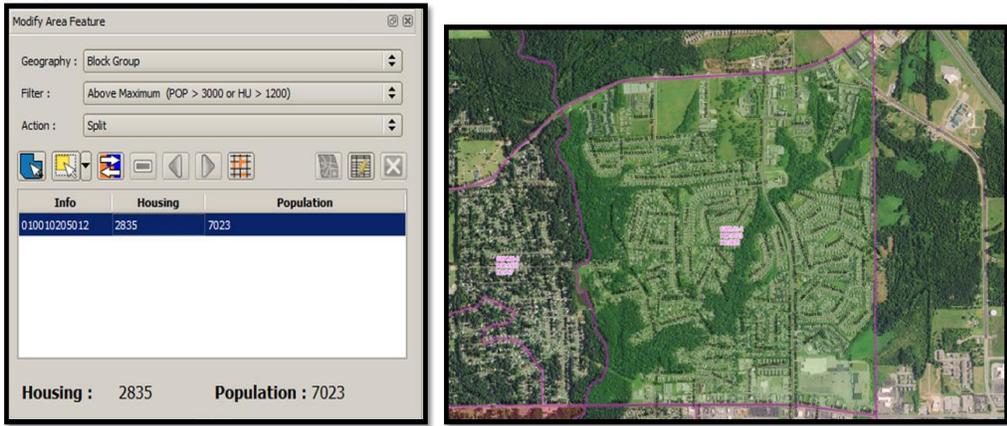
[Table 42](#) explains the steps to split a block group.

Table 42: Split Block Group

Step	Action and Result
Step 1	Follow steps from Table 41: Select Block Group to open the project and select block groups for editing.

Step	Action and Result
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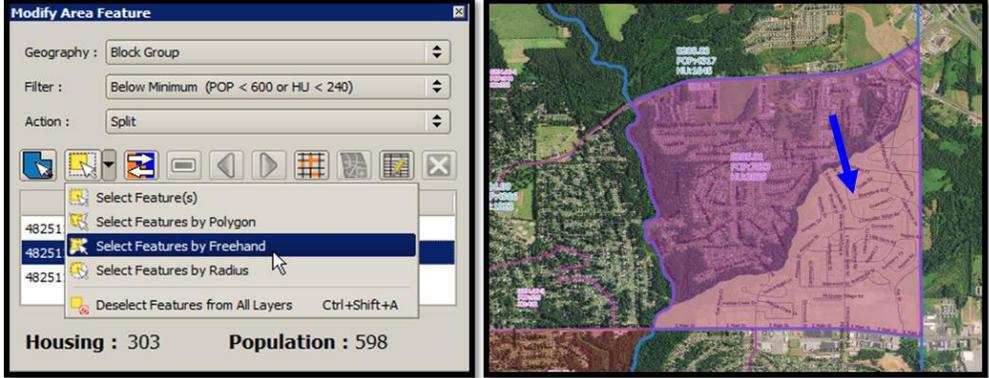
Step 2	<p>Within the Modify Area Feature window, click the drop-down Filter menu to select Above Maximum (POP > 3000 or HU > 1200). <i>This will select all block groups that have more than the maximum number of houses/people.</i> Change the Action drop-down to Split. <i>This allows participants to split the block group by faces (areas).</i></p> 
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Step 3	<p>Double click to select a block group from the Info column within the Modify Area Feature window. The Map View zooms to the selected block group to review for potential splitting and highlights it. This step depicts imagery.</p> 
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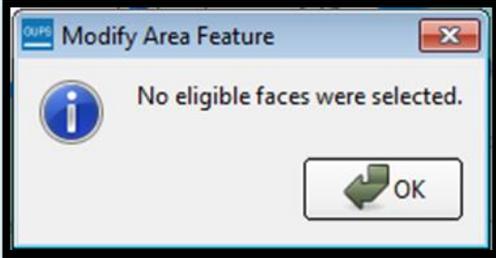
Step	Action and Result
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Step 4

Click the **Select Features by Freehand** button to select the faces to use to split the block group. Left click the mouse on the starting point and drag the chasing line around the targeted area then right-click the mouse to end the review the selected area. *The selected faces highlight with a yellow/green shade, likely distorted by the shading of a block group or census tract.* Change the selection method from **Select Features by Freehand** to **Select Feature(s)**. Hold the Ctrl key on the keyboard and single click to select and add any missing faces. Also, hold the Ctrl key and single click to unselect unnecessary selected faces. The use of the Shift key may also prove beneficial when adding to an existing set of faces, as it works similarly to the Ctrl key.

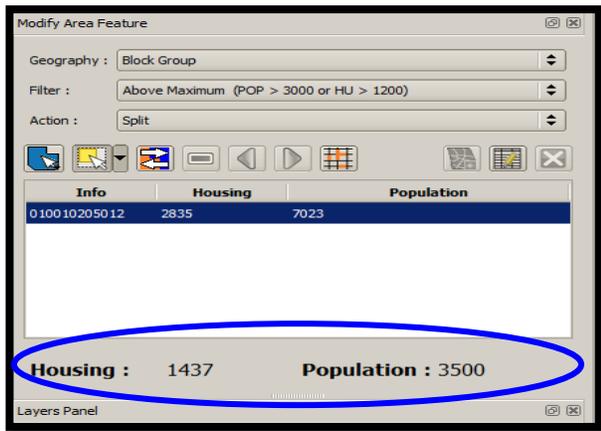


 Participants are only able to select faces (areas) within the highlighted block group. *Selecting faces outside the highlighted area will result in an error message.*

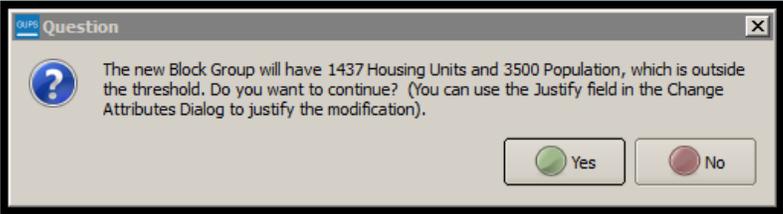
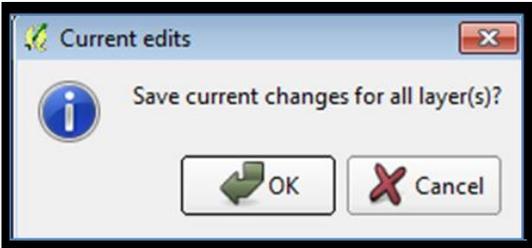


Step 5

*The selected area's **Housing and Population** totals display at the bottom of the **Modify Area Feature** window prior to completing the split.*



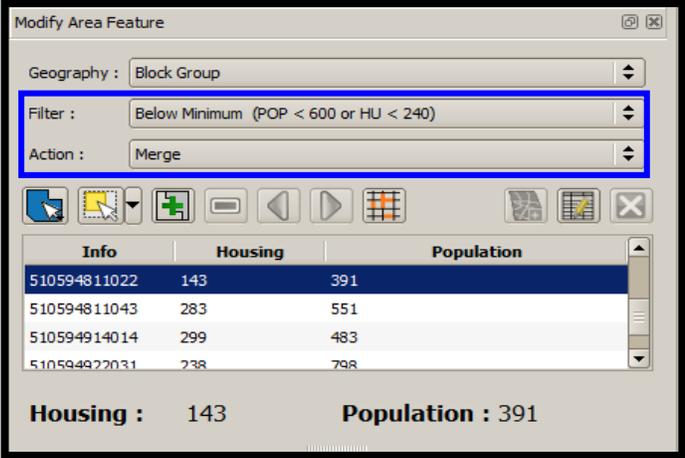
IMPORTANT: Remember to keep the block group threshold numbers in mind:
 Population: 600 – 3,000
 Housing: 240 – 1,200

Step	Action and Result
Step 6	If the selected faces generate a valid new block group, click the Split by Face button to create two new block groups.
	<p>If a Question window displays showing that the selection is outside the threshold of acceptable ranges, participants need to either justify this threshold violation or select additional geographies to meet the required threshold. Click YES if satisfied with new block group. Click NO if not satisfied and would like to revise.</p> 
Step 7	<p>Refer to the Map View to verify that GUPS created the new block groups with new block group numbers. If completed successfully, the two block groups have no shading (no red or green) unless they fall outside the acceptable ranges of population or housing unit counts.</p>  <p>To reverse the split, prior to saving use the Undo button. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p>
Step 8	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the changes for all layer(s).</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.4.3 Merge Block Groups

To resolve the block groups below the minimum threshold, participants perform a merge action by merging neighboring block groups. If both the block group and its census tract are outside of thresholds, resolve the census tract first. Because block groups nest within census tracts, the higher-level census tract changes affect how participants resolve block group errors. Recall that historical comparability is not a concern for block groups as it is for census tracts, so participants have more freedom to make boundary corrections and reorganize existing block groups to meet criteria thresholds. [Table 43](#) explains the steps to merge a block group.

Table 43: Merge Block Groups

Step	Action and Result															
Step 1	Follow steps from Table 41: Select Block Group to open the project and select block group for editing.															
Step 2	<p>Within the Modify Area Feature window, click the Filter drop-down menu to select Below Minimum (POP < 600 or HU < 240). This selects all block groups that have less than the minimum number of housing units or total population. Change the Action drop-down to Merge. This allows participants to merge (or combine) the block groups falling below the minimum requirements.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>510594811022</td> <td>143</td> <td>391</td> </tr> <tr> <td>510594811043</td> <td>283</td> <td>551</td> </tr> <tr> <td>510594914014</td> <td>299</td> <td>483</td> </tr> <tr> <td>510594922031</td> <td>238</td> <td>798</td> </tr> </tbody> </table> <p>Housing : 143 Population : 391</p>	Info	Housing	Population	510594811022	143	391	510594811043	283	551	510594914014	299	483	510594922031	238	798
Info	Housing	Population														
510594811022	143	391														
510594811043	283	551														
510594914014	299	483														
510594922031	238	798														

Step	Action and Result
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Step 3

Double click to select a block group from the **Info** column within the **Modify Area Feature** window. *The **Map View** zooms to the selected block group to review for potential merging and highlights it.*

Modify Area Feature

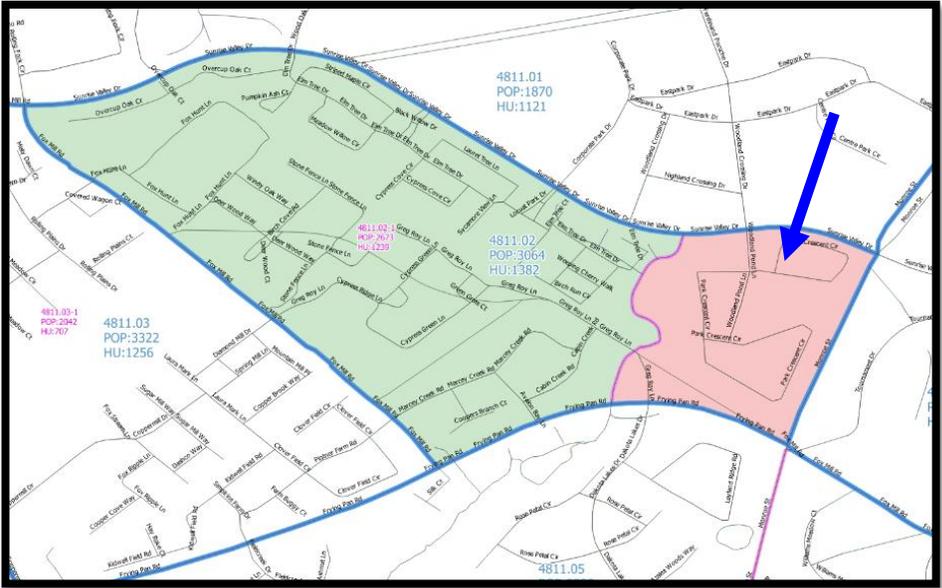
Geography : Block Group

Filter : Below Minimum (POP < 600 or HU < 240)

Action : Merge

Info	Housing	Population
510594811022	143	391
510594811043	283	551
510594914014	299	483
510594922031	738	798

Housing : 143 Population : 391

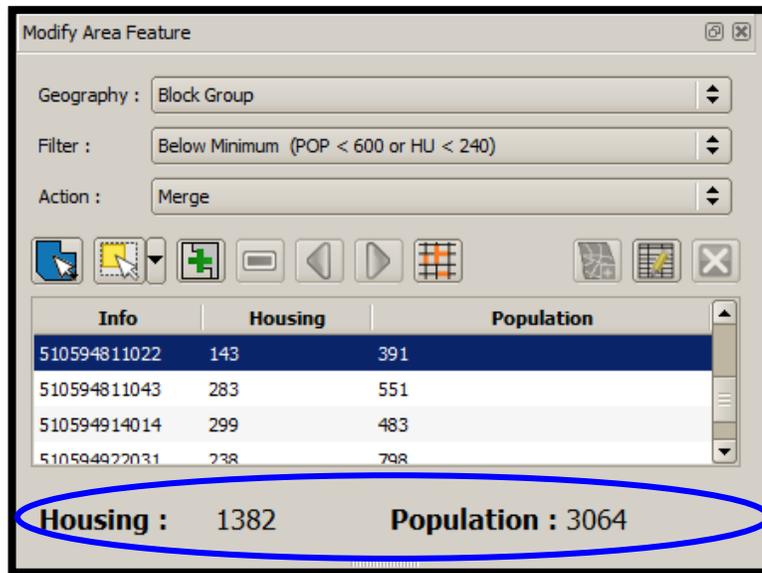


Step	Action and Result
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<p>Step 4</p>	<p>Click the Select Features by Area or single click button to select the block group(s) to use to merge with the below minimum block group. <i>The newly selected block group(s) highlight in yellow.</i> This step depicts imagery.</p>
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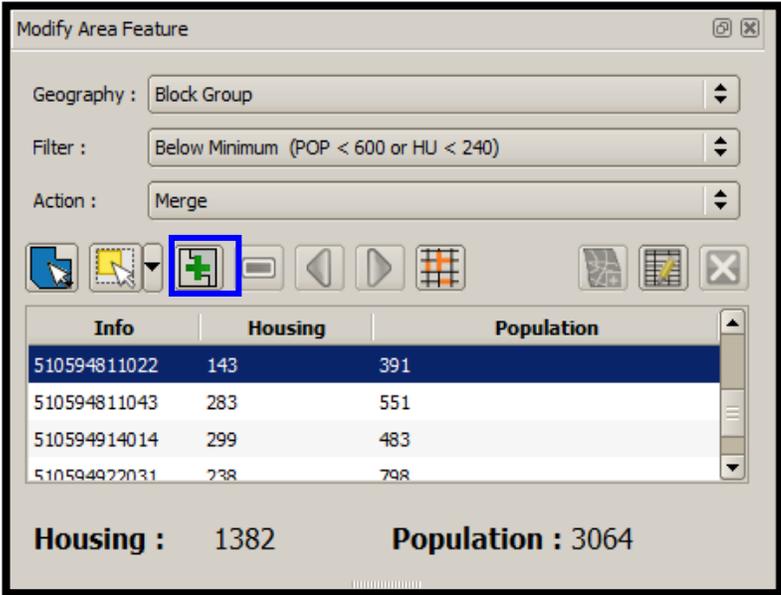
IMPORTANT: Remember to keep the block group threshold numbers in mind:
 Population: 600 – 3,000
 Housing: 240 – 1,200

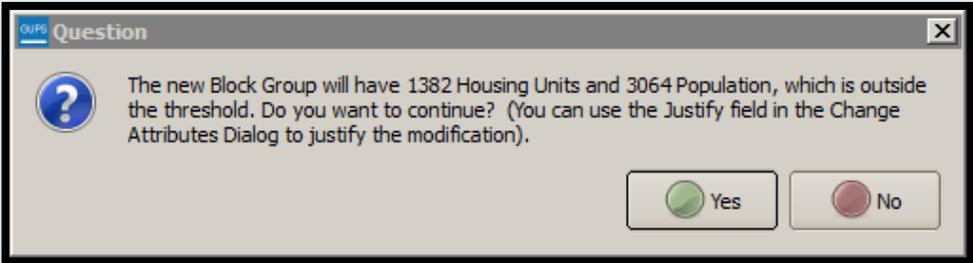


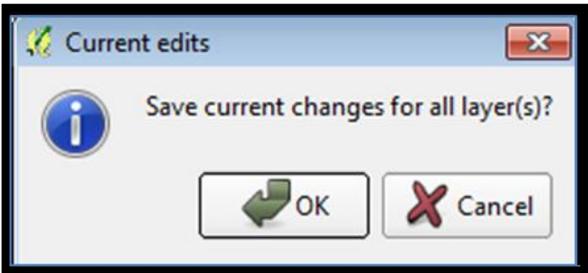
The housing and population totals change dynamically while selecting block groups to merge, allowing participants to see the results of the merge, prior to actually merging the block groups.

	<p>Selecting block groups not contiguous with each other result in geographic errors. Participants must correct contiguity errors (or provide a justification for keeping the block groups noncontiguous) prior to submission to the Census Bureau. The Modify Area Feature tool does not allow a participant to select block groups in different counties.</p>
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Step	Action and Result
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<p>Step 5</p>	<p>If the selected block group(s) generate a valid new block group, click the Merge button to create a new block group.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>510594811022</td> <td>143</td> <td>391</td> </tr> <tr> <td>510594811043</td> <td>283</td> <td>551</td> </tr> <tr> <td>510594914014</td> <td>299</td> <td>483</td> </tr> <tr> <td>510594922031</td> <td>238</td> <td>798</td> </tr> </tbody> </table> <p>Housing : 1382 Population : 3064</p>	Info	Housing	Population	510594811022	143	391	510594811043	283	551	510594914014	299	483	510594922031	238	798
Info	Housing	Population														
510594811022	143	391														
510594811043	283	551														
510594914014	299	483														
510594922031	238	798														

	<p>If a Question window displays showing that the selection is outside the threshold of acceptable ranges, participants need to either justify this threshold violation or select additional geographies to meet the required threshold. Click YES if satisfied with new block group. Click NO if not satisfied and would like to revise.</p> 
---	---

Step	Action and Result
<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS created the new block group with new block group number. If completed successfully, the new block group has no shading (no red or green) unless it still falls outside the acceptable ranges of population or housing unit counts.</p>  <p>To reverse the merge, prior to saving use the Undo button. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p> <p>Note: Execute the Renumbering Tool after all work on the working county is complete. Do not execute it after editing each block group. If a working county submission includes gaps in the block group numbering, the Census Bureau will confirm with the participant whether they want the block groups renumbered or whether they forgot to execute the tool. Pending the answer, the Census Bureau will renumber the block groups prior to creation of the verification products or they will retain the existing block group numbering.</p>
<p>Step 7</p>	<p>Consider using the Change Attributes button within the Modify Area Feature tool to edit the block group number assigned by GUPS, or use the Renumbering Tool in the PSAP toolbar to renumber all of the block groups at the conclusion of all block group updates.</p>
<p>Step 8</p>	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the changes for all layer(s).</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

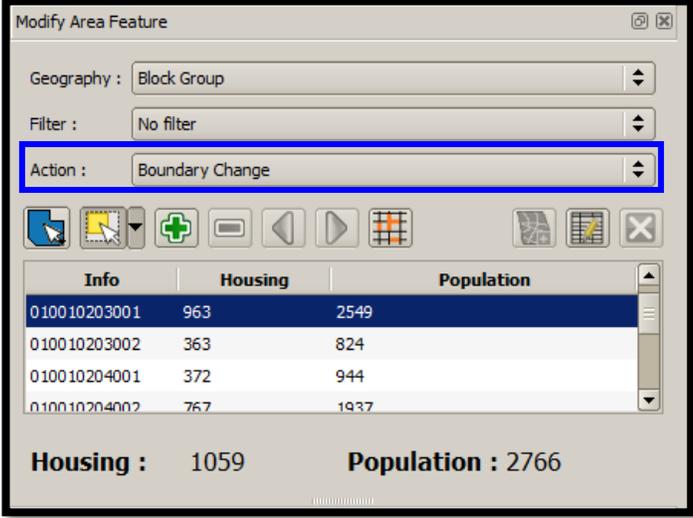
9.4.4 Change Block Group Boundaries

As stated previously, block group comparability is not as important as census tract comparability through the decades. Participants can apply boundary changes to block group

boundaries when the housing units and or the populations are below the required thresholds, when the boundary does not follow any visible features, or when the boundaries shown in GUPS are errant and no longer accurately reflect the real boundary. The Census Bureau will likely accept small revisions to block group boundaries, but will likely deny boundary changes that affect a large amount of population in the affected block groups.

As with census tracts, the boundary change action uses the faces layer to modify block groups. **Table 44** explains the steps to change block group boundaries.

Table 44: Change Block Group Boundaries

Step	Action and Result															
Step 1	Follow steps from Table 41: Select Block Group to open the project and select block group for editing.															
Step 2	<p>Within the Modify Area Feature window, click the drop-down Action menu to select Boundary Change.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>010010203001</td> <td>963</td> <td>2549</td> </tr> <tr> <td>010010203002</td> <td>363</td> <td>824</td> </tr> <tr> <td>010010204001</td> <td>372</td> <td>944</td> </tr> <tr> <td>010010204002</td> <td>767</td> <td>1937</td> </tr> </tbody> </table> <p>Housing : 1059 Population : 2766</p>	Info	Housing	Population	010010203001	963	2549	010010203002	363	824	010010204001	372	944	010010204002	767	1937
Info	Housing	Population														
010010203001	963	2549														
010010203002	363	824														
010010204001	372	944														
010010204002	767	1937														
Step 3	Double click to select a block group from the Info column within the Modify Area Feature window. <i>The Map View zooms to the selected block group to review for a potential boundary change.</i>															

Step **Action and Result**

The screenshot shows the 'Modify Area Feature' dialog box. At the top, there are three dropdown menus: 'Geography' (Block Group), 'Filter' (No filter), and 'Action' (Boundary Change). Below these are several icons for navigation and editing. A table with three columns: 'Info', 'Housing', and 'Population' is displayed. The first row is highlighted with a blue border. Below the table, the total counts for 'Housing' and 'Population' are shown.

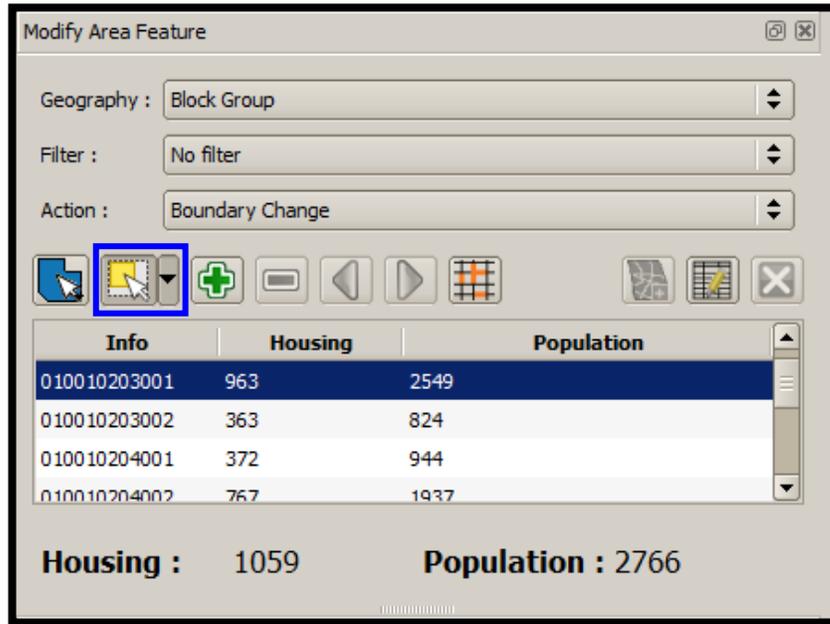
Info	Housing	Population
010010203001	963	2549
010010203002	363	824
010010204001	372	944
010010204002	767	1937

Housing : 1059 **Population :** 2766

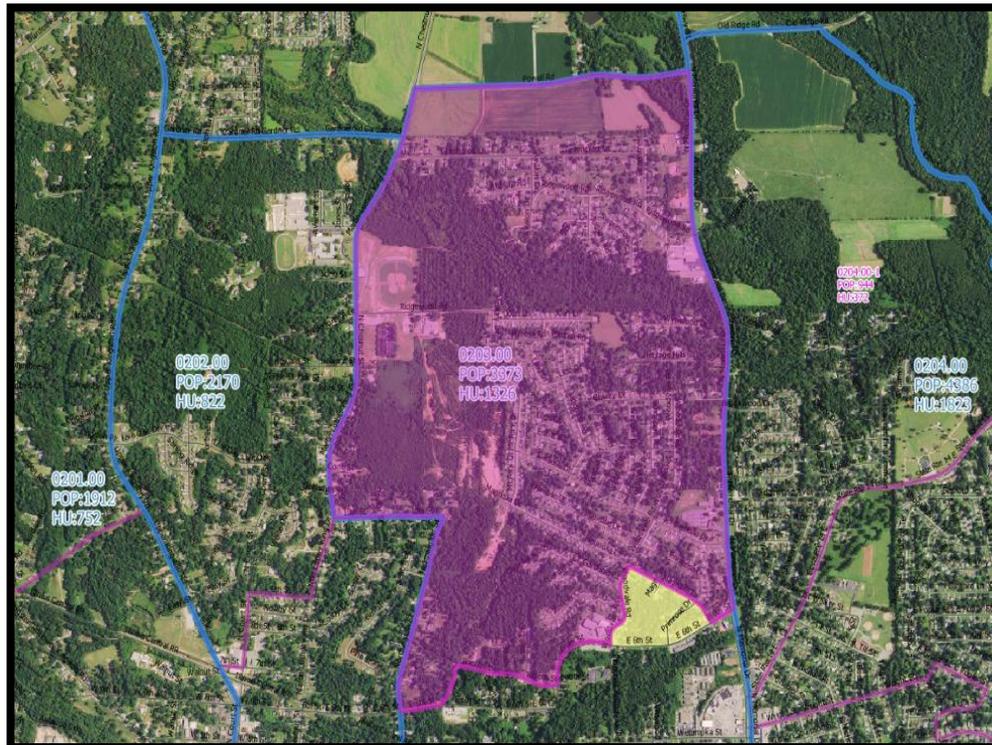
Step	Action and Result
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Step 4

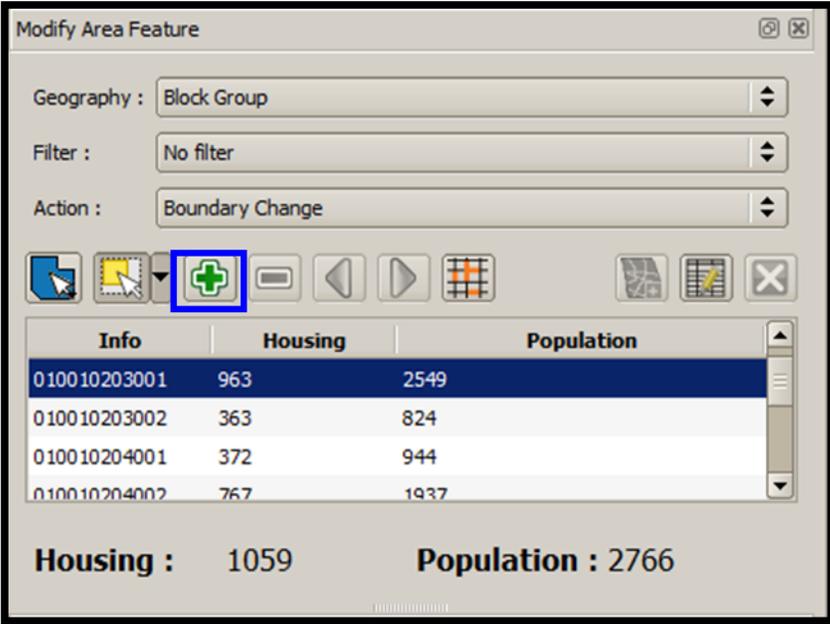
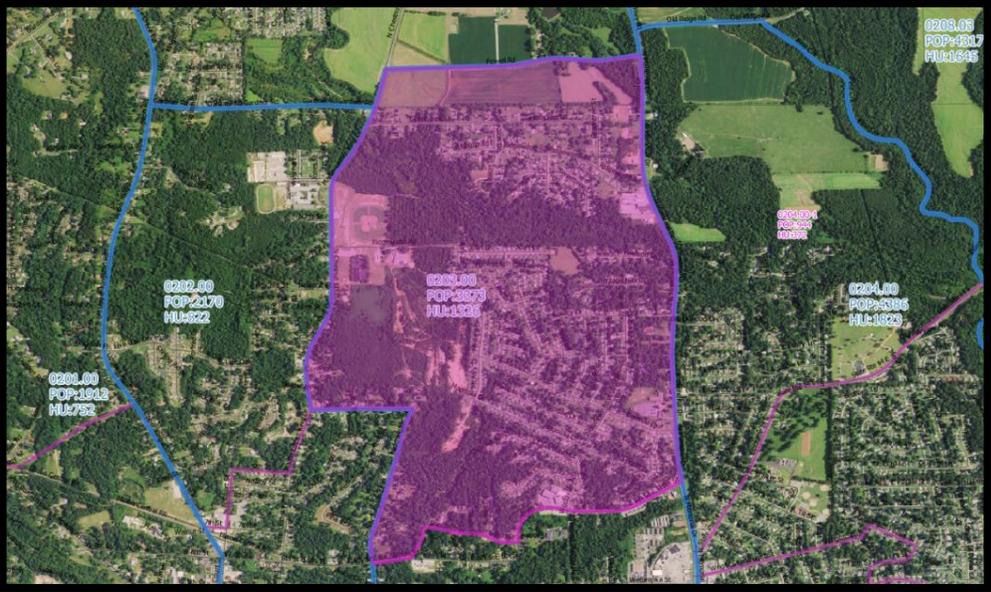
Click the **Select Features By Area** or **single click** button to select the faces to use for boundary change.

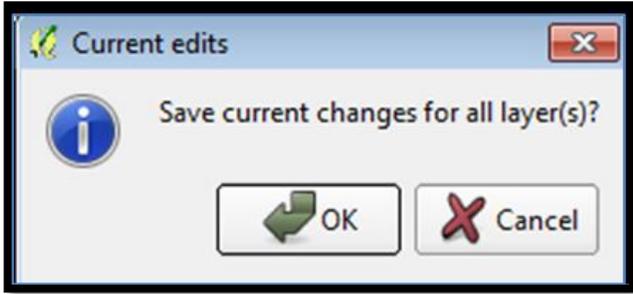


The selected faces highlight in yellow. This step depicts imagery.



IMPORTANT: Remember to keep the block group threshold numbers in mind:
 Population: 600 – 3,000
 Housing: 240 – 1,200

Step	Action and Result
	Selecting noncontiguous faces and the selected block group result in geographic errors. Participants must correct contiguity errors prior to submitting their data to the Census Bureau.
Step 5	<p>Click the Add Area button to apply boundary change to the selected block group.</p>  <p>The housing and population numbers dynamically adjust prior to finalizing the boundary change (change from 963 and 2,549 to 1,059 and 2,766 respectively).</p>
Step 6	<p>Refer to the Map View to verify that GUPS captured the boundary change properly for the block group.</p>  <p>To reverse the boundary change, simply add the area back to the original block group or perform the Undo action prior to saving. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p>

Step	Action and Result
Step 7	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the changes for all layer(s).</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.5 Census Designated Places (CDPs) Update Instructions

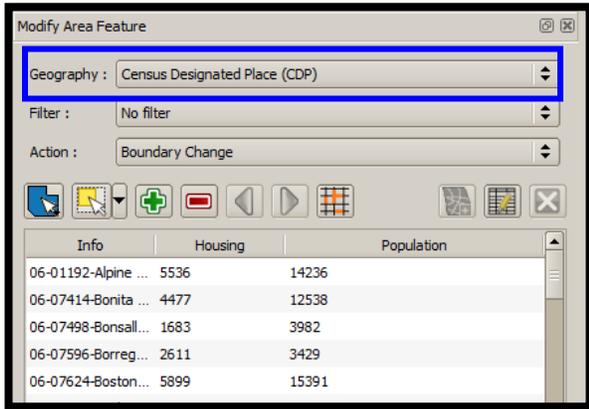
Participants can perform boundary changes to existing CDPs. Performing a boundary change adds faces to or removes faces from existing CDPs. Participants can add new CDPs, delete existing CDPs, and they can perform attribute updates on existing CDPs.

As a reminder from [Chapter 4](#) of this document, the Census Bureau recommends CDP boundaries follow visible features, except in circumstances where the boundary is coincident with the nonvisible boundary of a state, county, minor civil division, or incorporated place.

9.5.1 Select Census Designated Place (CDP)

Steps to select a CDP to begin a review are included in [Table 45](#).

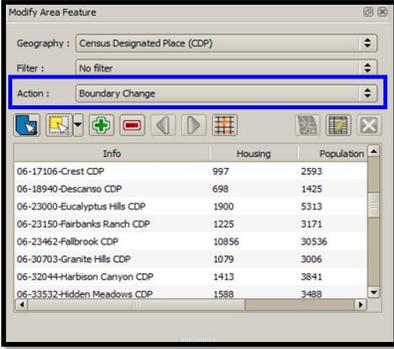
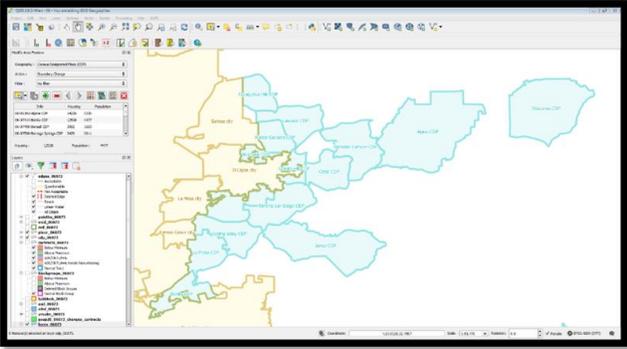
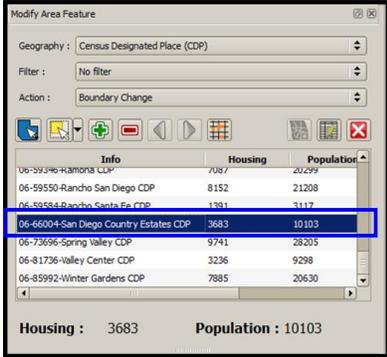
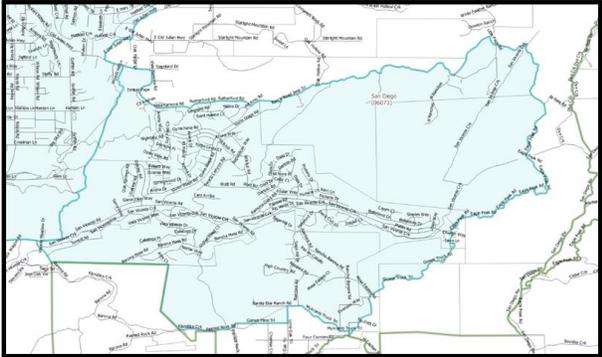
Table 45: Select Census Designated Place

Step	Action and Result																		
Step 1	Download and review the data as described in Section 7.2, Open GUPS and Start a New Project .																		
Step 2	<p>Follow steps from Table 32: Select Census Tracts to open the project. After completing Steps 1 – 4 (step 5 only appears with the initial setup), modify Step 6 by clicking the Modify Area Feature, Geography drop-down menu and selecting Census Designated Place (CDP). Enable the imagery as described in Step 7 in order to visualize and orient to the CDP(s) under review.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>06-01192-Alpine ...</td> <td>5536</td> <td>14236</td> </tr> <tr> <td>06-07414-Bonita ...</td> <td>4477</td> <td>12538</td> </tr> <tr> <td>06-07498-Bonsall...</td> <td>1683</td> <td>3982</td> </tr> <tr> <td>06-07596-Borreg...</td> <td>2611</td> <td>3429</td> </tr> <tr> <td>06-07624-Boston...</td> <td>5899</td> <td>15391</td> </tr> </tbody> </table>	Info	Housing	Population	06-01192-Alpine ...	5536	14236	06-07414-Bonita ...	4477	12538	06-07498-Bonsall...	1683	3982	06-07596-Borreg...	2611	3429	06-07624-Boston...	5899	15391
Info	Housing	Population																	
06-01192-Alpine ...	5536	14236																	
06-07414-Bonita ...	4477	12538																	
06-07498-Bonsall...	1683	3982																	
06-07596-Borreg...	2611	3429																	
06-07624-Boston...	5899	15391																	

9.5.2 Boundary Change – Add Area (CDP)

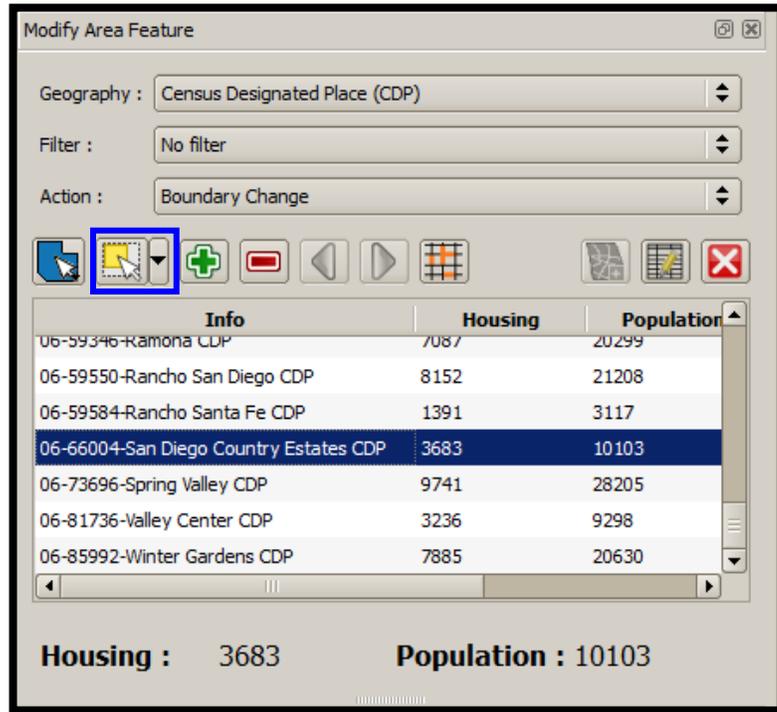
Participants can perform boundary changes to CDPs by adding new area or removing an existing area. The **Boundary Change** action uses the faces layer to modify CDPs. CDP boundaries must follow physical boundaries (with some exceptions as mentioned in [Chapter 4](#)), so the use of imagery when performing this action is vital. If the addition of area dictates an attribute change, refer to the **Change Attributes** section for details on modifying the name of existing CDPs. [Table 46](#) explains the steps to add area to an existing CDP.

Table 46: Boundary Change – Add Area (CDP)

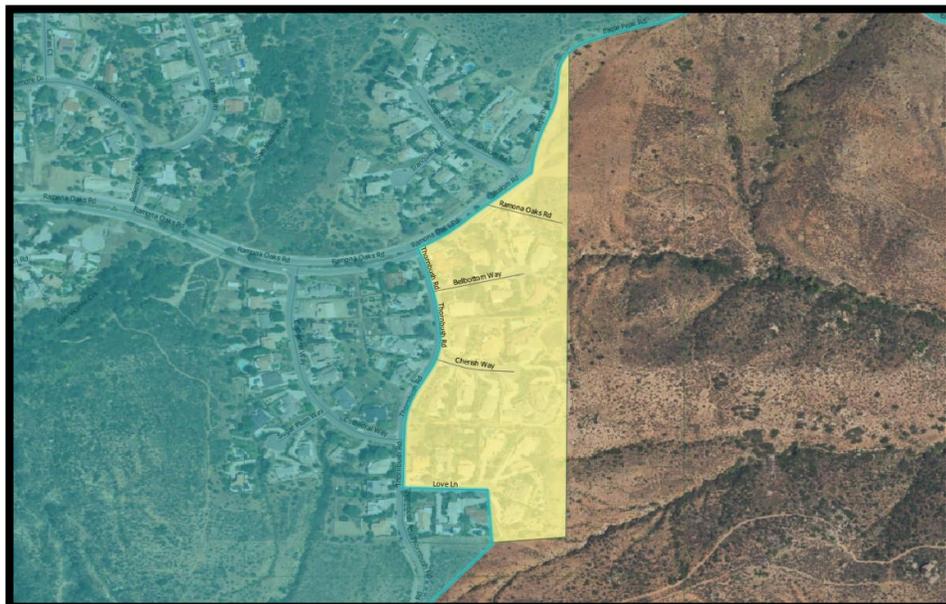
Step	Action and Result
Step 1	Follow steps from Table 45: Select Census Designated Place to open the project and select Census Designated Places for editing.
Step 2	<p>Within the Modify Area Feature window, click the Action drop-down menu to select Boundary Change.</p>   <p>View the CDPs in the Map View window.</p>
Step 3	<p>Double click to select a CDP from the Info column within the Modify Area Feature window. <i>The Map View zooms to the selected CDP to review and highlights it.</i></p>  

Step	Action and Result
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Step 4	<p>Click the Select Features By Area or single click button to select the faces to add to the CDP. Participants can choose any of the four choices beneath the Select Features button to accomplish the modification to the CDP.</p>
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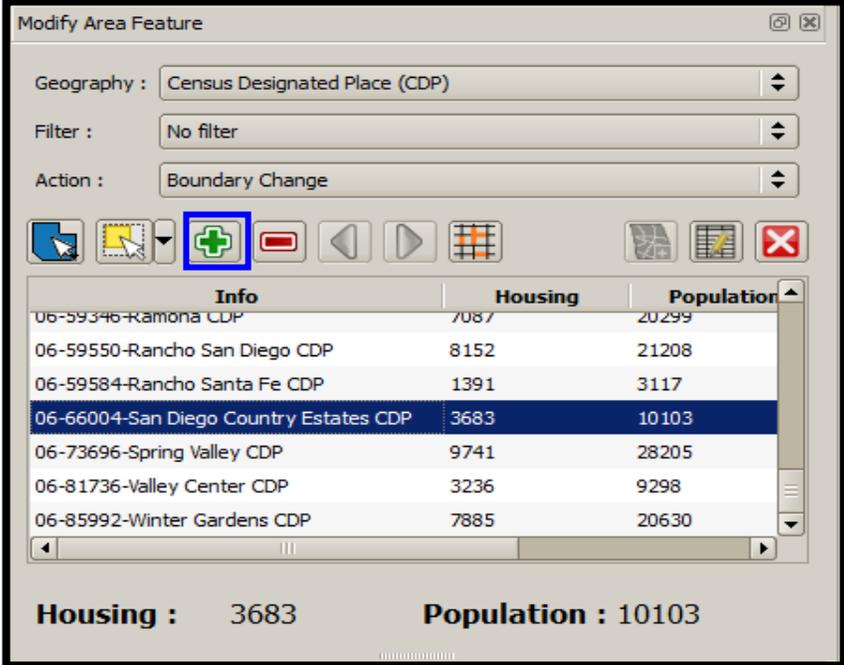


The selected faces highlight in yellow. This step depicts imagery.



Note: The selected faces are outside of the CDP boundary because this is an add action.

Step	Action and Result
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<p>Step 5</p>	<p>Click the Add Area button to apply boundary change (addition of faces/areas) to the selected CDP.</p> 
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<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS captured the boundary change properly for the CDP. Zoom to the proper scale for viewing if the area added is small. If the boundary change is incorrect, the next section explains the process for removing area from a CDP.</p>  <p>To reverse the boundary change, simply remove the area or perform the Undo action prior to saving. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p>
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Step	Action and Result
Step 7	<p>Click the Save button to save the edits and update the project. The Current edits confirmation dialog box asks to save the changes for all layer(s). For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p> <div style="text-align: center;"> </div> <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.5.3 Boundary Change – Remove Area (CDP)

Participants can perform boundary changes to CDPs by adding new area or removing an existing area. The **Boundary Change** action uses the faces layer to modify CDPs. CDP boundaries must follow physical boundaries (with some exceptions as mentioned in [Chapter 4](#), so the use of imagery when performing this action is vital. If the removal of area dictates an attribute change, refer to the **Change Attributes** section for details on modifying the name of existing CDPs.

This section covers removing area from an existing CDP. [Table 47](#) explains the steps to remove area from an existing CDP.

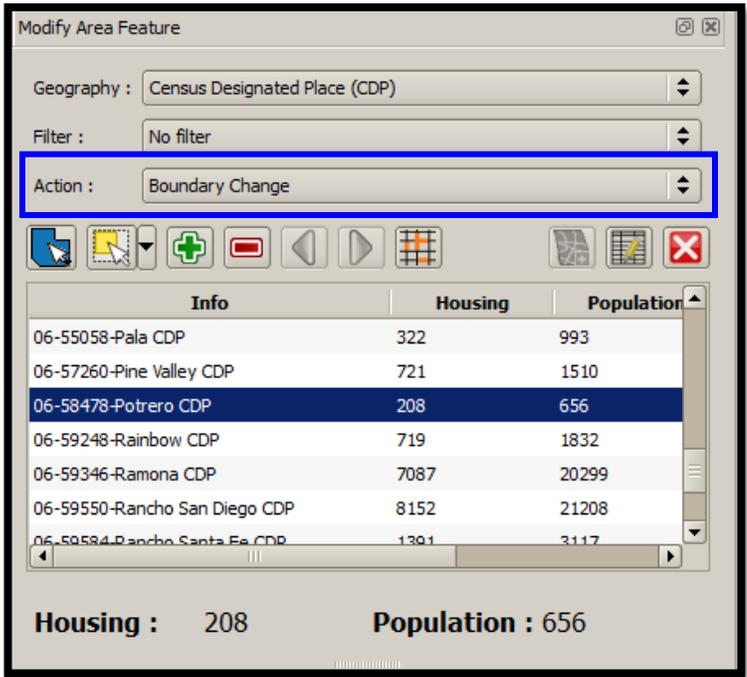
Table 47: Boundary Change – Remove Area (CDP)

Step	Action and Result
Step 1	Follow steps from Table 45: Select Census Designated Place to open the project and select Census Designated Places for editing.

Step **Action and Result**

Step 2

Within the **Modify Area Feature** window, click the **Action** drop-down menu to select **Boundary Change**.



View the CDPs in the **Map View** window.

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

<p>Step 3</p>	<p>Double click to select a CDP from the Info column within the Modify Area Feature window. <i>The Map View zooms to the selected CDP to review and highlights it.</i></p> <div> <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>06-55058-Pala CDP</td> <td>322</td> <td>993</td> </tr> <tr> <td>06-57260-Pine Valley CDP</td> <td>721</td> <td>1510</td> </tr> <tr> <td>06-58478-Potrero CDP</td> <td>208</td> <td>656</td> </tr> <tr> <td>06-59248-Rainbow CDP</td> <td>719</td> <td>1832</td> </tr> <tr> <td>06-59346-Ramona CDP</td> <td>7087</td> <td>20299</td> </tr> <tr> <td>06-59550-Rancho San Diego CDP</td> <td>8152</td> <td>21208</td> </tr> <tr> <td>06-59584-Rancho Santa Fe CDP</td> <td>1391</td> <td>3117</td> </tr> </tbody> </table> <p>Housing : 208 Population : 656</p> </div>	Info	Housing	Population	06-55058-Pala CDP	322	993	06-57260-Pine Valley CDP	721	1510	06-58478-Potrero CDP	208	656	06-59248-Rainbow CDP	719	1832	06-59346-Ramona CDP	7087	20299	06-59550-Rancho San Diego CDP	8152	21208	06-59584-Rancho Santa Fe CDP	1391	3117
Info	Housing	Population																							
06-55058-Pala CDP	322	993																							
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06-59550-Rancho San Diego CDP	8152	21208																							
06-59584-Rancho Santa Fe CDP	1391	3117																							

<p>Step 4</p>	<p>Click the Select Features By Area or single click button to select the faces to remove from the CDP. Participants can choose any of the four choices beneath the Select Features button to accomplish the modification to the CDP.</p> <div> <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>06-55058-Pala CDP</td> <td>322</td> <td>993</td> </tr> <tr> <td>06-57260-Pine Valley CDP</td> <td>721</td> <td>1510</td> </tr> <tr> <td>06-58478-Potrero CDP</td> <td>208</td> <td>656</td> </tr> <tr> <td>06-59248-Rainbow CDP</td> <td>719</td> <td>1832</td> </tr> <tr> <td>06-59346-Ramona CDP</td> <td>7087</td> <td>20299</td> </tr> <tr> <td>06-59550-Rancho San Diego CDP</td> <td>8152</td> <td>21208</td> </tr> <tr> <td>06-59584-Rancho Santa Fe CDP</td> <td>1391</td> <td>3117</td> </tr> </tbody> </table> <p>Housing : 208 Population : 656</p> </div> <p><i>The selected faces highlight in yellow. This step depicts imagery.</i></p>	Info	Housing	Population	06-55058-Pala CDP	322	993	06-57260-Pine Valley CDP	721	1510	06-58478-Potrero CDP	208	656	06-59248-Rainbow CDP	719	1832	06-59346-Ramona CDP	7087	20299	06-59550-Rancho San Diego CDP	8152	21208	06-59584-Rancho Santa Fe CDP	1391	3117
Info	Housing	Population																							
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06-59584-Rancho Santa Fe CDP	1391	3117																							

Step	Action and Result
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Note: The selected faces are inside of the CDP boundary because this is a remove action.

Step 5	Click the Remove Area button to apply boundary change (removal of faces/areas) from the selected CDP.
---------------	--

Modify Area Feature

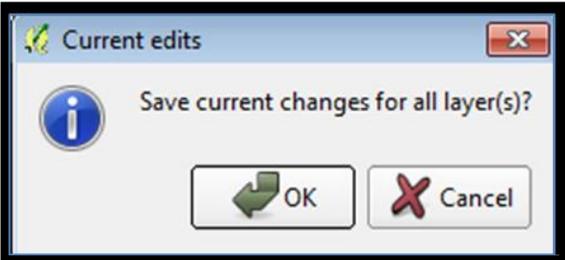
Geography : Census Designated Place (CDP)

Filter : No filter

Action : Boundary Change

Info	Housing	Population
06-55058-Pala CDP	322	993
06-57260-Pine Valley CDP	721	1510
06-58478-Potrero CDP	208	656
06-59248-Rainbow CDP	719	1832
06-59346-Ramona CDP	7087	20299
06-59550-Rancho San Diego CDP	8152	21208
06-59584-Rancho Santa Fe CDP	1391	3117

Housing : 208 Population : 656

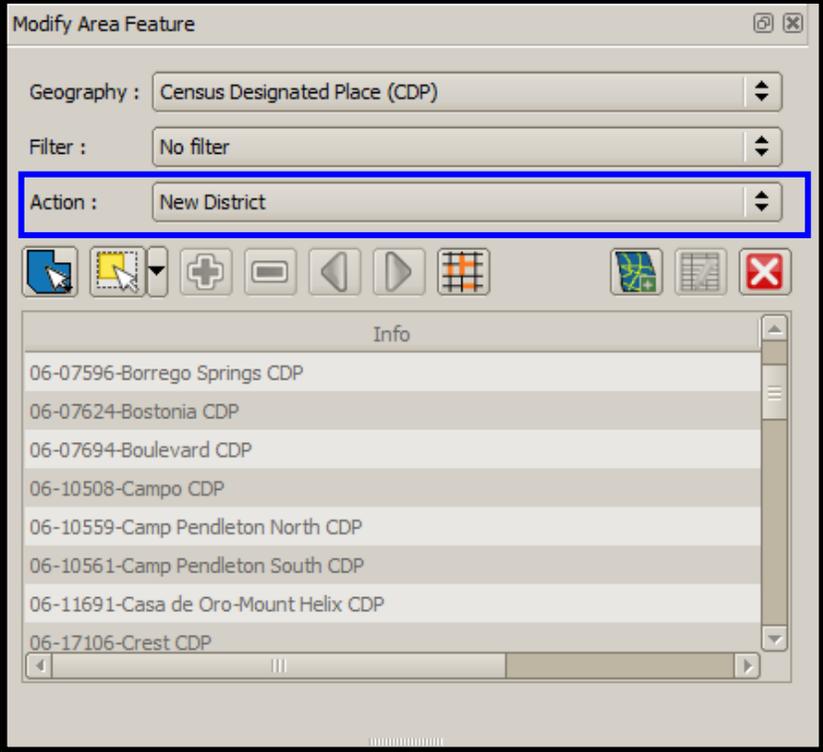
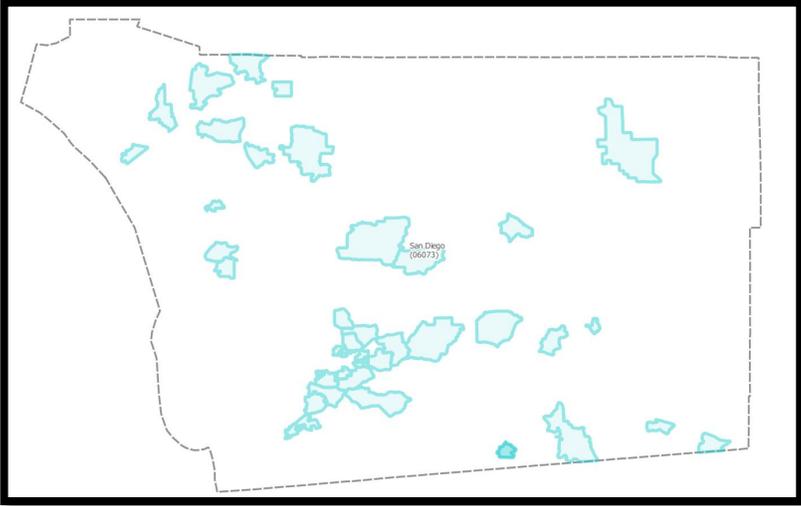
Step	Action and Result
<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS captured the boundary change properly for the CDP. Zoom to the proper scale if the area is small. If the boundary change is incorrect, the previous section on Boundary Change explains the process for adding area to a CDP.</p>  <p>To reverse the boundary change, simply add the area back to the CDP or perform the Undo action prior to saving. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p>
<p>Step 7</p>	<p>Click the Save button to save the edits and update the project. The Current edits confirmation dialog box asks to save the changes for all layer(s). For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.5.4 New District – Add Entity (Add a New CDP)

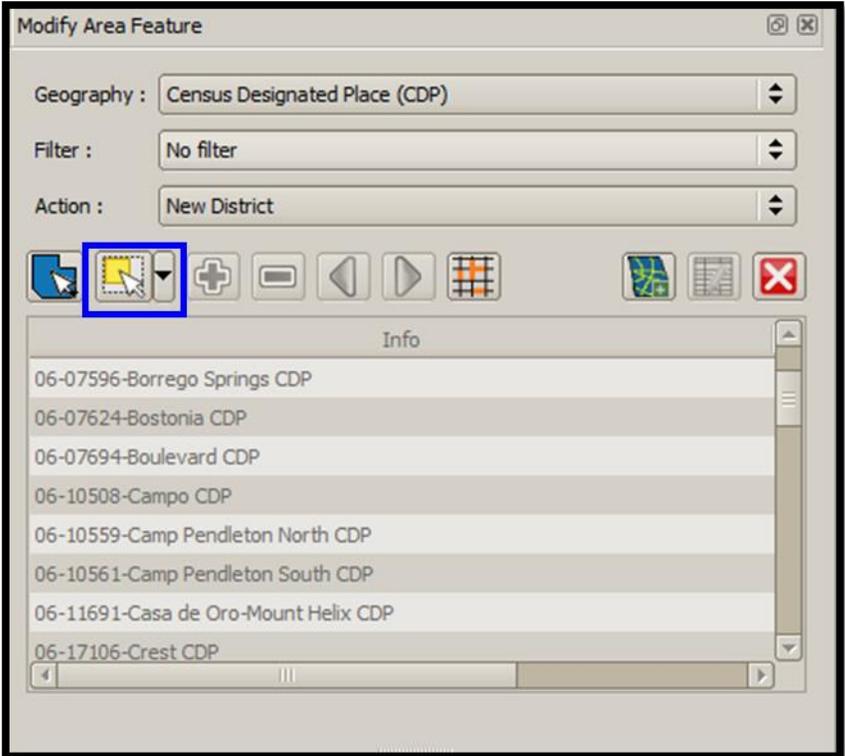
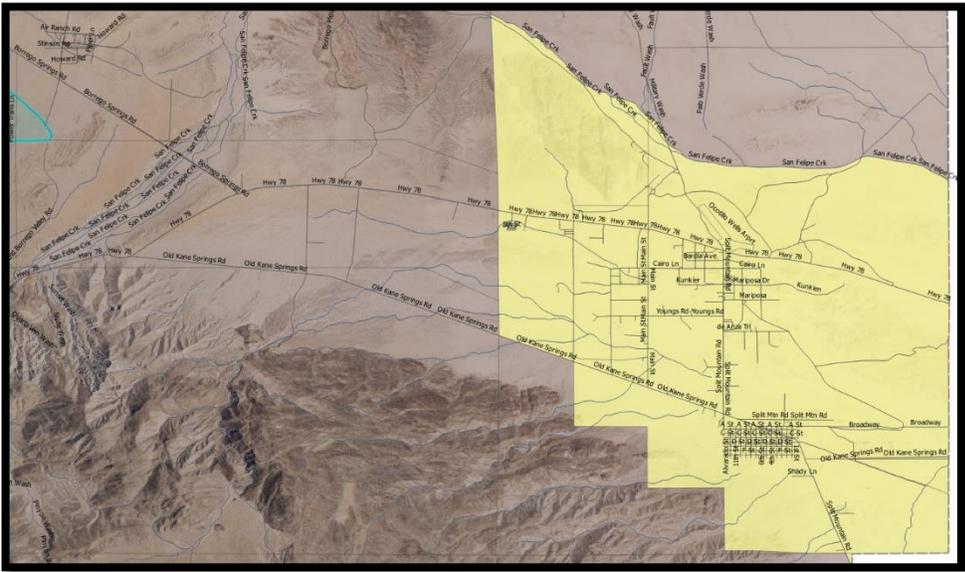
Participants can add new CDPs as part of their PSAP work. As with adding area or removing area from an existing CDP, the **New District** action uses the faces layer to add new CDPs. CDP boundaries must follow physical boundaries (with some exceptions as mentioned in [Chapter 4](#)), so the use of imagery when performing this action is vital.

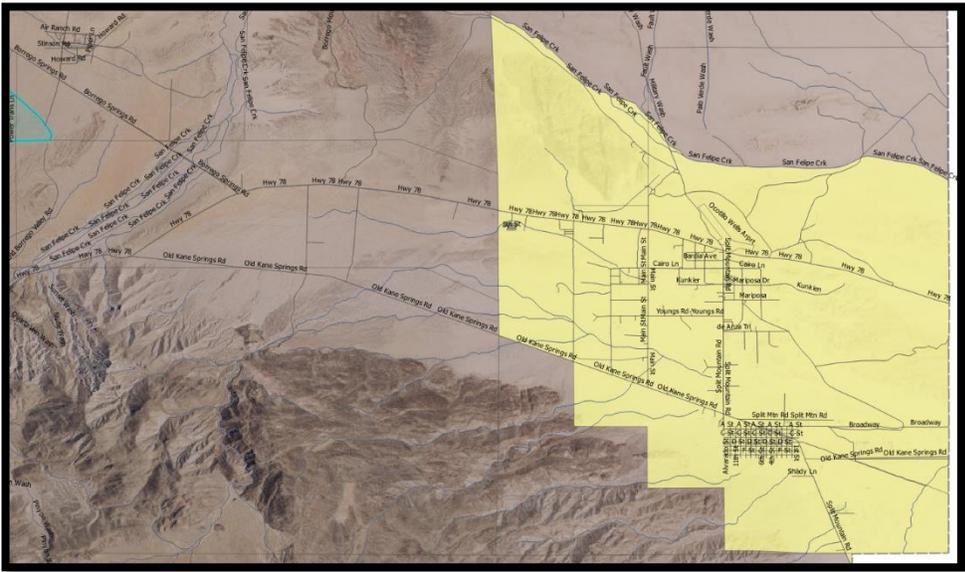
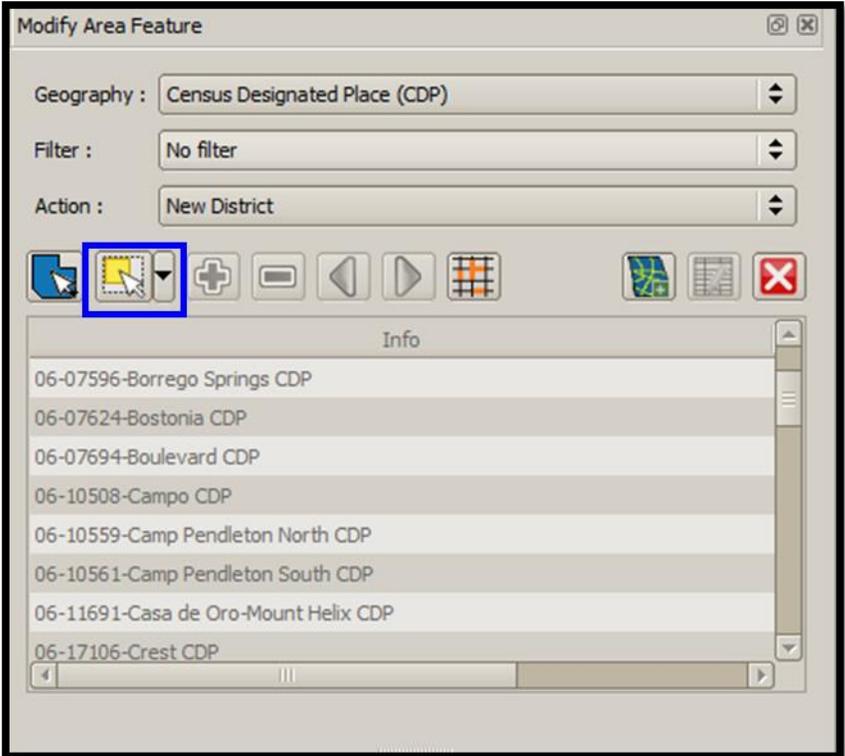
This section covers adding a new CDP to a working county. [Table 48](#) explains the steps to add new CDP using the faces layer.

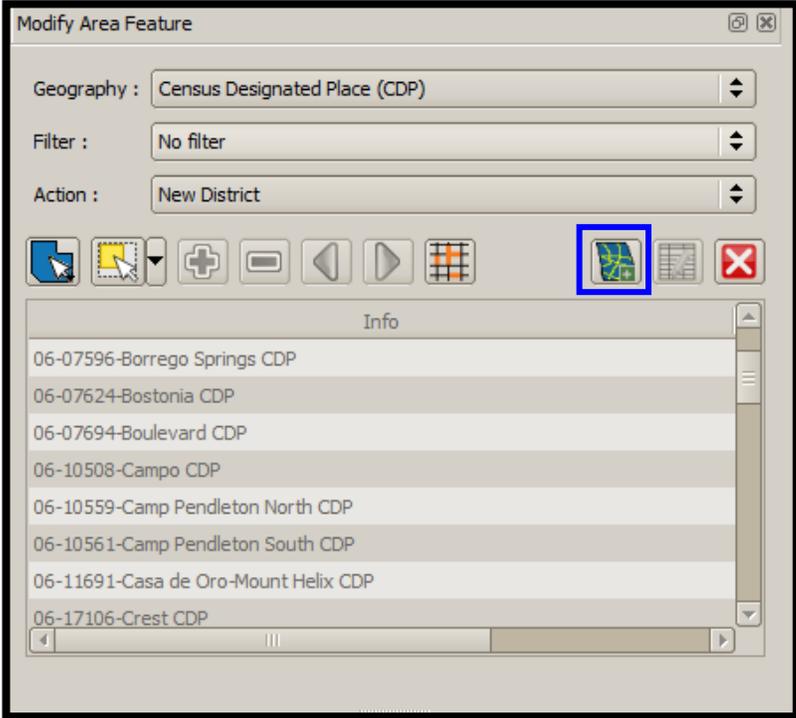
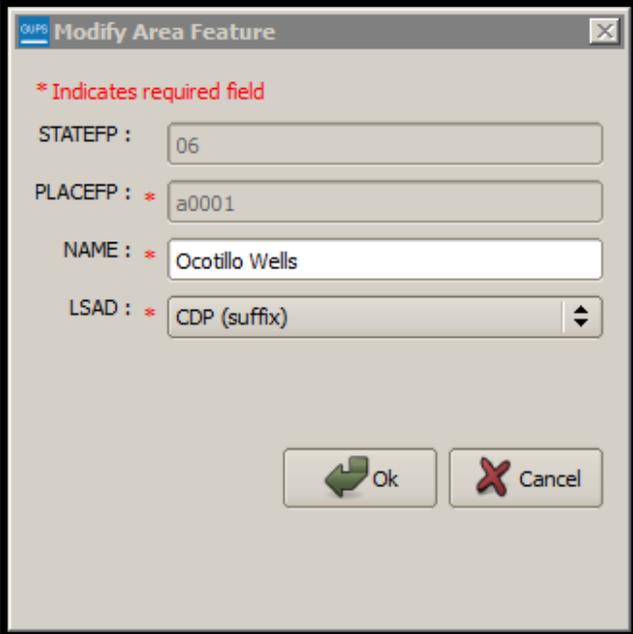
Table 48: New District - Add Entity (Add a New CDP)

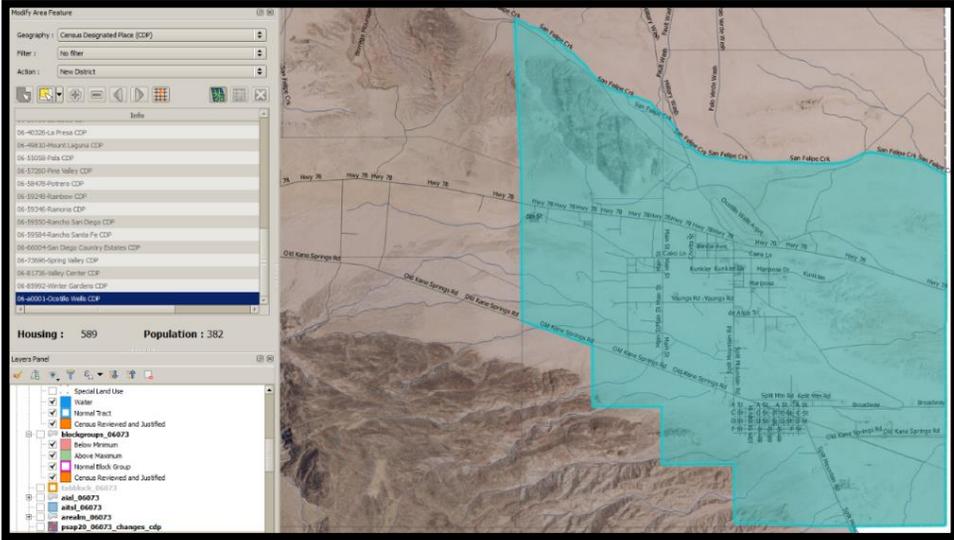
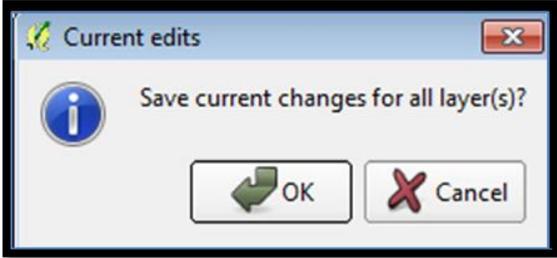
Step	Action and Result
Step 1	Follow steps from Table 45: Select Census Designated Place to open the project and select Census Designated Places for editing.
Step 2	<p>Within the Modify Area Feature window, click the Action drop-down menu to select New District.</p>   <p>View the existing CDPs in the Map View window and determine if any are missing.</p> <p>To determine if a CDP is missing, use the Zoom In button and the Pan button on the Standard toolbar to zoom and pan around the working county.</p>

Step	Action and Result
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Step 3	<p>Click the Select Features By Area or single click button to select the faces to add to the new CDP. Participants can choose any of the four choices beneath the Select Features button to accomplish the creation of the new CDP.</p>  <p>The selected faces highlight in yellow. This step depicts imagery.</p>  <p>Note: Select faces that do not belong to an existing CDP area.</p>
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Step	Action and Result
<p>Step 4</p>	<p>Click the Add Entity button to create a new CDP.</p> 
<p>Step 5</p>	<p>The <i>Modify Area Feature</i> window opens.</p> <p>Enter the Name of the newly created CDP and then click the OK button.</p> 

Step	Action and Result
<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS captured the new CDP properly. Zoom to the proper scale to confirm the boundaries and area of the CDP. If CDP is incorrect, the previous two sections on Boundary Change explain the process to use for modifying the newly created CDP.</p> 
<p>Step 7</p>	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the changes for all layer(s).</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.5.5 Boundary Change – Delete Area Feature (Delete an Existing CDP)

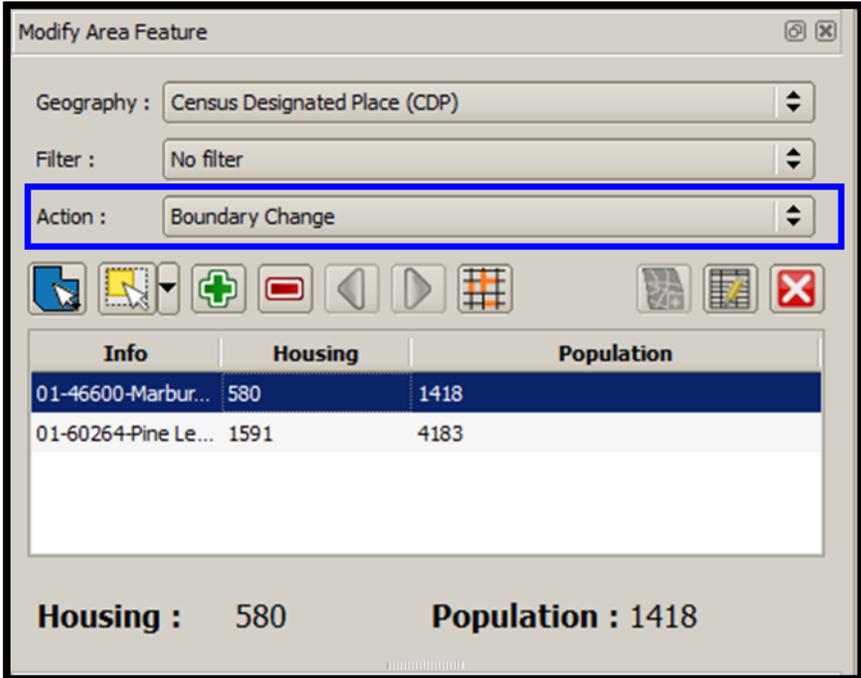
Participants can delete existing CDPs as part of their PSAP work. Before deleting an existing CDP, participants should ensure that none of the characteristics described in [Chapter 4](#) exist for the CDP under consideration for deletion. Presence of those characteristics leads to retention of the existing CDP. Pending review of the submission, the Census Bureau may disapprove of the deletion and retain CDPs proposed for deletion by participants.

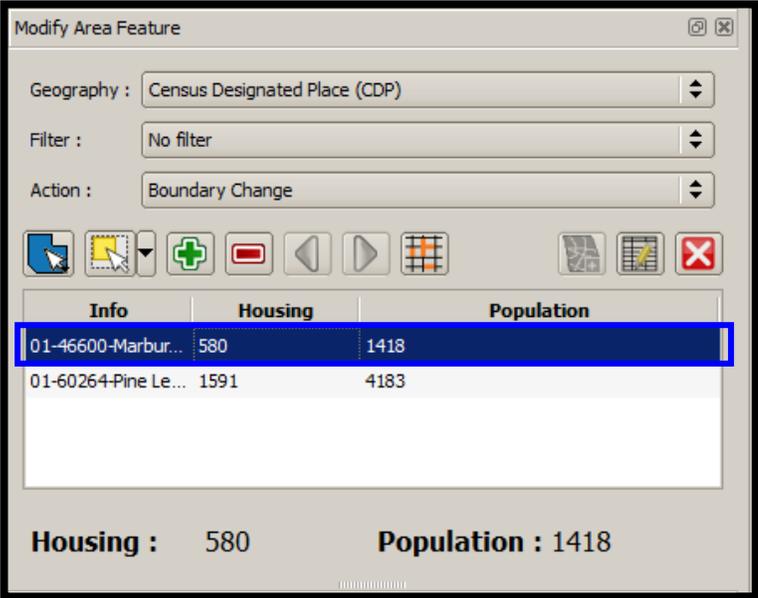
This section covers deleting an existing CDP. [Table 49](#) explains the steps to remove an existing CDP from the working county.

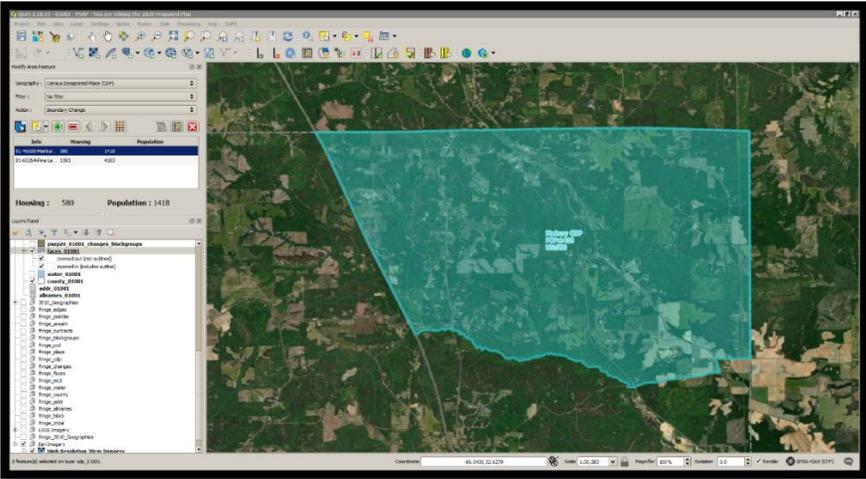
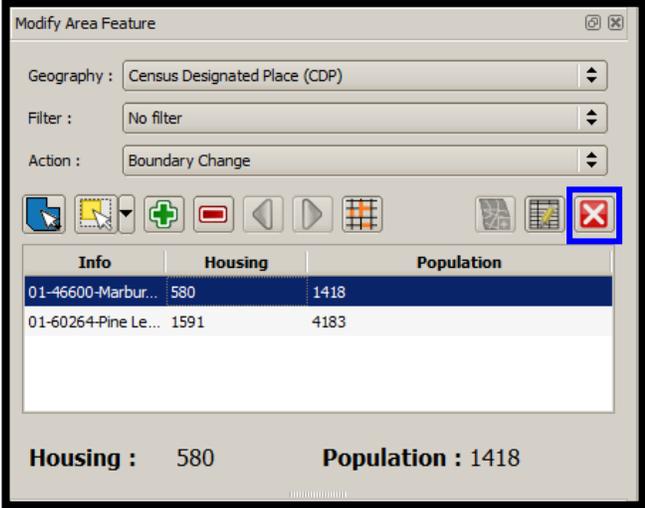
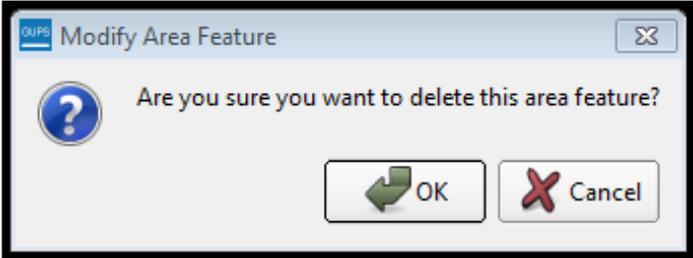
Table 49: Boundary Change – Delete Area Feature (Delete an Existing CDP)

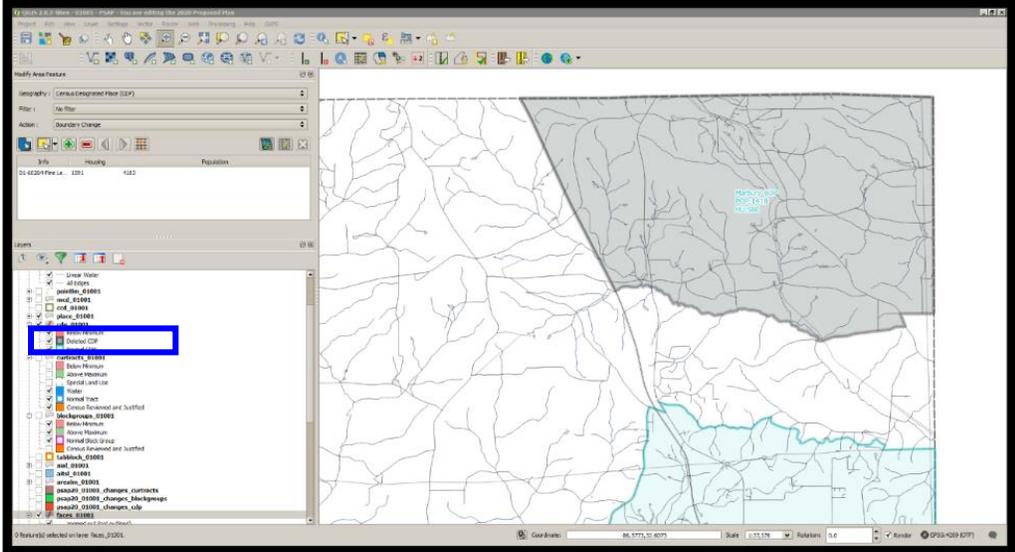
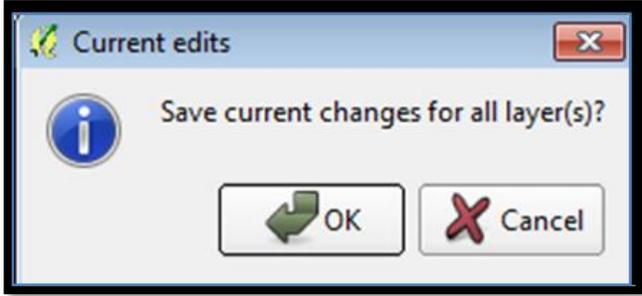
Step	Action and Result
<p>Step 1</p>	<p>Follow steps from Table 45: Select Census Designated Place to open the project and select Census Designated Places for editing.</p>

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

<p>Step 2</p>	<p>Within the Modify Area Feature window, click the Action drop-down menu to select Boundary Change.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>01-46600-Marbur...</td> <td>580</td> <td>1418</td> </tr> <tr> <td>01-60264-Pine Le...</td> <td>1591</td> <td>4183</td> </tr> </tbody> </table> <p>Housing : 580 Population : 1418</p>	Info	Housing	Population	01-46600-Marbur...	580	1418	01-60264-Pine Le...	1591	4183
Info	Housing	Population								
01-46600-Marbur...	580	1418								
01-60264-Pine Le...	1591	4183								

<p>Step 3</p>	<p>Double click to select the CDP to delete from the Info column within the Modify Area Feature window.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>01-46600-Marbur...</td> <td>580</td> <td>1418</td> </tr> <tr> <td>01-60264-Pine Le...</td> <td>1591</td> <td>4183</td> </tr> </tbody> </table> <p>Housing : 580 Population : 1418</p>	Info	Housing	Population	01-46600-Marbur...	580	1418	01-60264-Pine Le...	1591	4183
Info	Housing	Population								
01-46600-Marbur...	580	1418								
01-60264-Pine Le...	1591	4183								

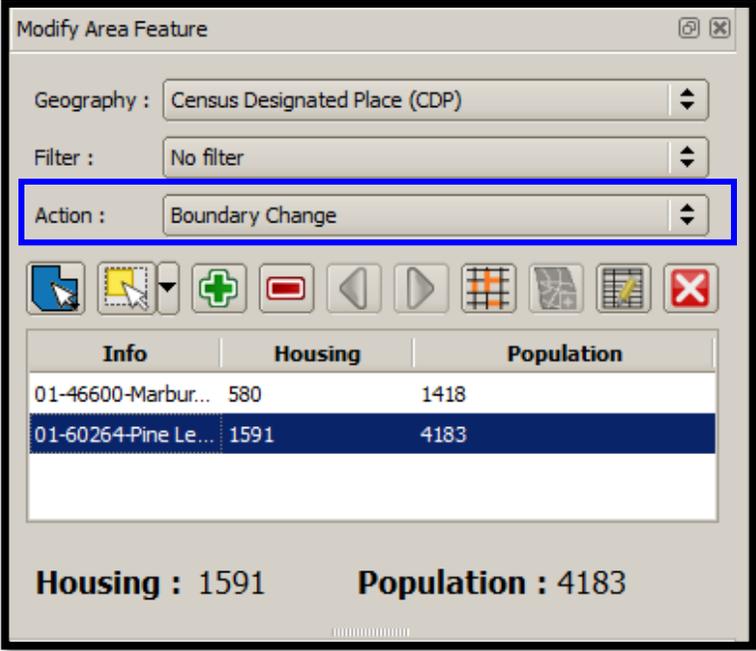
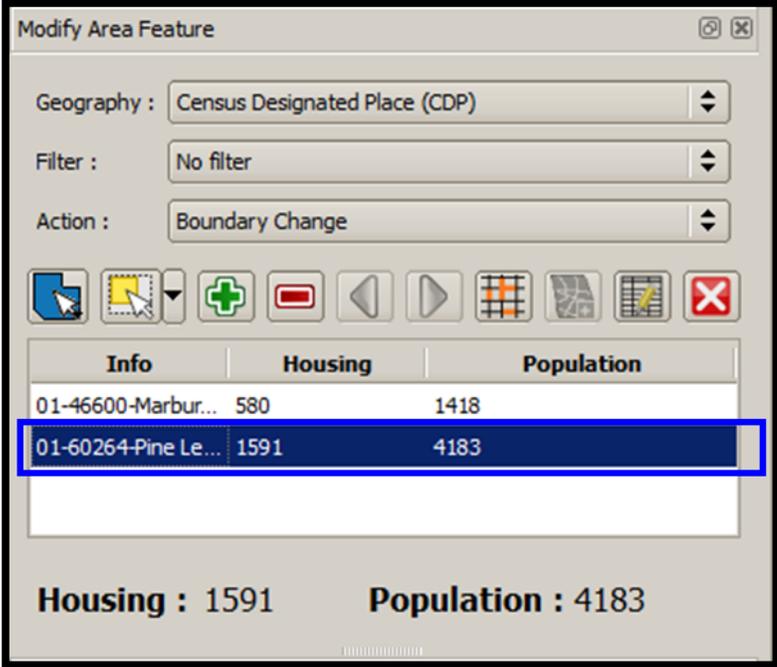
Step	Action and Result									
	<p>The Map View zooms to the selected CDP to review and highlights it. This step depicts imagery.</p> 									
<p>Step 4</p>	<p>Click the Delete Area Feature button to delete the CDP from the list.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Housing</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>01-46600-Marbur...</td> <td>580</td> <td>1418</td> </tr> <tr> <td>01-60264-Pine Le...</td> <td>1591</td> <td>4183</td> </tr> </tbody> </table> <p>Housing : 580 Population : 1418</p>	Info	Housing	Population	01-46600-Marbur...	580	1418	01-60264-Pine Le...	1591	4183
Info	Housing	Population								
01-46600-Marbur...	580	1418								
01-60264-Pine Le...	1591	4183								
<p>Step 5</p>	<p>The Modify Area Feature confirmation dialog box displays to verify the deletion of this area feature.</p> <p>Click OK if satisfied with the deletion. Click Cancel to discard the deletion.</p>  <p>For this example, click the OK button to continue.</p>									

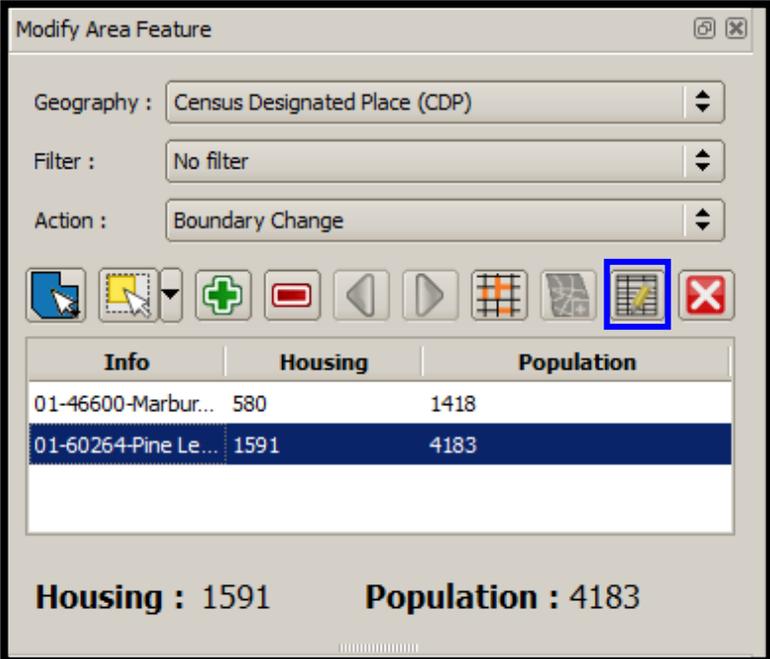
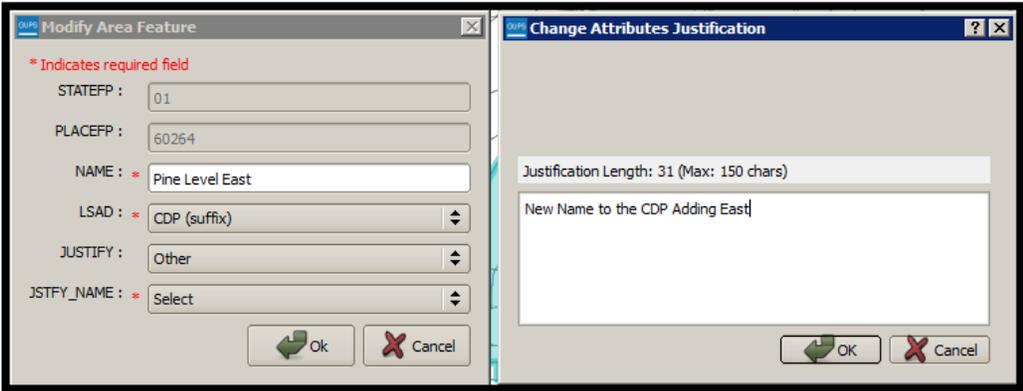
Step	Action and Result
<p>Step 6</p>	<p>Refer to the Map View to verify that GUPS deleted the CDP. Zoom to the proper scale to confirm the deletion. If participants decide the CDP deletion was incorrect, the previous section on New District – Add Entity (Add a new CDP) explains the process to use for adding the deleted CDP back into the working county.</p> 
<p>Step 7</p>	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the changes for all layer(s).</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.5.6 Boundary Change – Change Attributes (CDP)

Using the **Boundary Change** action, participants can perform attribute updates on existing CDPs. Attributes that can be modified include the **NAME**, **JUSTIFY**, and **JSTFY_NAME** fields. Refer to [Chapter 4](#) for naming rules and recommendations. When a participant changes an existing CDP name or creates a new CDP, then the **JSTFY_NAME** field becomes required. The participant uses the field to provide reasoning for the chosen name. Participants may also use the **JUSTIFY** field to provide additional reasoning for the name change to an existing CDP or creating a new CDP. If participants make substantial changes to the boundaries of an existing CDP, then the Census Bureau recommends the modification of the name or a strong justification for retaining the name. [Table 50](#) explains the steps to change the attributes an existing CDP.

Table 50: Boundary Change – Change Attributes (CDP)

Step	Action and Result
Step 1	Follow steps from Table 45: Select Census Designated Place to open the project and select Census Designated Places for editing.
Step 2	<p>Within the Modify Area Feature window, click the Action drop-down menu to select Boundary Change.</p> 
Step 3	<p>Double click to select the CDP to modify from the Info column within the Modify Area Feature window. <i>The Map View zooms to the selected CDP and highlights it (not shown in this example).</i></p> 

Step	Action and Result
<p>Step 4</p>	<p>Click the Change Attributes button to modify the CDPs attributes.</p> 
<p>Step 5</p>	<p><i>The Modify Area Feature window displays.</i> Enter the required data (fields with the red asterisks). <i>GUPS pre-populates the Name field with the selected CDP name and the LSAD field defaults to the geography selected.</i> In this case, CDP. The NAME, JUSTIFY, and JSTFY_NAME fields can be updated. When finished, press OK.</p>  <p>Note: To change the name of an existing CDP, follow the CDP naming criteria outlined in Chapter 4. Participants must provide justification such as the community has officially renamed (e.g., Tyson’s Corner VA rebranded itself as Tysons VA). Signage and other proof should exist to confirm the renaming.</p>

9.6 Census County Division Update Instructions

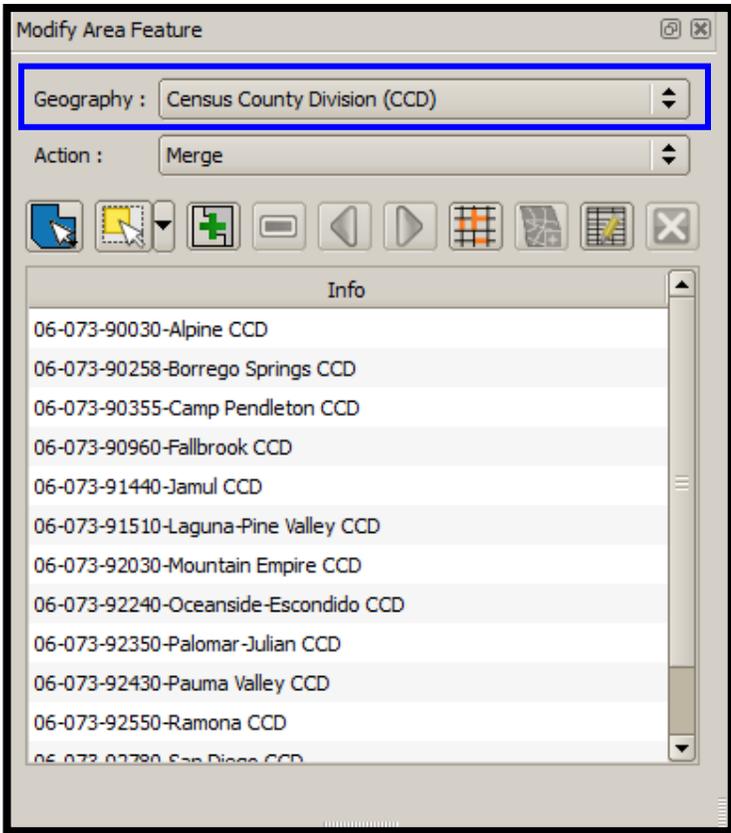
Participants can merge CCDs or perform boundary changes, specifically by adding faces to existing CCDs. Participants can add new CCDs, and they can perform attribute updates for existing CCDs.

As a reminder from [Chapter 5](#), CCD boundaries normally follow visible features and county lines, but may also follow corporate boundaries and other nonvisible features.

9.6.1 Select Census County Division (CCD)

Steps to select a CCD to begin a review are included in [Table 51](#).

Table 51: Select Census County Division (CCD)

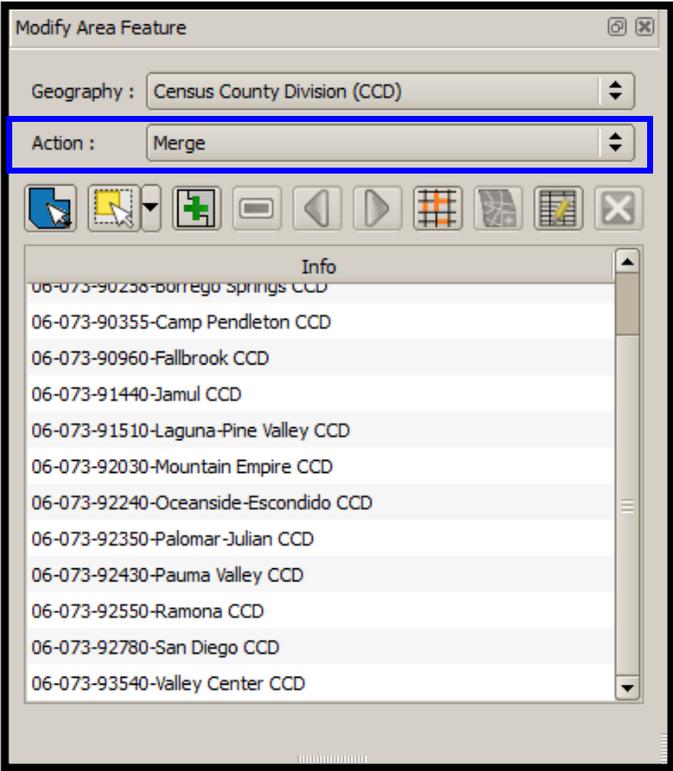
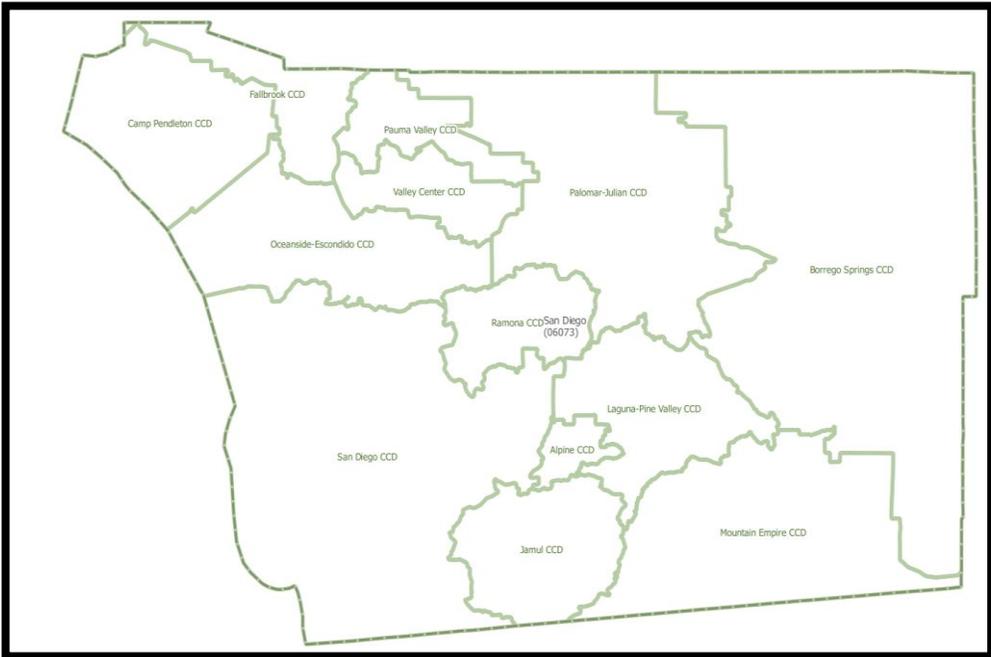
Step	Action and Result
Step 1	Download and review the data as described in Section 7.2, Open GUPS and Start a New Project .
Step 2	<p>Follow steps from Table 32: Select Census Tracts to open the existing project. After completing Steps 1 – 4 (step 5 only appears with the initial setup), modify Step 6 by clicking the Modify Area Feature, Geography drop-down menu and selecting Census County Division (CCD). Enable the imagery as described in Step 7 in order to visualize and orient to the CCD(s) under review. <i>The following screenshot is for San Diego County, California.</i></p> 

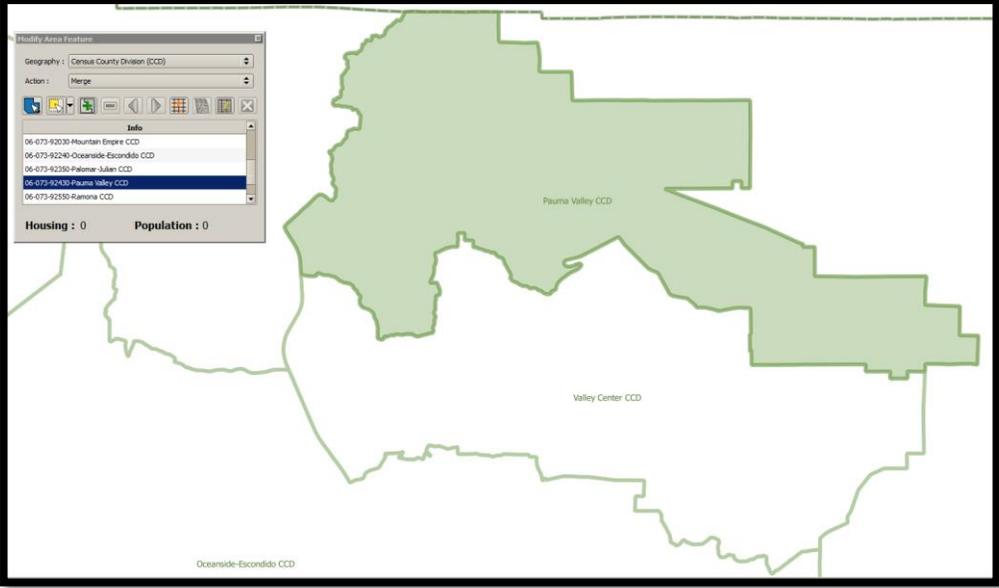
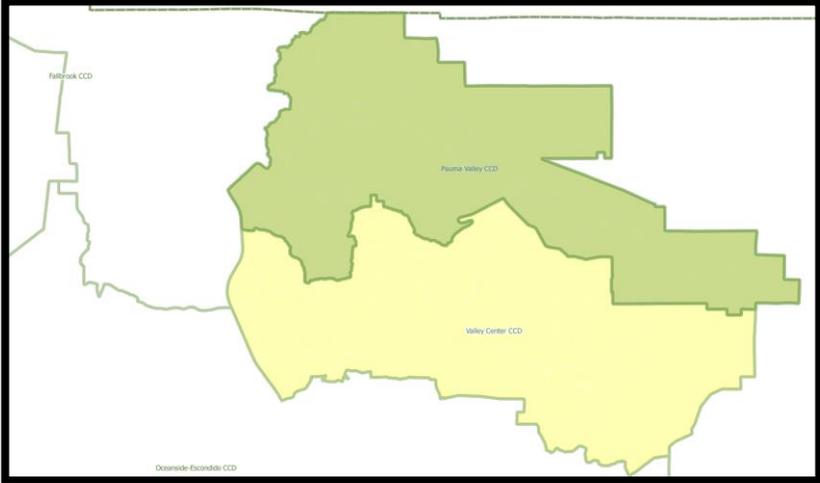
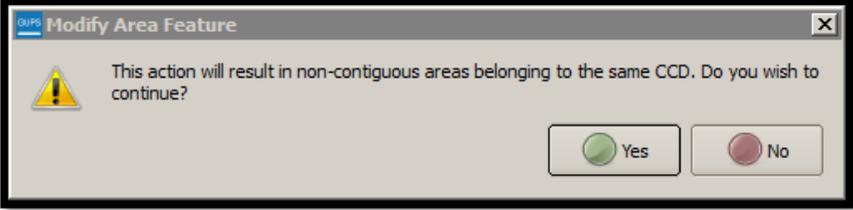
9.6.2 Merge Census County Divisions (CCDs)

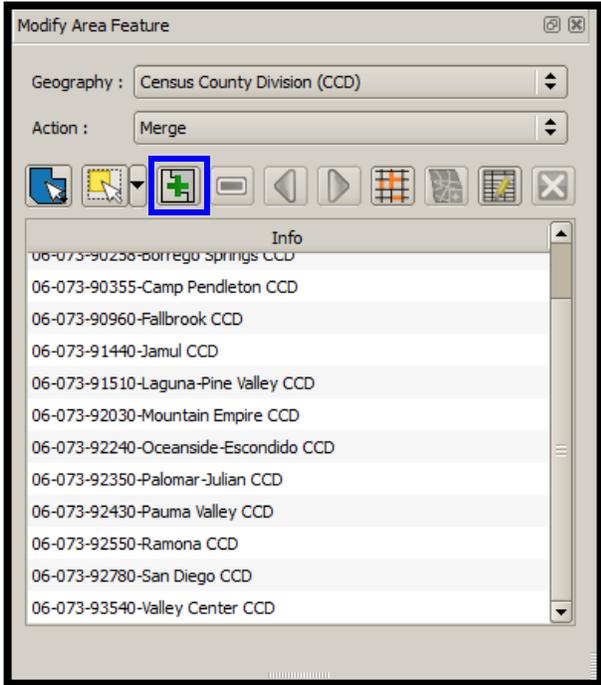
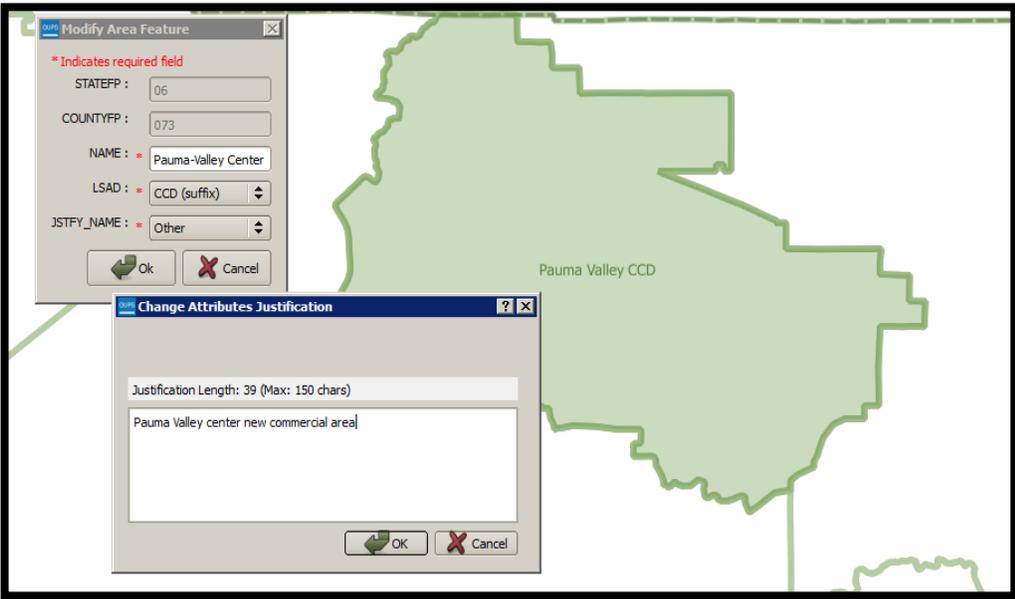
Participants can merge CCDs to form a new CCD. [Table 52](#) explains the steps to merge CCDs.

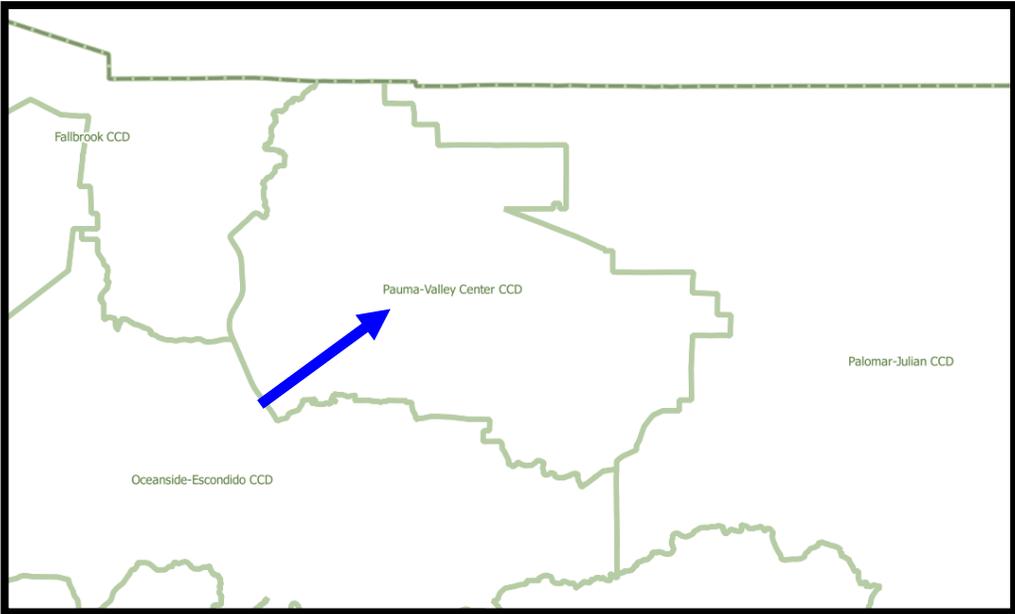
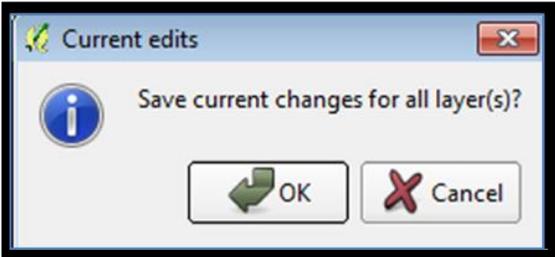
Table 52: Merge CCDs

Step	Action and Result
Step 1	Follow steps from Table 51: Select Census County Division (CCD) to open the project and select Census County Division for editing.

Step	Action and Result
<p>Step 2</p>	<p>Within the Modify Area Feature window, click the Action drop-down menu to select Merge.</p>  <p>Use the Zoom Full button on the Standard toolbar to zoom to the extent of the county and view the existing CCDs. <i>The Map View displays all of the CCDs for the working county.</i></p> <p>Note: Not enabling imagery at this scale allows for better visualization of the CCD names.</p> 

Step	Action and Result
<p>Step 3</p>	<p>Double click to select a CCD from the Info column within the Modify Area Feature window. The Map View zooms to the selected CCD (Pauma Valley) and displays it in light green color with a dark green border.</p> 
<p>Step 4</p>	<p>Click the Select Features by Area or single click button to select the CCD to use to merge with the previously selected CCD. <i>The newly selected CCD (Valley Center) highlights in yellow.</i></p> 
<p>Step 5</p>	<p>Selecting CCDs not contiguous with each other result in geographic errors.</p>  <p>Participants must correct contiguity errors (or provide a justification for keeping the CCD noncontiguous) prior to submission to the Census Bureau. The Modify Area Feature tool does not allow a participant to select CCDs in different counties.</p>

Step	Action and Result
<p>Step 6</p>	<p>With the CCDs selected, click the Merge button to create a new CCD.</p> 
<p>Step 7</p>	<p>The Modify Area Feature window displays. Enter the required data (fields with the red asterisks). GUPS pre-populates the NAME field with the selected CCD name and the LSAD field defaults to the geography selected. The NAME and JSTFY_NAME fields are editable. The participant must update one of those two fields to continue.</p>  <p>When finished, click OK.</p> <p>Note: Participants must to change the name of the CCD to continue or must justify retention of the existing name in the JSTFY_NAME field (e.g., name of one of the merged CCD names is still the most prominent after merging). Otherwise, they receive an error message <i>indicating the name must be unique and the specified name is not unique</i>.</p>

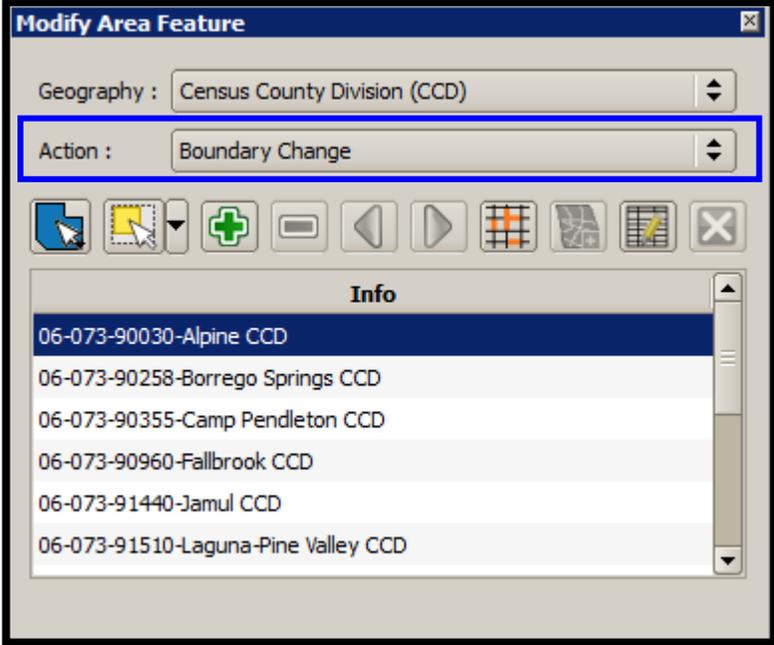
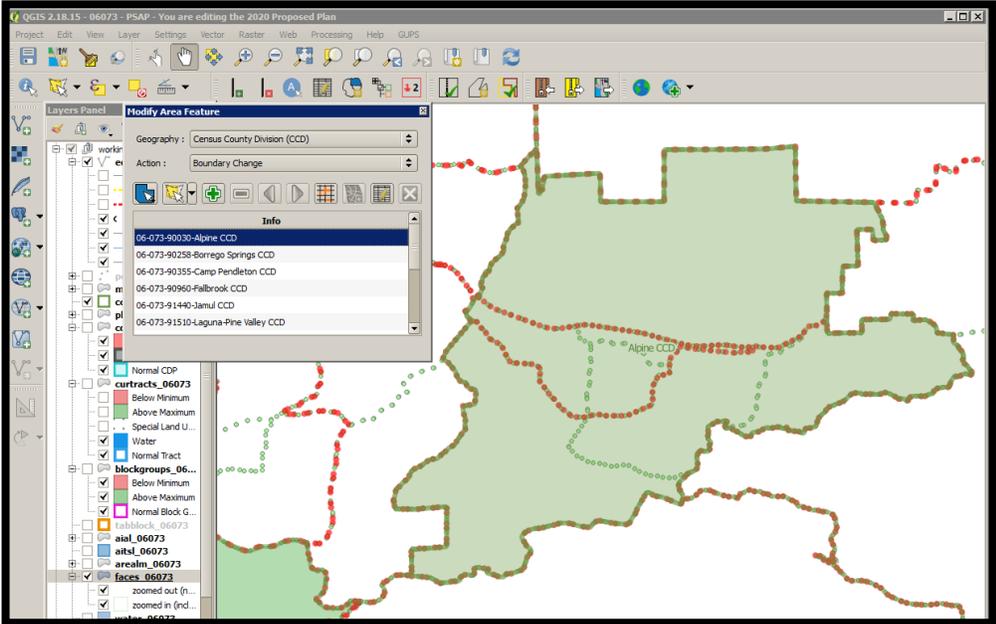
Step	Action and Result
<p>Step 8</p>	<p>Refer to the Map View to verify that the CCD merge completed properly. The Map View shows the two CCDs merged into one CCD and depicts the new name, Pauma Valley Center CCD.</p>  <p>The map displays several CCD boundaries in green. A blue arrow points to the newly merged 'Pauma-Valley Center CCD' area. Other labeled CCDs include 'Fallbrook CCD', 'Palomar-Julian CCD', and 'Oceanside-Escondido CCD'.</p> <p>To reverse the merge, prior to saving use the Undo button. Refer to Table 12 and Table 17 for instructions on the Undo functionality.</p>
<p>Step 9</p>	<p>Click the Save button to save the edits and update the project. The Current edits confirmation dialog box asks to save the changes for all layer(s). For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>The dialog box titled 'Current edits' contains an information icon, the text 'Save current changes for all layer(s)?', and two buttons: 'OK' (with a green arrow icon) and 'Cancel' (with a red X icon).</p> <p>Click OK to save or Cancel to return to the Map View without saving.</p>

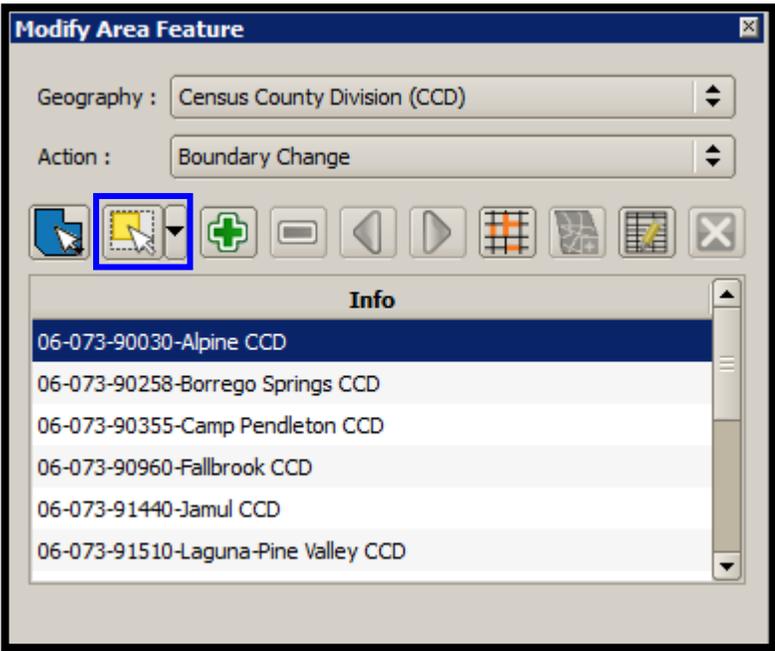
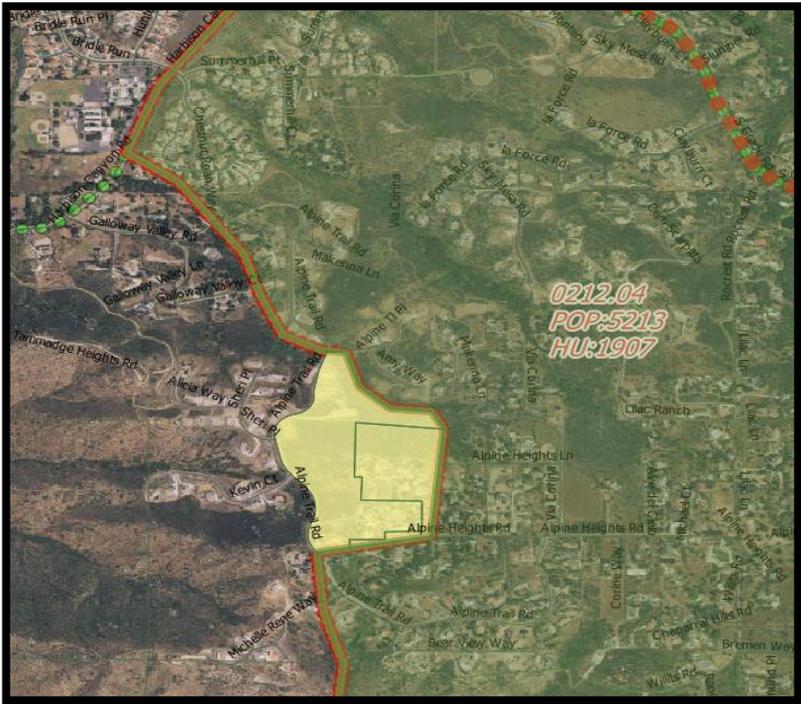
9.6.3 Boundary Change – Add Area (CCD)

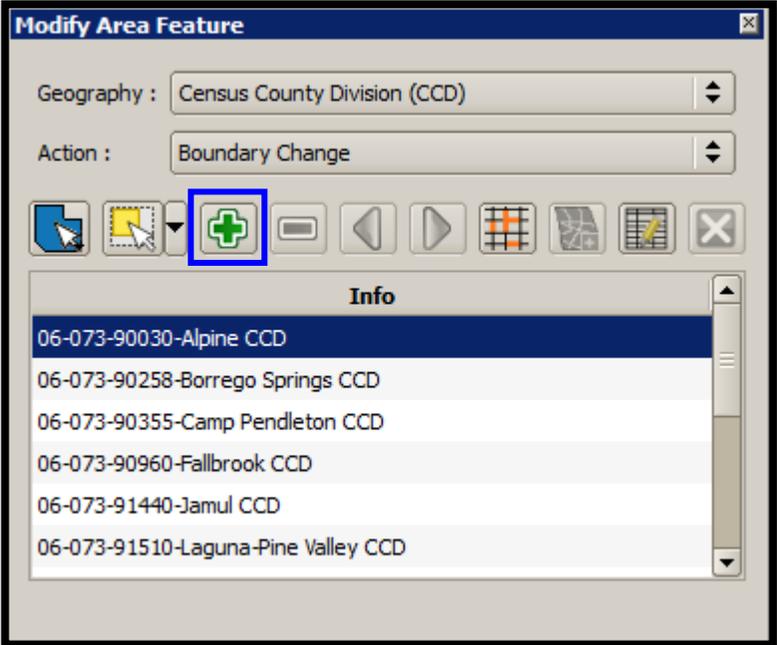
Participants can perform boundary changes to CCDs by adding new area or removing existing area. The **Boundary Change** action uses the faces layer to modify the area of a CCD. [Table 53](#) provides steps for adding area to a CCD through the **Boundary Change** menu.

Table 53: Boundary Change – Add Area (CCD)

Step	Action and Result
<p>Step 1</p>	<p>Follow steps from Table 51: Select Census County Division (CCD) to open the project and select Census County Division for editing.</p>

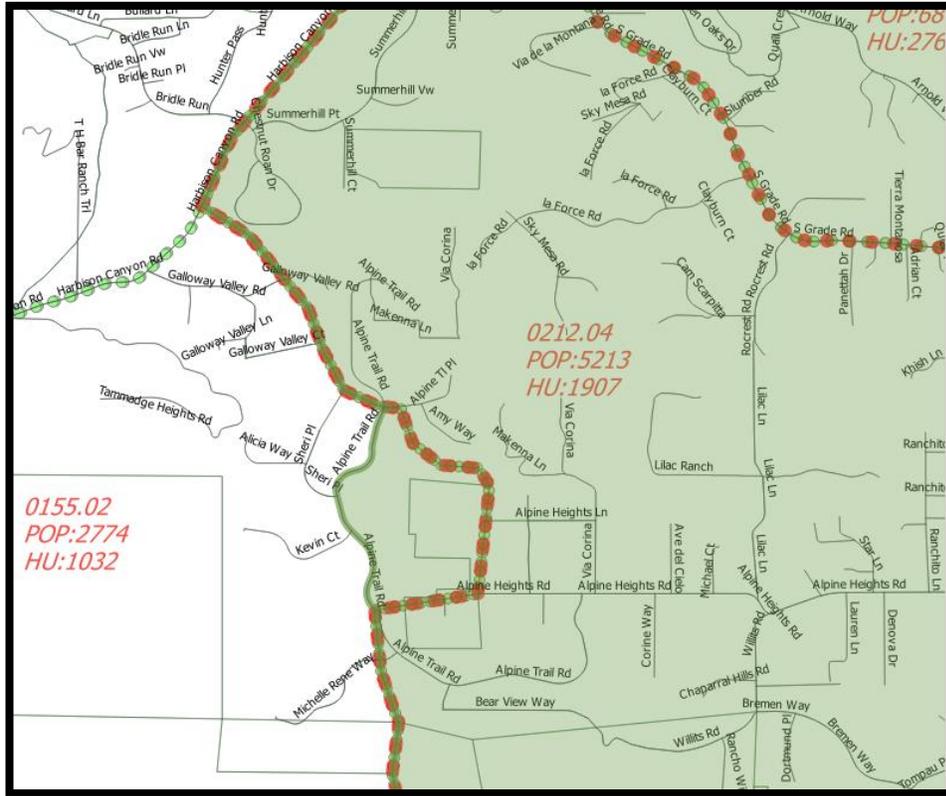
Step	Action and Result
Step 2	<p>Within the Modify Area Feature window, click the Action drop-down menu to select Boundary Change.</p> 
Step 3	<p>Double click to select a CCD from the Info column within the Modify Area Feature window. The Map View zooms to the selected CCD (e.g., Alpine CCD) to review and highlights it using green.</p> 
Step 4	<p>Use the Zoom In button and Add Imagery button to help with accuracy of selected area(s) to add.</p>

Step	Action and Result
<p>Step 5</p>	<p>Click the Select Features By Area or single click button to select the faces to add to the CCD. Participants can choose any of the four choices beneath the Select Features button to accomplish the modification to the CCD.</p>  <p>The selected faces highlight in yellow. This image depicts zoomed view with imagery enabled.</p> 
	<p>Participants are unable to select faces within the CCD selected in Step 3, the targeted CCD. Selecting noncontiguous faces results in geographic errors that participants must correct prior to submitting to the Census Bureau. The GUPS software prevents adding faces from different counties.</p>

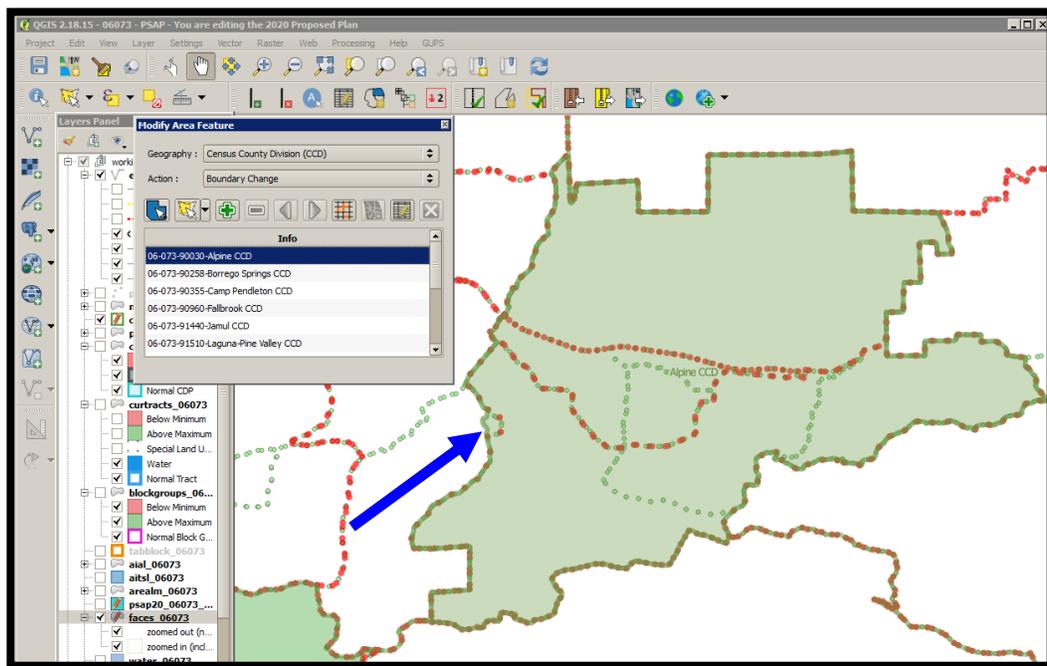
Step	Action and Result
Step 6	<p>Click the Add Area button to apply boundary change (addition of faces/areas) to the selected CCD.</p> 

Step 7

Refer to the **Map View** to verify that the CCD boundary change completed properly.



The newly added area appears in the same fill color as the selected CCD and the external boundary bumps out to the edge of the added area.



The full image includes blue arrow denoting the newly added area. To reverse the boundary change, simply add the area back to the original CCD or perform the **Undo** action prior to saving. Refer to [Table 12](#) and [Table 17](#) for instructions on the **Undo** functionality.

Step	Action and Result
Step 8	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the changes for all layer(s).</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p> <div> </div> <p>Click OK to save or Cancel to return to the Map View without saving.</p>

9.6.4 New District – Add Entity (Add a New CCD)

As with CDPs, participants can add new CCDs as part of their PSAP work. As with adding area or removing area from an existing CCD, the **New District** action uses the faces layer to modify CCDs. [Table 54](#) describes the steps for adding a new CCD.

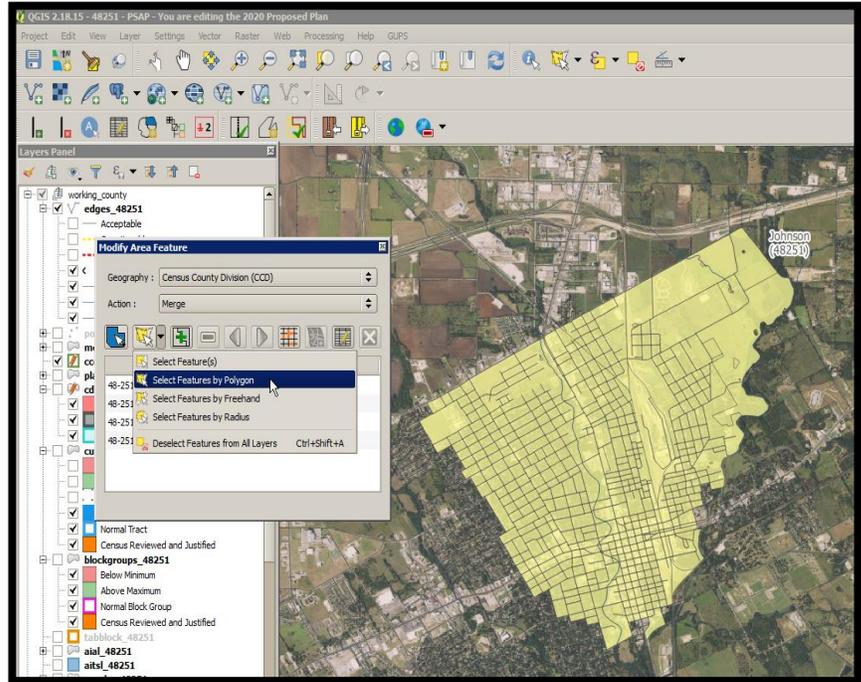
Table 54: New District - Add Entity (Add a New CCD)

Step	Action and Result
Step 1	<p>Follow steps from Table 51: Select Census County Division (CCD) to open the project and select Census County Division for editing.</p>
Step 2	<p>Within the Modify Area Feature window, click the Action drop-down menu to select New District.</p> <div> </div>

Step	Action and Result
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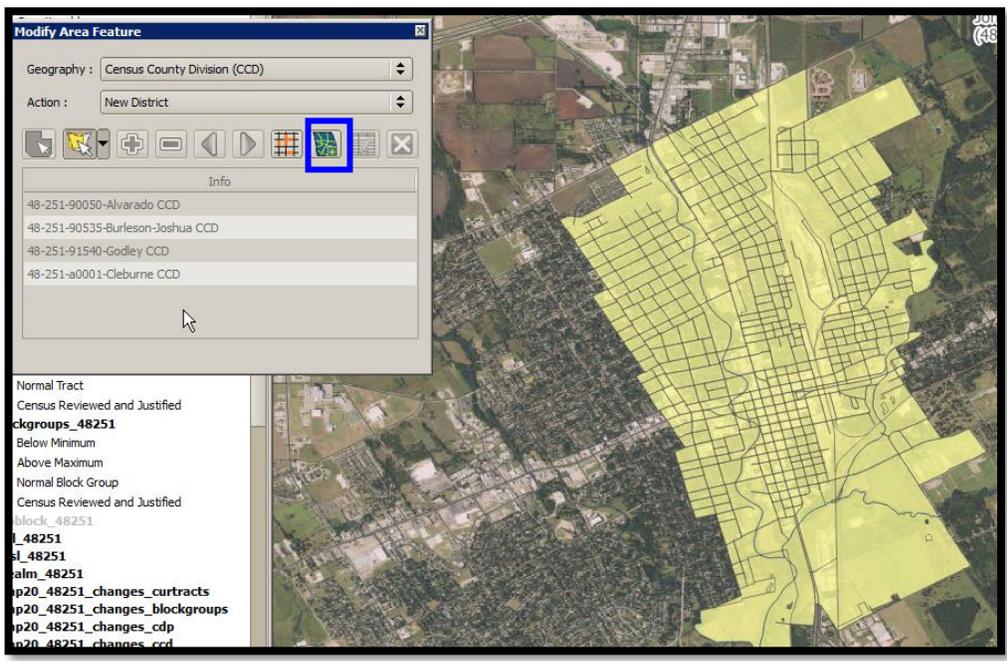
Step 3

Use **Zoom In** button to zoom into an appropriate scale for selecting areas to add to a new CCD and the **Add Imagery** button to help with accuracy of selected area(s) to add. Click the **Select Features By Area or single click** button to select the faces to add to the CCD. Participants can choose any of the four choices beneath the **Select Features** button to accomplish the modification to the CCD. *This example uses **Select Features by Polygon**. The selected faces highlight in yellow.*



Step 4

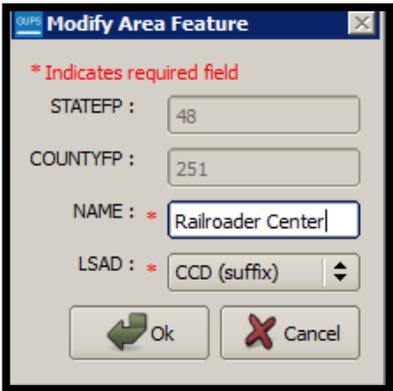
Click the **Add Entity** button to add the selected faces to create a new CCD.



Step	Action and Result
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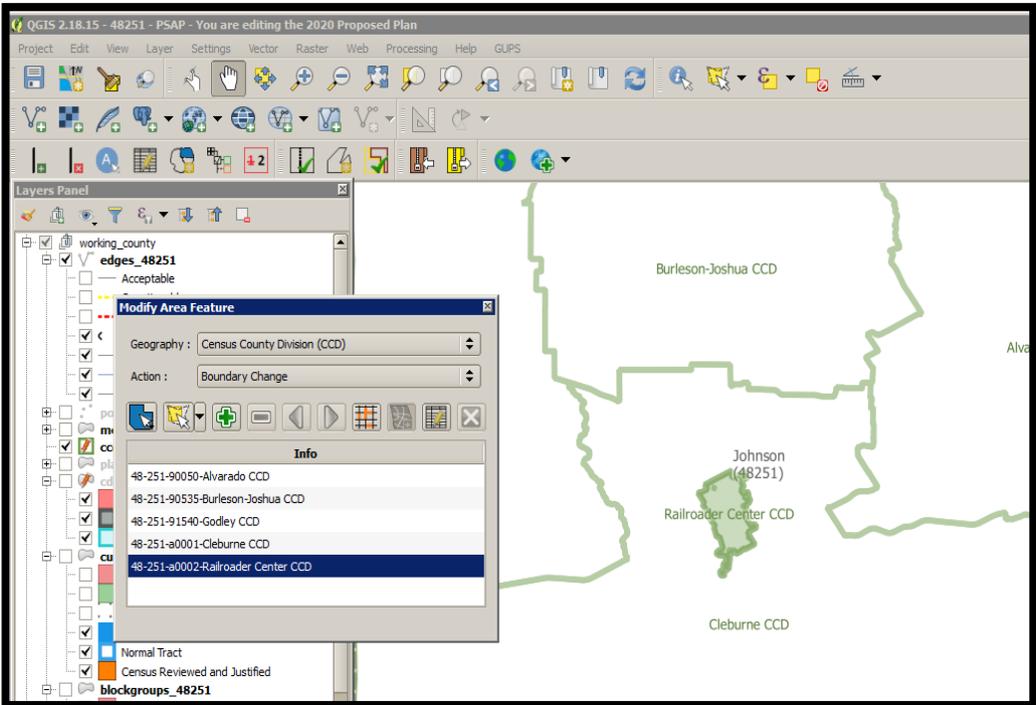
Step 5

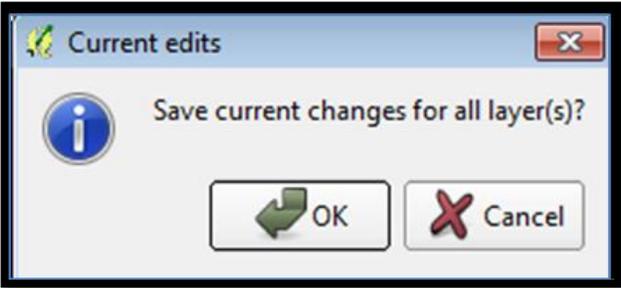
The **Modify Area Feature** window opens. Enter the **NAME** of the newly created CCD and then click the **OK** button.



Step 6

Refer to the **Map View** to verify that GUPS captured the new CCD properly. Zoom to the proper scale to confirm the boundaries and area of the CCD. To reverse the creation of the CCD, prior to saving, use the **Undo** button. If CCD is incorrect, participants can cancel the creation and begin again or they can accept the almost correct CCD and perform a **Boundary Change** action with the adjacent CCD. The **Boundary Change** window is activated in the screenshot below.

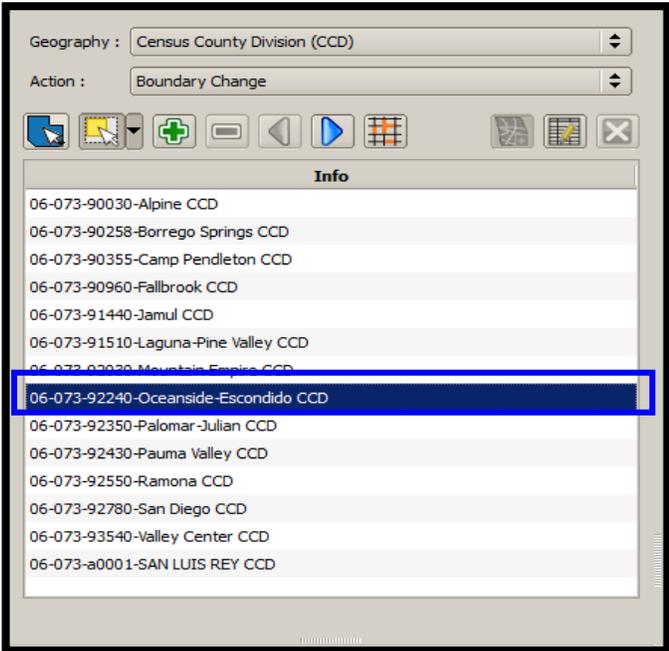


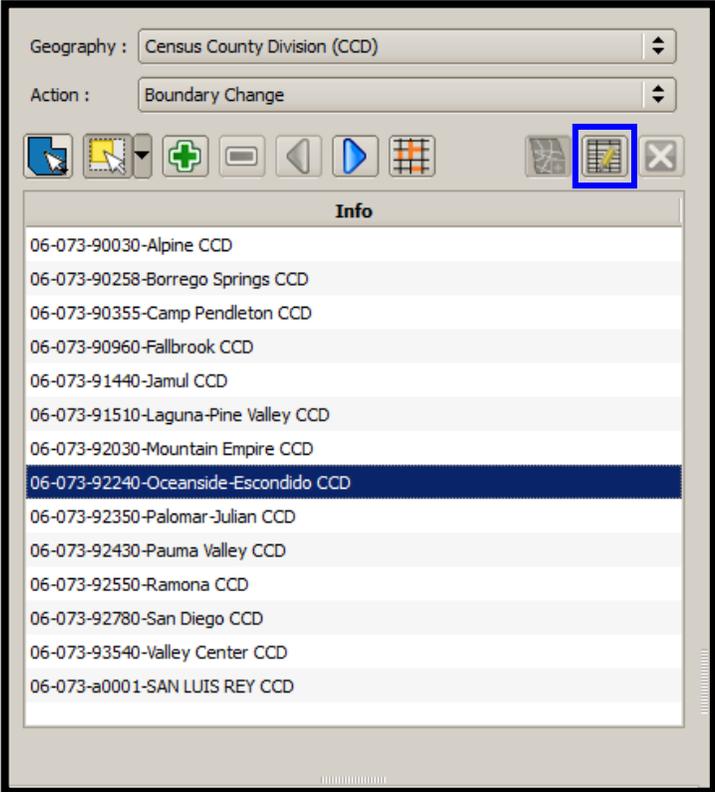
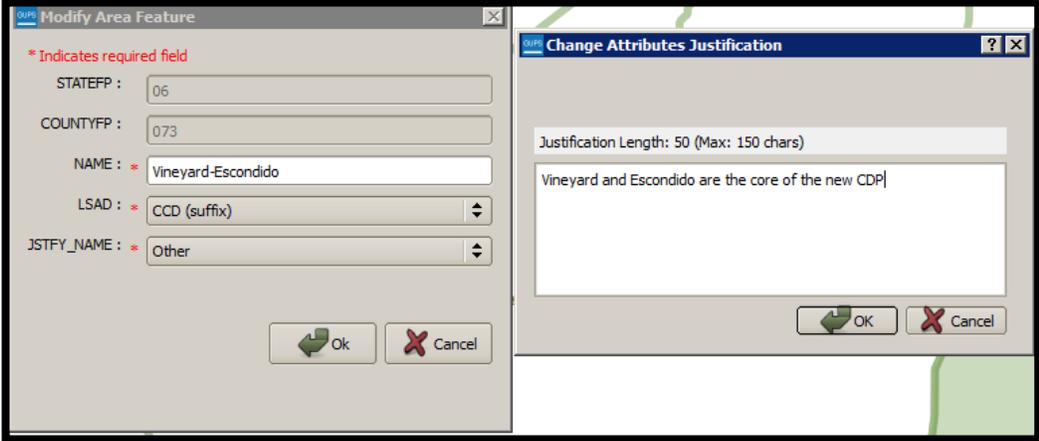
Step	Action and Result
Step 7	<p>Click the Save button to save the edits and update the project. The Current edits confirmation dialog box asks to save the changes for all layer(s). For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>

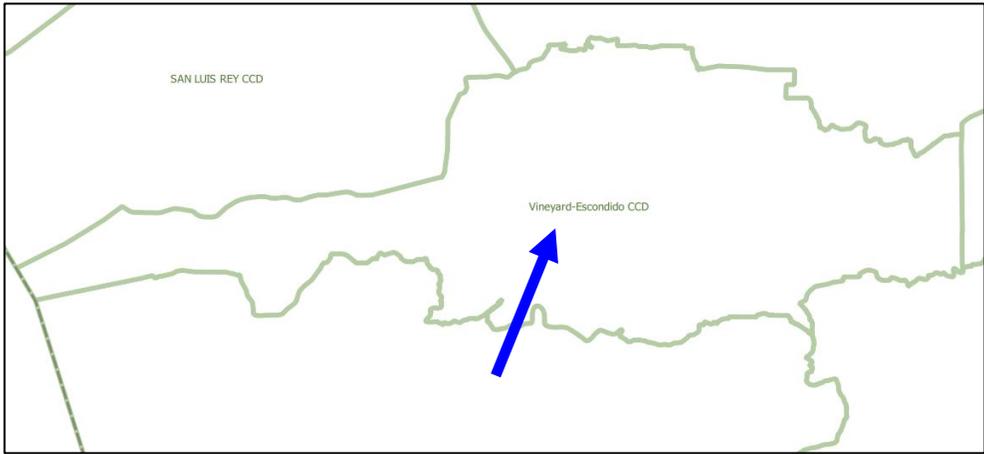
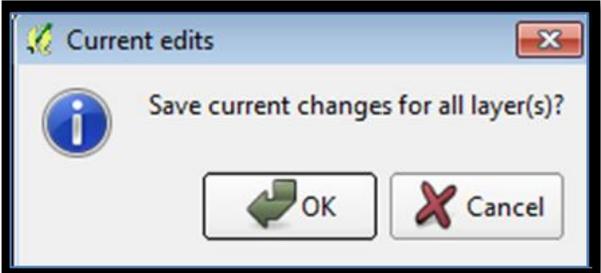
9.6.5 Boundary Change – Change Attributes (CCD)

Using the **Boundary Change** action, participants can perform attribute updates for existing CCDs. Attributes that can be modified include the **NAME** and **JSTFY_NAME** fields. When a participant changes an existing CCD name or creates a new CCD, then the **JSTFY_NAME** field becomes required. The participant uses the field to provide reasoning for the chosen name. [Table 55](#) describes steps necessary to change the attributes of an existing CCD.

Table 55: Boundary Change – Change Attributes (CCD)

Step	Action and Result
Step 1	Follow steps from Table 51: Select Census County Division (CCD) to open the project and select Census County Division for editing.
Step 2	<p>Double click the CCD to update from the Info list. The Map View zooms to the selected CCD.</p> 

Step	Action and Result
<p>Step 3</p>	<p>Click the Change Attributes button.</p> 
<p>Step 4</p>	<p>The Modify Area Feature window opens to allow participants to change the attribution of the selected CCD. In this example, the Oceanside-Escondido CCD name changed to Vineyard-Escondido CCD.</p>  <p>Click the OK to continue and process the change.</p>

Step	Action and Result
<p>Step 5</p>	<p>GUPS updates the Map View with the new CCD name. Imagery disabled to make viewing the CCD names easier.</p> 
<p>Step 6</p>	<p>Click the Save button to save the edits and update the project. The Current edits confirmation dialog box asks to save the changes for all layer(s). For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to not and return to the Map View.</p>

CHAPTER 10. VALIDATE DATA AND PREPARE FILES FOR SUBMISSION

As introduced in [Part 2](#), GUPS provides validation tools to help review and validate the updates made to statistical geographies by participants (regardless whether updates made to the 2020 proposed plan or to the 2010 geographies). The next three sections describe the three tools necessary to validate the PSAP data prior to submission to the Census Bureau: [PSAP Criteria Review Tool](#), the [Review Change Polygons Tool](#), and the [Geography Review Tool](#). Each of the three tools function differently to give participants the opportunity to verify, fix, justify, and assure the quality of the final exported project. GUPS also provides the [Export to Zip Button](#), to prepare data for sharing with other reviewers and/or submitting to the Census Bureau.

The Census Bureau recommends executing these tools in the order presented for the next three sections. Run the PSAP Criteria Review Tool first, then the Review Change Polygons Tool, and finish with the Geography Review Tool.

10.1 PSAP Criteria Review Tool

Participants use the PSAP Criteria Review tool to generate a list of threshold failures and correct (labeled as “fix” in the tool) the failures or provide a justification for the failure. GUPS color-codes the list of failures: Participants must correct red errors. They must correct orange errors or justify them to remain as such. Participants can correct the issues or provide a justification of their own to retain the geography based on local knowledge. Run this required check before creating a data output file for submission to the Census Bureau. [Section 8.4.2.4](#) introduced this tool.

Table 56: PSAP Criteria Review Button

Step	Action and Result
Step 1	Download and Review the data as described in Section 7.2, Open GUPS and Start a New Project .

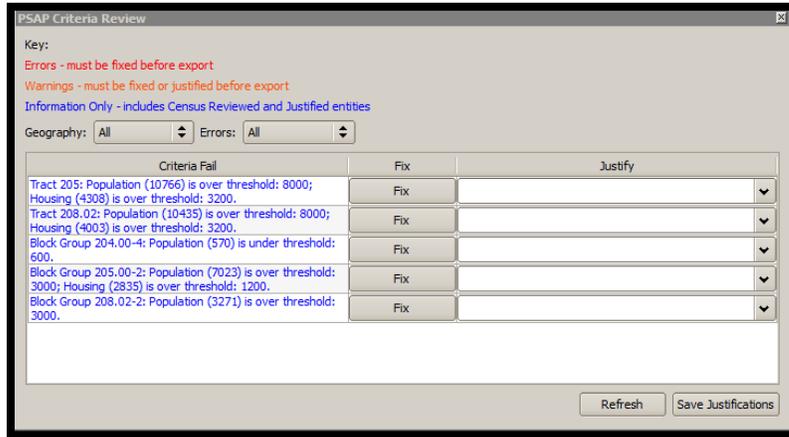
Step	Action and Result
------	-------------------

Step 2

Click the **PSAP Criteria Review** button.

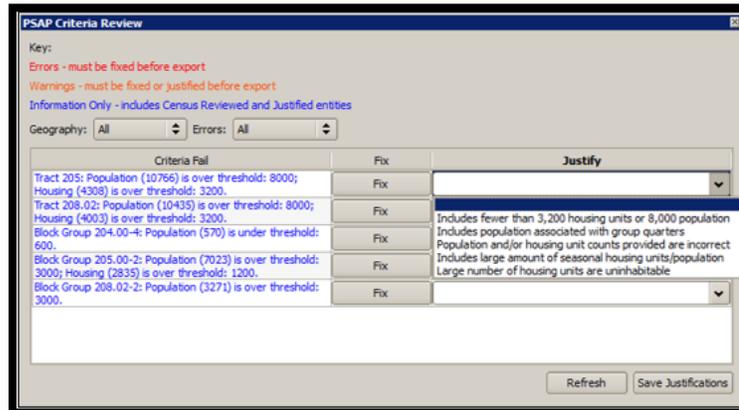


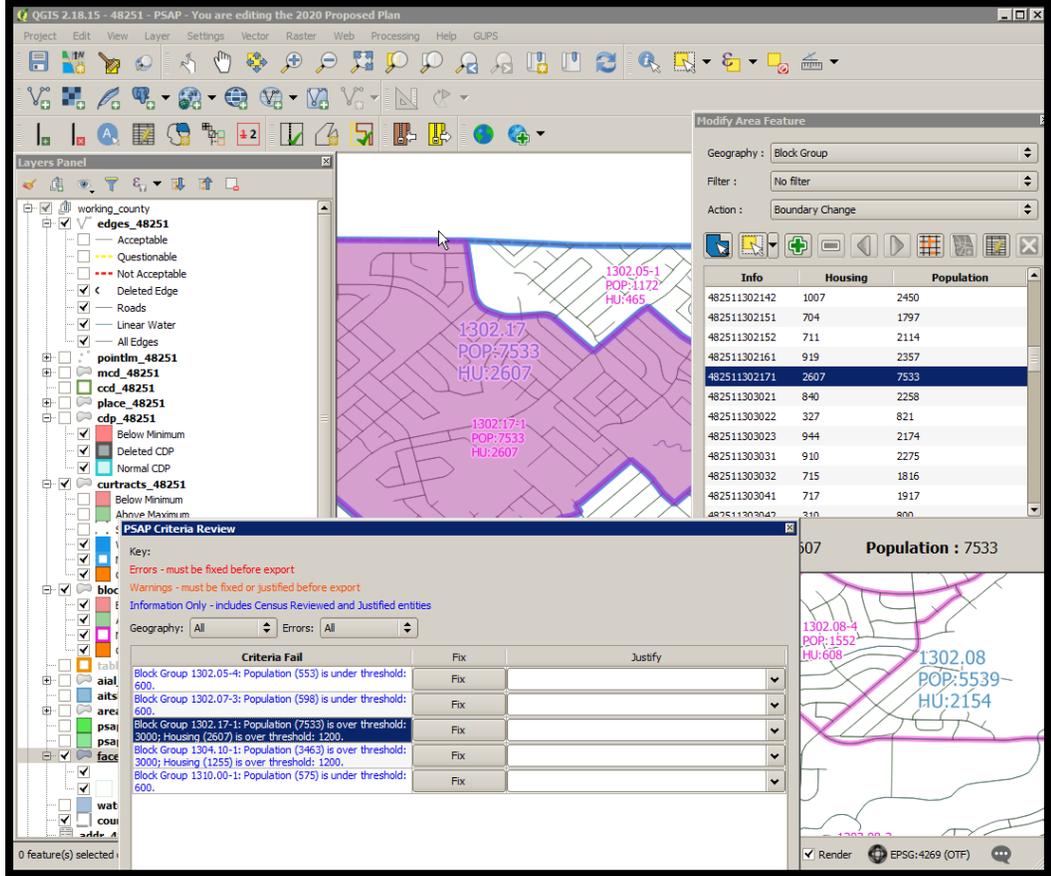
A **PSAP Criteria Review** dialog box opens to inform participants that it is actively reviewing the population and housing unit criteria for all the Geographic entities in the working county. Once the tool has run, the **PSAP Criteria Review** window displays the remaining issues. Participants can choose to display the list by Geography type, error type, or display all the geographies. The list contains the geographic entities that do not meet thresholds or missing other requirements such as noncontiguous entities.



Step 3

If the exceedance of the threshold as displayed in the **Criteria Fail** is justified, select the justification using the drop-down button in the **Justify** attribute field. Choose one of the pre-determined justifications or enter something unique. There is a 150-character limit to this field. Be sure to save frequently by clicking the **Save Justifications** button at the bottom of the window.



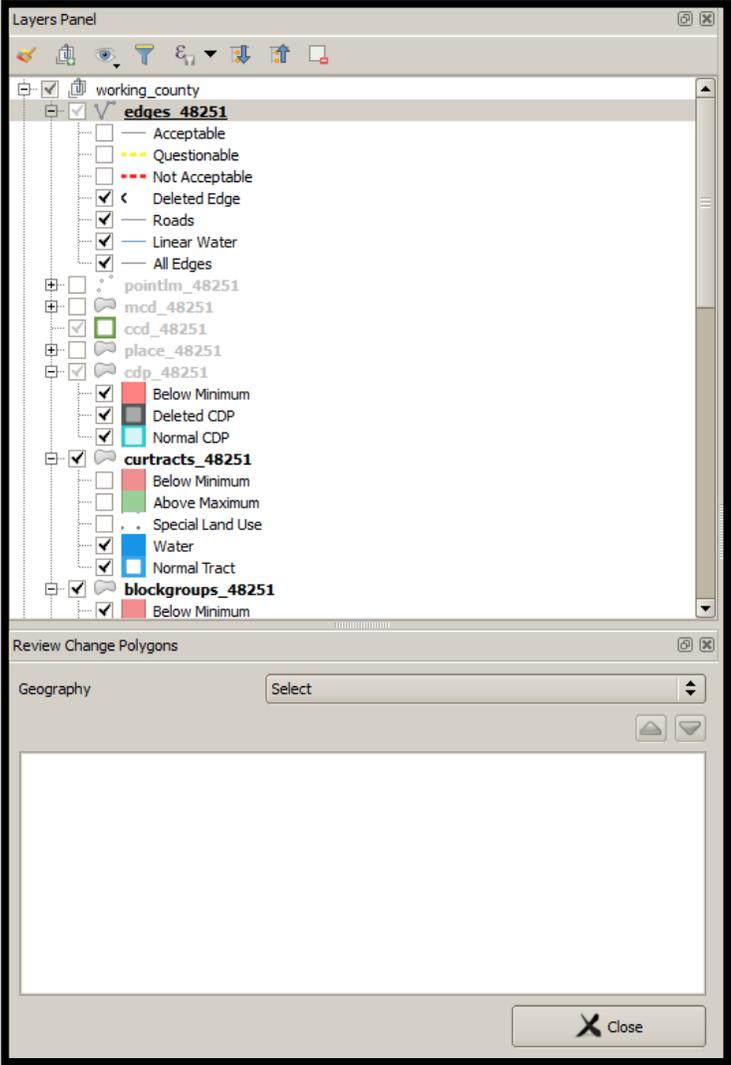
Step	Action and Result
Step 4	<p>If the failure needs correction, click the Fix button for any of the geographic entities within the PSAP Criteria Review window list, <i>GUPS</i> zooms to the Map View of the selected geographic entity, opens the Modify Area Feature tool, and then selects the entity within the Modify Area Feature window. From here, choose an Action within the Modify Area Feature tool and perform the edits necessary to meet the requirements and resolve the failure. Refer to Section 8.4.2.1, the Modify Area Feature tool section, for detail on its functionality.</p> 
Step 5	<p>Once participants correct or justify all failures, participants can close the tool by clicking the “x” in the top right hand corner of the window. Refreshing the window is beneficial as work is underway. Click the Refresh button at the bottom of the window next to the Save Justifications button to refresh the results of executing the tool</p>

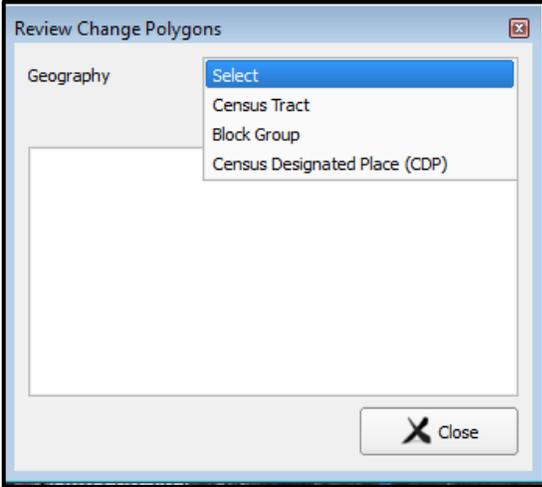
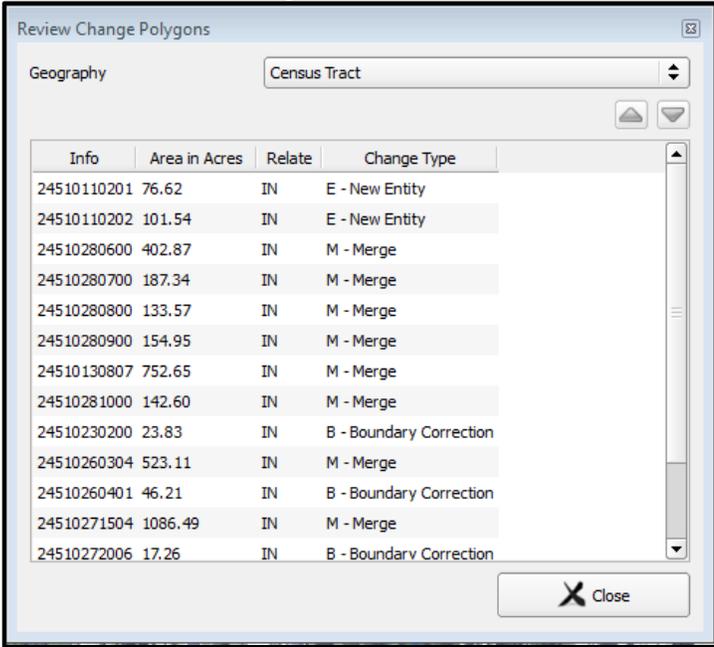
10.2 Review Change Polygons Tool

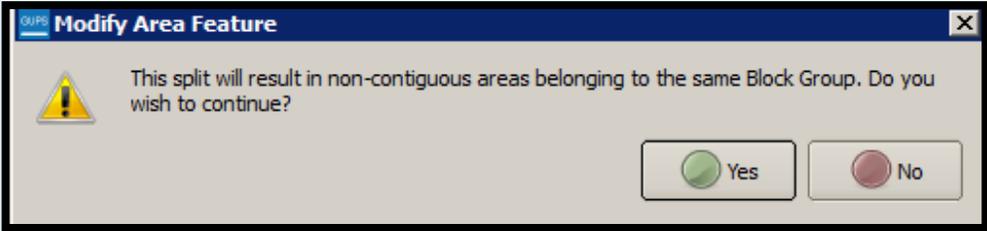
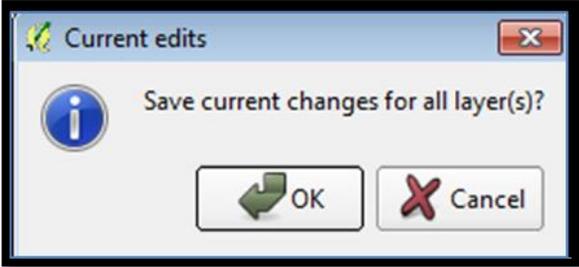
The **Review Change Polygons** tool reviews transaction polygons for tracts, block groups, CDPs, and CCDs. It provides a list of their applied changes (boundary changes, splits, merges). Participants use this tool to check the general accuracy of the change polygons in the **Map View** by clicking each change within the list. [Section 8.4.2.3](#) introduced this tool.

Table 57: Review Change Polygon Button

Step	Action and Result
Step 1	Download and review the data as described in Section 7.2, Open GUPS and Start a New Project .

Step	Action and Result
Step 2	<p>Click the Review Change Polygons button.</p>  <p><i>The Review Change Polygons dialog box opens just beneath the Table of Contents. The dialog box can be moved anywhere, even out of the GUPS window onto a dual monitor. It does not have to remain beneath the Table of Contents.</i></p> 

Step	Action and Result																																																								
Step 3	<p>Select the statistical geography to review from the Geography drop-down menu.</p> 																																																								
Step 4	<p>The full list of geographies with modifications appear after selecting the geography to review. For this example, Census Tract is the selected geography and the list includes numerous changes (e.g., New Entity, Merge, and Boundary Correction). The type of changes varies based on the geography selected. See Table 31 for information on change types. The Change Type field shown below depicts a single letter, where “E” denotes a split, “M” denotes a merge, “B” denotes a boundary change, and “G” denotes an attribute change.</p>  <table border="1"> <thead> <tr> <th>Info</th> <th>Area in Acres</th> <th>Relate</th> <th>Change Type</th> </tr> </thead> <tbody> <tr><td>24510110201</td><td>76.62</td><td>IN</td><td>E - New Entity</td></tr> <tr><td>24510110202</td><td>101.54</td><td>IN</td><td>E - New Entity</td></tr> <tr><td>24510280600</td><td>402.87</td><td>IN</td><td>M - Merge</td></tr> <tr><td>24510280700</td><td>187.34</td><td>IN</td><td>M - Merge</td></tr> <tr><td>24510280800</td><td>133.57</td><td>IN</td><td>M - Merge</td></tr> <tr><td>24510280900</td><td>154.95</td><td>IN</td><td>M - Merge</td></tr> <tr><td>24510130807</td><td>752.65</td><td>IN</td><td>M - Merge</td></tr> <tr><td>24510281000</td><td>142.60</td><td>IN</td><td>M - Merge</td></tr> <tr><td>24510230200</td><td>23.83</td><td>IN</td><td>B - Boundary Correction</td></tr> <tr><td>24510260304</td><td>523.11</td><td>IN</td><td>M - Merge</td></tr> <tr><td>24510260401</td><td>46.21</td><td>IN</td><td>B - Boundary Correction</td></tr> <tr><td>24510271504</td><td>1086.49</td><td>IN</td><td>M - Merge</td></tr> <tr><td>24510272006</td><td>17.26</td><td>IN</td><td>B - Boundary Correction</td></tr> </tbody> </table>	Info	Area in Acres	Relate	Change Type	24510110201	76.62	IN	E - New Entity	24510110202	101.54	IN	E - New Entity	24510280600	402.87	IN	M - Merge	24510280700	187.34	IN	M - Merge	24510280800	133.57	IN	M - Merge	24510280900	154.95	IN	M - Merge	24510130807	752.65	IN	M - Merge	24510281000	142.60	IN	M - Merge	24510230200	23.83	IN	B - Boundary Correction	24510260304	523.11	IN	M - Merge	24510260401	46.21	IN	B - Boundary Correction	24510271504	1086.49	IN	M - Merge	24510272006	17.26	IN	B - Boundary Correction
Info	Area in Acres	Relate	Change Type																																																						
24510110201	76.62	IN	E - New Entity																																																						
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24510130807	752.65	IN	M - Merge																																																						
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24510260304	523.11	IN	M - Merge																																																						
24510260401	46.21	IN	B - Boundary Correction																																																						
24510271504	1086.49	IN	M - Merge																																																						
24510272006	17.26	IN	B - Boundary Correction																																																						
	<p>Refresh the change polygon list by switching geography types. Doing so repopulates the list with the current list of polygon changes.</p>																																																								
Step 5	<p>To view a change polygon on the map, click the row for the polygon in the Info list. <i>The polygon highlights and the map zooms to the location.</i></p>																																																								
Step 6	<p>To correct a mistake (e.g., correct a noncontiguous polygon or sliver missed during the splitting/merging of a geography), or review changes made during the participant’s review (e.g., creation of a new CDP), click on the Modify Area Feature button on the PSAP toolbar and make the correction. Refer to Section 9.2.1, Modify Area Feature Tool, for the instructions on using this tool.</p>																																																								

Step	Action and Result
	<p>The software contains built-in tools to check for contiguity of the statistical geographies. A confirmation dialog box, similar to the one shown below, appears if the participant introduces a contiguity issue during their work.</p> 
Step 7	<p>Click the Save button to save the edits and update the project. <i>The Current edits confirmation dialog box asks to save the current changes for all layers.</i> For more information on saving, please refer to Section 7.3, Save a Project in GUPS.</p>  <p>Click OK to save or Cancel to return to the Map View without saving.</p>
Step 8	<p>Upon completion of the review and updates, click the Close button in the Review Change Polygons window to close the tool.</p>

10.3 Geography Review Tool

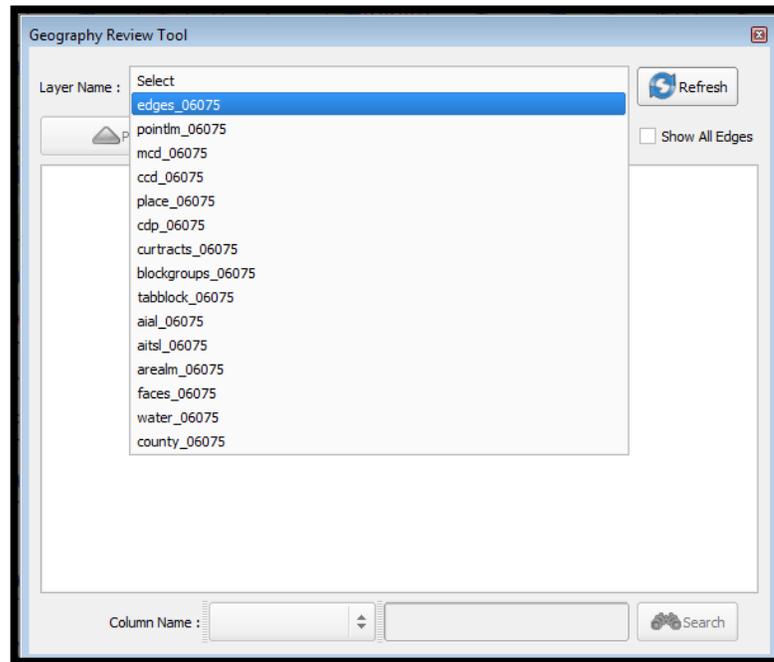
The **Geography Review Tool** provides access to the attribute tables of some of the layers displayed in the **Table of Contents**. It filters the map layers based on field values in the attribute table. This tool provides an overall review of the new or deleted entities, or the entities with boundary changes. The Census Bureau recommends the use of this tool, rather than directly editing the various statistical geographies attribute tables. [Section 8.4.2.2](#) introduced this tool.

Table 58: Geography Review Tool Button

Step	Action and Result
Step 1	<p>Download and review the data as described in Section 7.2, Open GUPS and Start a New Project.</p>
Step 2	<p>Click the Geography Review Tool button on the PSAP toolbar.</p>  <p><i>The Geography Review Tool dialog box opens.</i></p>

Step**Action and Result****Step 3**

In the **Layer Name:** field drop-down menu, select the data layer to view.



The geography (e.g., layers) modified during PSAP that need to be reviewed are as follows (listed in alpha order, not priority order):

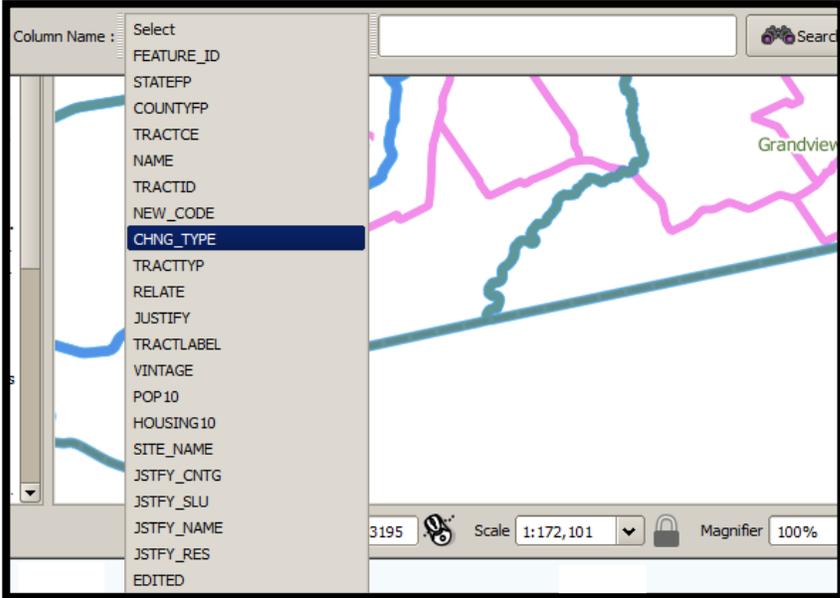
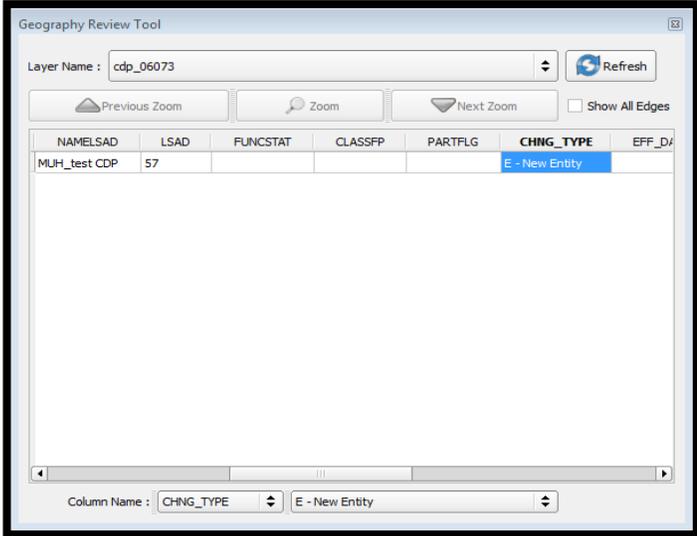
- Block groups (blockgroups_<STCOU>).
- Census county divisions (ccd_<STCOU>), if one of the 21 states with CCD geography.
- Census designated places (cdp_<STCOU>), if they exist in the working county.
- Census tracts (curtracts_<STCOU>).

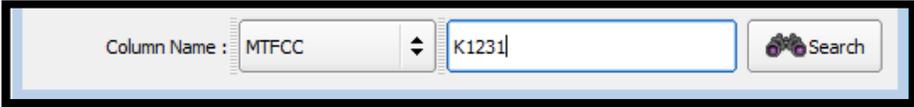
Once selected, the attribute table for the layer opens, with the individual geographies (each census tract for this example) in separate rows and specific attributes displayed in separate columns. The image below shows the attributes for curtracts.

FEATURE_ID	STATEFP	COUNTYFP	TRACTCE	NAME	TRACTID	NEW_CODE	CHNG_TYPE	EFF_DATE	TRACTYTP
0	48	251	130100	1301	48251130100				
1	48	251	130204	1302.04	48251130204				
2	48	251	130205	1302.05	48251130205				
3	48	251	130207	1302.07	48251130207				
4	48	251	130208	1302.08	48251130208				
5	48	251	130210	1302.10	48251130210				
6	48	251	130211	1302.11	48251130211				
7	48	251	130212	1302.12	48251130212				
8	48	251	130213	1302.13	48251130213				
9	48	251	130214	1302.14	48251130214				
10	48	251	130215	1302.15	48251130215				
11	48	251	130302	1303.02	48251130302				
12	48	251	130303	1303.03	48251130303				
13	48	251	130304	1303.04	48251130304				



If columns are not visible in the attribute data table, drag the edge of the dialog box outward to widen the view, or move the dialog box to another location by clicking inside the box and dragging it.

Step	Action and Result
<p>Step 4</p>	<p>Use the Search feature <u>at the bottom of the dialog box</u> to filter the table layers by specific attributes (e.g., full name, MTFCC, change type, etc.). This example uses CHNG_TYPE.</p>  <p>Participants can run this tool with this specific column name selected to identify the changes made during their review.</p>
<p>Step 5</p>	<p>In the drop-down menu next to the Column Name, select the attribute value by which to filter and click the Search button. This example uses E – New Entity / New District as the attribute value. <i>Based on the column name choice and attribute value chosen, the search filters the attribute table to show the rows for the new CDPs in this working county. Leaving the attribute value blank would return all records with a value in the CHNG_TYPE field.</i></p> 
<p>Step 6</p>	<p>Selecting the record from the attribute table activates the Zoom menu and quickly zooms the map view to the selection.</p>
<p>Step 7</p>	<p>To return to the attribute table to see the full (<i>un-filtered</i>) layer, click the Refresh button in the upper right-hand corner of the dialog box.</p>

Step	Action and Result
Step 8	<p>Note: When filtering the table by some attributes (e.g., state and county FIPS code or MTFCC), no drop-down menu appears from which to select.</p> <p>Some attribute codes are too numerous to make scrolling through a list practical. Instead participants receive a blank box in which they may type the search value. For example, if filtering the area landmarks layer by MTFCC and want to see hospitals in the layer, type in the MTFCC for hospitals (K1231), and then click Search.</p> 

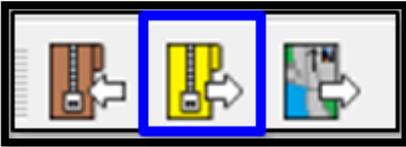
10.4 Export to Zip Button

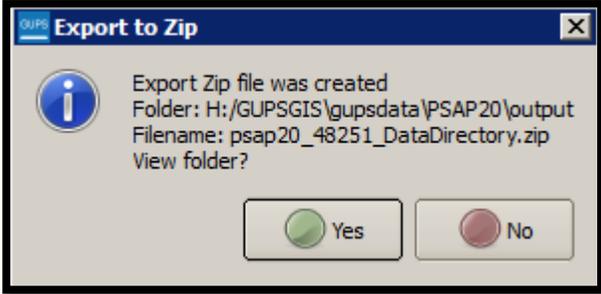
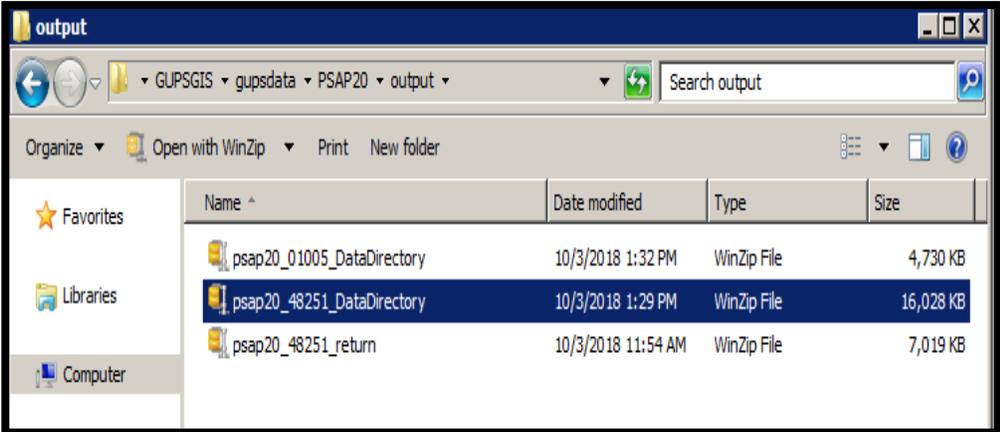
When creating export .zip files, participants have two options. They may export the file to share with another reviewer or they may export the file for submission to the Census Bureau. In either case, GUPS automatically names the output .zip file, packages all the files required by the Census Bureau (including any documentation uploaded into GUPS) into the .zip file, and saves it in a preset location created on the computer during the installation process. [Section 8.4.2.6](#) introduced this tool. This section repeats much of the information presented earlier, but serves as a closure to Chapter 9.

10.4.1 Export to Zip – Share with Another Participant

To export a file to share with another participant, follow the steps in [Table 59](#). A participant might find this functionality useful if they need to show their supervisor their work or if they split the review work of geographies among staff; i.e., someone reviews the census tracts and block groups, while someone else reviews the CDPs.

Table 59: Export a File to Share with Another Participant

Step	Action and Result
Step 1	Download and review the data as described in Section 7.2, Open GUPS and Start a New Project .
Step 2	<p>Click the Export to Zip button.</p>  <p>The Select Output Type dialog box opens.</p>  <p>Click the Share with Another Participant radio button. Then click OK.</p>

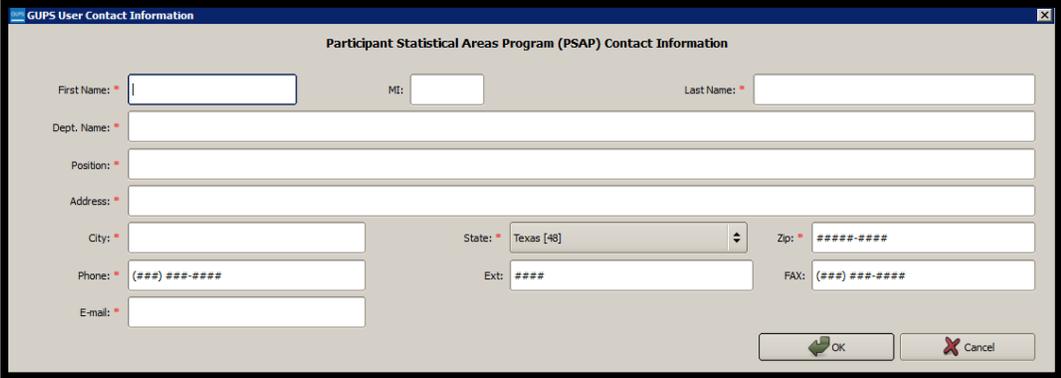
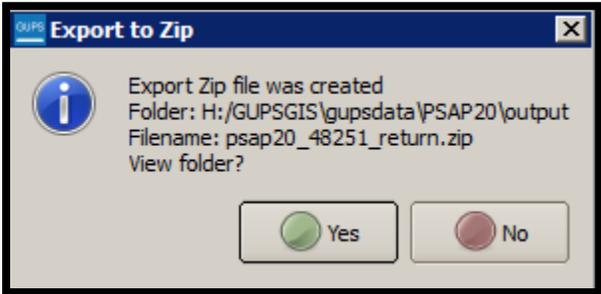
Step	Action and Result
Step 3	<p>The Export to Zip dialog box opens. GUPS generates a .zip file, stores it in the output directory that the GUPS installer placed on the computer during the installation process, and gives it a name that includes “DataDirectory.”</p> 
Step 4	<p>If participants click Yes, as shown in this example, GUPS automatically opens a windows explorer to the output folder location on the computer. If they click No, the Export to Zip dialog box closes.</p> 
Step 5	<p>Participants may now share the file with others who would then use the Import Project ZIP file button in the Map Management window or the Import County Zip button on the PSAP toolbar to open the shared .zip file as described in Section 8.4.2.5 .</p>

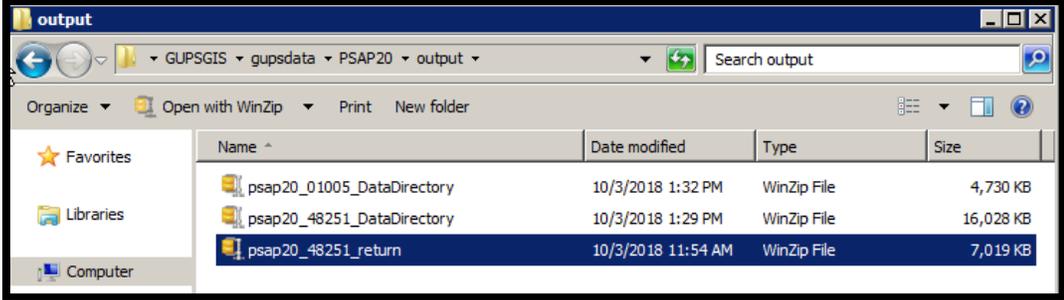
10.4.2 Export to Zip – Export for Census

To export a file to submit to the Census Bureau as the final submission for any working county, follow the steps in [Table 60](#).

IMPORTANT: The Census Bureau accepts complete submissions for each working county and will not accept partial submissions. This means a participant cannot submit a .zip file when they complete their review and update of census tracts, then submit another .zip file to include their review and update of the block groups. A county must be totally complete in order to be submitted for processing to the Census Bureau. If a participant splits work among reviewers, ensure all the work is complete prior to executing this button and submission of the .zip file to the Census Bureau.

Table 60: Export a File for Submission to the Census Bureau

Step	Action and Result
<p>Step 1</p>	<p>Click the Export to Zip button.</p>  <p>The Select Output Type dialog box opens.</p>
<p>Step 2</p>	<p>Select the Export for Census radio button. Click OK.</p>
<p>Step 3</p>	<p>A GUPS User Contact Information window opens with the Export for Census option. It requests contact information from the participant. All fields denoted with a red star are required for submission. Completion of this information helps the Census Bureau communicate with the participant should any questions or issues arise.</p> 
<p>Step 4</p>	<p>Following the completion of the GUPS User Contact Information, the Export to Zip dialog box opens. GUPS generates a .zip file, stores it in the output directory that the GUPS installer placed on the computer during the installation process, and gives it a name that includes “return.”</p>  <p>IMPORTANT: Make note of the location of the file listed in this dialog box because participants must navigate to the directory to submit this file using SWIM.</p>

Step	Action and Result
<p>Step 5</p>	<p>As with the Share with Another Participant example, if participants click Yes, <i>GUPS automatically opens a windows explorer to the output folder location on the computer.</i> This feature is useful for participants ready to use SWIM to submit their file. If they click No, the Export to Zip dialog box closes.</p> 
<p>Step 6</p>	<p>With the completion of this step, participants can proceed with uploading the file to the Census Bureau. Refer to Chapter 11 for details on using SWIM.</p>

CHAPTER 11. SECURE WEB INCOMING MODULE (SWIM)

If PSAP participants perform updates, using either the 2020 proposed plan or the 2010 geographies, they must utilize the Census Bureau’s Secure Web Incoming Module, or SWIM, to submit their updated working county .zip file for processing. Use the steps outlined in this chapter to learn how to use SWIM to make a submission.

11.1 SWIM Background and Requirements

The Census Bureau provided one SWIM registration token per PSAP participant with their delineation materials cover letter. We recommend either the official liaison or the technical contact utilize the token to create an account once they determine updates are necessary.

Some PSAP participants may have established a SWIM account for other Census geography programs. If so, there is no need to establish a new account just for PSAP. Participants without a SWIM account need to utilize the 12-digit registration token to establish an account. To determine whether an account exists, click “[Forgot your password?](#)” on the main SWIM page and enter the email address to check for account existence. If SWIM does not locate an account associated with the email address, it returns the following message, “*No account registered for this email. Go to Account Registration.*” Choosing the Account Registration link opens a window to establish a SWIM account.

Note: The components of the email and password of SWIM system accounts are case-sensitive. Make note of the case-sensitive format used when establishing the SWIM account (e.g., [jane@anytown.org](#) or [Jane@anytown.org](#) or [JANE@ANYTOWN.ORG](#)). The Census Bureau recommends the use of lowercase characters and recommends safe retention of this information in a secure location for future reference.

SWIM allows four attempts to login before it temporarily locks the account for 15 minutes. After the 15-minute lock expires, participants may try to login again or reset their password using the “Forgot your password?” link on the login page. Once selected, follow the prompts to enter the case-sensitive email address and provide the security answer. If the security answer is correct, the SWIM system sends a password reset link to the email account for use in resetting the password. Once logged into SWIM, users can modify their password and security answer by selecting the ‘Change Security’ link at the top, right-hand side of the page.

Participants continuing to experience logon issues should confirm use of the current internet browser version (or one previous version). If the browser version is older, upgrade to a newer version. If problems with SWIM still occur, contact 1-844-788-4921 for assistance. An additional SWIM token may be necessary to create another account.

IMPORTANT: Do not use email to send the 2020 Census PSAP submission to the Census Bureau.

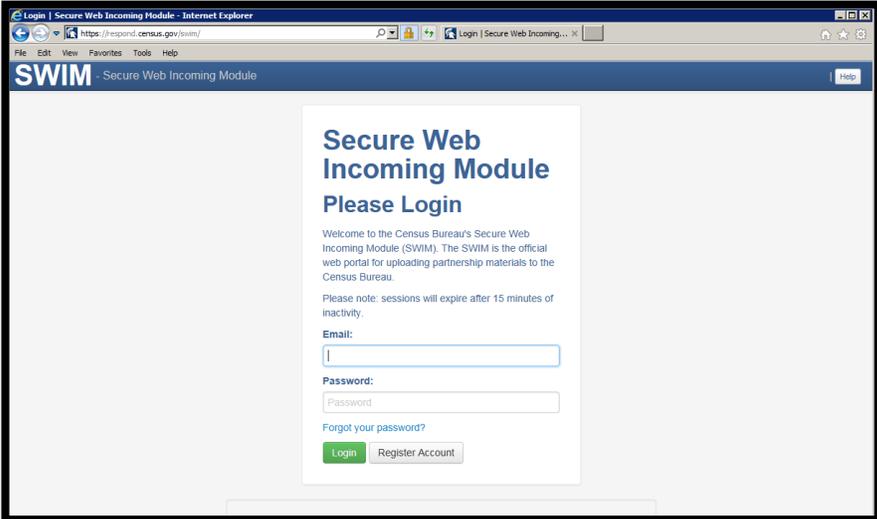
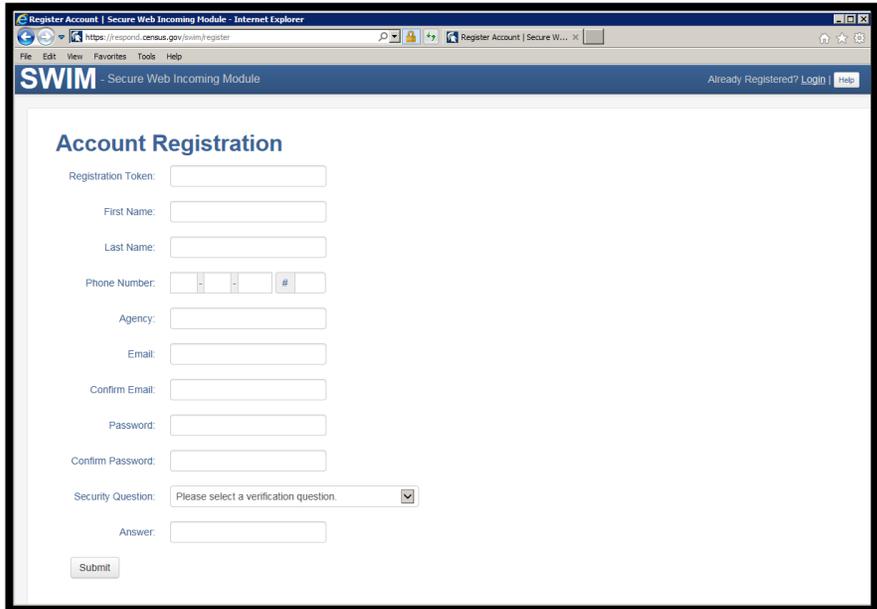
The following list contains the file requirements for using SWIM:

- File to upload must be .zip file format.
- The .zip file may not include another .zip file as a component.
- The .zip file must not be larger than 250 megabytes in size.

11.2 SWIM Submission Example

Refer to [Table 61](#) for instructions on utilizing the SWIM application to submit PSAP updates.

Table 61: SWIM Submission

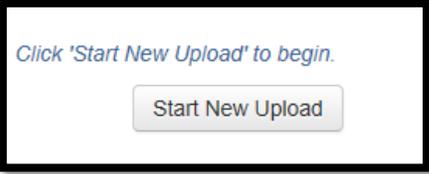
Step	Action and Result
<p>Step 1</p>	<p>Open a new browser window and enter the SWIM URL <https://respond.census.gov/swim/>. <i>The SWIM Please Login screen opens.</i></p> 
<p>Step 2</p>	<p>For participants with an existing SWIM account, enter the email address and password and then click the Login button. <i>The Welcome screen opens. Go to Step 8.</i></p>
<p>Step 3</p>	<p>For participants without a SWIM account, have the 12-digit registration token provided by the Census Bureau ready for account registration. Choose the Register Account button after accessing the SWIM URL. <i>The Account Registration screen opens.</i></p> 
	<p>All fields on the Account Registration screen are required.</p>

Step	Action and Result																				
Step 4	Enter the registration token, name, phone number, agency or organization, email address in the appropriate fields.																				
Step 5	<p>Create a password using the following criteria:</p> <ol style="list-style-type: none"> 1. Must be at least 8-characters in length. 2. Must have at least one uppercase character. 3. Must have at least one lowercase character. 4. Must have at least one number. 5. Must have at least one special character. Valid choices are as follows: #, !, \$, *, &,?, and ~. <p>Note: The comma shown in the previous list are for spacing purposes only. The comma is not a valid special character for use in the password.</p>																				
Step 6	<p>Establish a security question. Click arrow to the right of the Security Question field and select a question from the drop-down menu. Enter an answer in the Answer field. Click the Submit button when finished. A Success screen opens to confirm the successful creation of a SWIM account.</p> <div> </div>																				
Step 7	On the Success screen, select Login to return to the SWIM Please Login screen (shown in Step 1) to proceed with the login process.																				
Step 8	<p>Enter the email and password information and click the green Login button to log into SWIM. The Welcome screen opens. If the account has uploaded other PSAP working counties or other files for different geography programs administered by the Census Bureau, a list of files previously uploaded by the SWIM user displays, as shown in the example below. The list includes the creation date of the file upload, the name of the file, and the corresponding size of the .zip file.</p> <div> <table border="1"> <thead> <tr> <th>#</th> <th>Created On</th> <th>Status</th> <th>file(s)</th> <th></th> </tr> </thead> <tbody> <tr> <td>120</td> <td>08/17/2017</td> <td>Completed</td> <td>1 luca20_PL5127200_in_changes_return.zip (18.00 KiB)</td> <td>Delete</td> </tr> <tr> <td>119</td> <td>04/24/2017</td> <td>Completed</td> <td>1 22033-EastBatonRouge_GSSFY17_April2017.zip (28.39 MiB)</td> <td>Delete</td> </tr> <tr> <td>100</td> <td>02/10/2017</td> <td>Completed</td> <td>1 48053-Burnet_GSSFY17_Jan2017.zip (4.68 MiB)</td> <td>Delete</td> </tr> </tbody> </table> </div>	#	Created On	Status	file(s)		120	08/17/2017	Completed	1 luca20_PL5127200_in_changes_return.zip (18.00 KiB)	Delete	119	04/24/2017	Completed	1 22033-EastBatonRouge_GSSFY17_April2017.zip (28.39 MiB)	Delete	100	02/10/2017	Completed	1 48053-Burnet_GSSFY17_Jan2017.zip (4.68 MiB)	Delete
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100	02/10/2017	Completed	1 48053-Burnet_GSSFY17_Jan2017.zip (4.68 MiB)	Delete																	

Step	Action and Result
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Step 9

To begin a new upload, click the **Start New Upload** button at the bottom of the screen.



The **“What Census program are you reporting data for?”** screen opens. Choose the **Participant Statistical Areas Program (PSAP)** radio button and click the **Next** button.

What Census program are you reporting data for?
 Select the geographic program that you currently wish to submit data for the Census Bureau to review. This selection affects only your current upload. You may select a different option for future uploads. If you are unsure what program to select send an email to geo.swim@census.gov for more guidance.

- Boundary Annexation Survey (BAS)
- Boundary Quality Assessment and Reconciliation Project (BQARP)
- Federal Agency Updates (FDU)
- Geographic Support System (GSS)
- Local Update of Census Addresses Feedback(LUCA FB)
- Participant Statistical Areas Program (PSAP)
- Redistricting Data Program - BBSP-VTD (RDP)
- Redistricting Data Program - CD-SLD (RDP)
- School District Review Program (SDRP)
- Count Review Operation (CRO)
- New Construction (NC)

Step 10

The **“What type of statistical area are you reporting for?”** screen opens.

SWIM - Secure Web Incoming Module Logged in as

What type of geography are you reporting statistical areas for?

- County
- Tribal Area

Click the radio button for the entity type to upload and click the **Next** button. Standard statistical geography participants choose **County**. *The choice of **County** opens the **Select a State and County** screen.*

Select a State and County

State:

County:

Step	Action and Result
<p>Step 11</p>	<p>Following the selection of the statistical area to upload, the Select a .ZIP file to upload screen opens. Click the +Add File button to launch the Choose File to Upload window and navigate to the directory where the .zip file resides. Refer to Table 60 to identify the location of the .zip file to upload. The .zip file resides in the “GUPSGIS\gupsdata\psap20\output” folder on the default drive selected during installation. This is likely the “C:” drive.</p> <div> </div> <div> </div> <p>Note: State and Regional Agency participants perform county based uploads. This means a participant with 10 counties will perform the upload process 10 times if they wish to submit updates for all 10 of those counties. SWIM does not allow for the selection of multiple .zip files within the Choose File to Upload window because of the way other systems receive and process the information from SWIM.</p>

Step	Action and Result
<p>Step 12</p>	<p>Once the file upload completes, the Status field shows “Success.” The name of the file appears in the File(s) field. Participants can add comments to the Comment section if they choose. Click the Next button to proceed with the upload.</p> <div style="border: 1px solid black; padding: 10px;"> <p>Select a .ZIP file to upload.</p> <p>File submissions must be in "zip format" and file size should not exceed 250 MB. Please group all related data together into one ZIP archive including any metadata or supporting documentation that you have available. Please include information about how your geographic data is projected if applicable. If you are submitting shapefiles, be sure to include all of the component files necessary to use the shapefile (at a minimum .shp, .prj, .dbf, .shx). If you are submitting a .MXD file please be sure to include all of the separate data files that are used in the Map (all of the layers, shapefiles, etc.). Please provide any additional information, as applicable, in the comments box below.</p> <p>Choose File: <input type="button" value="+ Add File"/></p> <p>Status: Success</p> <p>File(s):</p> <ul style="list-style-type: none"> • psap20_48251_return.zip <p>Comments:</p> <div style="border: 1px solid gray; height: 40px; width: 100%;"></div> <p style="text-align: right;"> <input type="button" value="Previous"/> <input type="button" value="Next"/> </p> </div>
<p>Step 13</p>	<p>The Thank You screen appears. It thanks the participant and indicates a forthcoming email once transfer completes.</p> <div style="border: 1px solid black; padding: 10px;"> <h2 style="text-align: center; color: #0056b3;">Thank You</h2> <p style="text-align: center; color: #008000;">Thank you for using SWIM. You will receive an email when your file successfully transfers to the Census Bureau.</p> <p>File: psap20_48251_return.zip</p> <p>You may Log Out or return to the upload form, to submit more files.</p> </div>
<p>Step 14</p>	<p>To submit files for an additional county (i.e., for State and Regional Agency participants), choose ‘upload form’ in the phrase “You may Log Out or return to the upload form to submit more files” sentence to return to the Welcome screen and begin the upload process again. If complete with the upload process, choose Log Out.</p>

Step

Action and Result



It is important to mention that SWIM sessions deactivate after 15 minutes of inactivity. Participants taking longer than 15 minutes to upload a file must log back into the system and start again. *They receive a message noting the period of inactivity on the Login screen.*

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.

You have been logged out due to inactivity.

Email:

Password:

[Forgot your password?](#)

When they reach the **Welcome** screen, a record listed with a **Status** of “**In progress, Continue?**” appears with that day’s date in the **Created On** field. Participants can choose the “**Continue?**” link to continue uploading or they can delete the item by choosing the **Delete** button to the far right of the row.

Welcome, Meredith!

#	Created On	Status	file(s)	
1	10/11/2018	In Progress. Continue?		<input type="button" value="Delete"/>

PART 4 NEXT STEPS FOR 2020 CENSUS PSAP

Congratulations on the completion of the delineation phase of 2020 Census PSAP. While this is a major step, it does not conclude participation in 2020 Census PSAP. The final part to this document describes the next steps for 2020 Census PSAP. These steps include a high-level description of the processing of participant's submissions conducted by the Census Bureau that must occur prior to the verification phase. The document concludes by highlighting the plans for the verification and closeout phases of 2020 Census PSAP.

Once received through the SWIM process, the Census Bureau begins its review. This process includes running the same validation checks in GUPS described in [Part 3](#), checking for block group numbering gaps, and conducting basic quality assessments to ensure the specific criteria for each statistical geography is enforced.

After completing the review of the updated delineation materials, the Census Bureau uses the newly suggested geographies to generate the final version of the proposed plan, reviewed by participants during the verification phase. The verification phase begins January 2020 with participants having 90 days to review the verification materials for accuracy of the updates they provided during the delineation phase and respond with suggested corrections. Participants receive a prepaid, verification phase postcard asking them to verify, accept, or reject the final version of the proposed plan. The Census Bureau plans to conduct follow-up with non-responding participants in order to ensure receipt of a response from each that participated during the delineation phase. Once the Census Bureau receives the verification phase postcard with the approval or acceptance of the verification plan or after they receive the suggested corrections, they can finalize the 2020 Census statistical boundaries.

In October 2020, the Census Bureau begins the closeout phase of the 2020 Census PSAP to ensure there are no outstanding changes submitted by participants or to communicate the reasoning for not making participant suggested changes. The timing of this phase begins after allowing time for processing any updates from the verification phase.

More details on both the verification and closeout phases will appear on the PSAP website as they become available. In addition, further communication occurs in advance of each of the last two phases. This concludes the instructional content for the delineation phase for 2020 Census PSAP.

APPENDICES

Appendix A GLOSSARY

Alaska Native Regional Corporation (ANRC) – A corporate geographic area established under the Alaska Native Claims Settlement Act (Pub. L. 92–203, 85 Stat. 688 (1971)) to conduct both the business and nonprofit affairs of Alaska Natives. Twelve ANRCs cover the entire State of Alaska except for the Annette Island Reserve.

Alaska Native village statistical area (ANVSA) – A statistical geographic entity that represents the residences, permanent and/or seasonal, for Alaska Natives who are members of or receiving government services from the defining ANV that are located within the region and vicinity of the ANV’s historic and/or traditional location. ANVSAs are intended to represent the relatively densely settled portion of each ANV and should include only an area where Alaska Natives, especially members of the defining ANV, represent a significant proportion of the population during at least one season of the year (at least three consecutive months).

American Community Survey (ACS) – A survey conducted by the Census Bureau that uses a series of monthly samples to produce annually updated data for the same small areas (census tract and block groups) as the decennial census long-form sample previously surveyed. The Census Bureau last utilized the long-form during Census 2000.

American Indian Area (AIA) – A term used by the Census Bureau that refers to any or all of the following entities: American Indian reservation, American Indian off-reservation trust land, Oklahoma tribal statistical area, joint use area, American Indian tribal subdivision, tribal designated statistical area, and state designated American Indian statistical area.

American Indian off-reservation trust land (ORTL) – An area of land located outside the boundaries of an AIR, whose boundaries are established by deed, and which are held in trust by the U.S. federal government for a federally recognized American Indian tribe or members of that tribe.

American Indian reservation (AIR) – An area of land with boundaries established by final treaty, statute, executive order, and/or court order and over which a federally recognized, American Indian tribal government has governmental authority. Along with “reservation” primary governmental or administrative division of a county in 28 states and the “reservation” designations such as colonies, communities, pueblos, rancherias, and reserves apply to AIRs.

American Indian tribal subdivision – A legal subdivision of a federally recognized American Indian reservation, off-reservation trust land, or a statistical subdivision of Oklahoma tribal statistical areas. These entities are internal units of self-government or administration that serve social, cultural, and/or economic purposes for American Indians.

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

Boundary and Annexation Survey (BAS) – An annual survey to collect information about selected legally defined geographic areas. The Census Bureau uses BAS as a means to update information about the legal boundaries and names of all governmental units in the United States.

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

Census block group – Block groups are statistical geographic divisions of a census tract, defined for the tabulation and dissemination of census data from the decennial censuses, the ACS, and other select surveys.

Census block number – Census block numbers contain a 4-digit number. Census blocks are numbered uniquely within each census tract.

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

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

Census county division (CCD) – Statistical geographic entities in 21 states where minor civil divisions either do not exist or have been unsatisfactory for reporting statistical data. The Census Bureau, in cooperation with state, tribal, and local officials, delineate these areas solely for statistical purposes. CCDs have no legal function and are not legal governmental units. The primary goal of CCDs is to establish and maintain a set of sub-county geographies with stable boundaries and recognizable names. Naming of each CCD is based on a place, county, or well-known local name that identifies its location. In most cases, census tracts nest within CCDs, but in less populated counties CCDs nest within census tracts.

Census designated place (CDP) – Statistical geographic entities representing closely settled, unincorporated communities that are locally recognized and identified by name. CDPs are the statistical equivalent of incorporated places, with the primary differences being the lack of both a legally defined boundary and an active, functioning governmental structure chartered by the state and administered by elected official.

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

However, they may follow governmental unit boundaries and other invisible features in some instances; the boundary of a state or county (or statistically equivalent entity) is always a census tract boundary.

Census tract number – Unique numbers to identify census tracts within a county or statistically equivalent entity. Census tract numbers contain up to a 4-digit number followed by a decimal point and a 2-digit number for suffixed tracts, e.g., 1234.01. For census tracts without a suffix, the number will contain a period with zero fill, e.g., 4567.00. Leading zeros for census tracts, e.g., 0001.00, are not shown on Census Bureau maps. This tract would appear as “1” on maps.

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

Coextensive – The Census Bureau defines coextensive as two or more geographic entities that cover exactly the same area, with all boundaries shared.

Conjoint – The Census Bureau defines conjoint as a boundary line shared by two adjacent geographic entities.

Colonia – A small, generally unincorporated community located in one of the states on the U.S.-Mexico border where residents often build or provide their own housing and that may lack utilities, paved roads, and other infrastructure typically found other similarly sized communities.

Comunidad – A CDP in Puerto Rico that is not related to a municipio’s seat of government, called an aldea or a ciudad prior to the 1990 Census.

Contiguous – The Census Bureau defines contiguous as areas sharing common boundary lines, more than a single point, such that the areas, when combined, form a single piece of territory. Non-contiguous areas form disjoint pieces.

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

Edges – All linear features contained in the MAF/TIGER database.

Edges shapefile – All linear features in the MAF/TIGER database are contained in the edges shapefile. Participants use the edges shapefile to add, delete, or change linear feature attributes.

Faces – Topological areas in the MAF/TIGER database formed by edges.

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

Federal Information Processing Series (FIPS)—These are codes formerly known as Federal Information Processing Standards codes, until the National Institute of Standards and Technology (NIST) announced its decision in 2005 to remove geographic entity codes from its

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

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

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

Geographic Update Partnership Software (GUPS) – A self-contained GIS update and processing package provided by the Census Bureau for participation in a variety of Census geography programs, including 2020 Census PSAP. Pre-packaged to include all of the components for 2020 Census PSAP, the GUPS contains the Census Bureau’s TIGER partnership shapefiles necessary to participate. GUPS allows the participant to add external geospatial data (shapefiles, geodatabases, and imagery) for comparison and update purposes.

Group quarters – The Census Bureau defines group quarters as a location where people live or stay in a group living arrangement that is owned or managed by an entity or organization providing housing and/or services for the residents. This is not a typical household-type living arrangement. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. People living in group quarters are usually not related to each other. Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, and workers’ dormitories.

Housing unit – The Census Bureau defines a housing unit as a house, an apartment, a mobile home or trailer, or a group of rooms or a single room occupied as a separate living quarter or, if vacant, intended for occupancy as a separate living quarter. Separate living quarters are those in which the occupants live and eat separately from any other residents of the building and which have direct access from outside the building or through a common hall.

Incorporated place – A type of governmental unit, incorporated under state law as a city, town

(except in New England, New York, and Wisconsin), borough (except in Alaska and New York), or village, generally to provide governmental services for a concentration of people within legally prescribed boundaries.

Legal boundary – The legally defined boundary of a governmental unit, usually referring to a county, minor civil division, or incorporated place. The legal boundary identifies the area within a tribal government's jurisdiction, and thus bounds the area of PSAP responsibility.

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

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

MAF/TIGER Feature Classification Code (MTFCC) – A 5-digit code assigned by the Census Bureau to classify and describe geographic objects or features in the MAF/TIGER database and its output products.

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

Minor civil division (MCD) – The primary governmental or administrative division of a county in 29 states and the Island Areas having legal boundaries, names, and descriptions. The MCDs represent many different types of legal entities with a wide variety of characteristics, powers, and functions depending on the state and type of MCD. In some states, some or all of the incorporated places also constitute MCDs. MCDs are identified by a variety of terms, such as town (in eight states), township, and/or district. They include both functioning and nonfunctioning government entities.

Municipio – A type of governmental unit that is the primary legal subdivision of Puerto Rico. The Census Bureau treats the municipio as the statistical equivalent of a county.

Non-city style address – The Census Bureau's definition of a non-city style address is one that does not have a house number and/or street name or may not include a complete house number and street name address. This includes rural route and box number address and highway contract route addresses, etc., which may include a box number, post office boxes and drawers, and general delivery.

Nonvisible feature – The Census Bureau defines a nonvisible feature as one that is not visible on the ground and/or in imagery such as a city or county boundary through space, a property line, or line-of-sight extension of a road.

Participant Statistical Areas Program (PSAP) – A Census Bureau program offered every 10 years that allows identified participants, following established criteria and guidelines, to review

and update existing statistical geographies and delineate new statistical geographies as appropriate. The standard statistical geographies include census tracts, block groups, census designated places, and census county divisions.

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

PSAP official liaison – A person at the PSAP participating government or organization identified to serve as the primary point of contact for PSAP.

PSAP technical contact – A person serving as the technical point of contact for a PSAP participant that likely conducts the actual program work using the Census Bureau’s Geographic Update Partnership Software (GUPS) or paper maps (for tribal participants).

Regional Census Center (RCC) – Temporary offices set up approximately two years prior to the decennial census. The geographic staff from the Regional Offices are assigned to their respective RCC and assist with the execution of various geographic operations as well as provide support for the field operations conducted during the decennial.

Regional Office (RO) – One of the permanent Census Bureau offices responsible for the Census Bureau’s office and field operations within its region.

Retracting – The Census Bureau defines retracting as substantially changing the boundaries of a census tract so that comparability over decades is lost.

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

Special use census tract/block group – A type of census tract or block group designated as a specific use type (e.g., state park or large lake) and has an official name (e.g. Cleburne State Park or Lake Minnetonka). Special use geographies should contain no (or very little) population or housing, and must not create a noncontiguous census tract/block group.

Standard statistical geographic entity (standard statistical geographies) – A geographic entity specifically defined and delineated (census tract, block group, census designated place, census county division) so that the Census Bureau may tabulate data for it. Designation as a statistical entity neither conveys nor confers legal ownership, entitlement, or jurisdictional authority.

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

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

along street features used for geocoding MAF records to census geography.

Visible feature – The Census Bureau defines a visible feature as one that can be seen on the ground and/or in imagery. Visible features include a street, railroad tract, major above ground transmission line or pipeline, stream, shoreline, fence, distinctly defined mountain ridge, or cliff. A non-standard visible feature is a visible feature that may not be clearly defined on the ground (such as a ridgeline), may be seasonal (such as an intermittent stream), or may be relatively impermanent (such as a fence). The Census Bureau generally requests verification that nonstandard visible features used for statistical geographies pose no problem during fieldwork necessary to conduct a census or survey.

Appendix B 2020 CENSUS PSAP CRITERIA

The population and housing unit criteria for the standard statistical geographies in the 2020 Census PSAP. In **Part 1** of the Respondent Guide, individual tables reflect each of the geographies separately. This table shows the four standard statistical geographies and their associated population and housing criteria in one table, with the exception of the special use census tracts and block groups. The criteria for special use geographies is located in the respective chapters for census tracts and block groups.

Table 62: Standard Statistical Geographies and their Population and Housing Criteria

Standard statistical geography	Nests Within	Population Criteria		Housing Unit Criteria	
Census tracts	County	Optimum	4,000	Optimum	1,600
		Minimum	1,200	Minimum	480
		Maximum	8,000	Maximum	3,200
Block groups	Census Tract	Optimum	1,500	Optimum	None
		Minimum	600	Minimum	240
		Maximum	3,000	Maximum	1,200
Census designated places (CDPs)	State	A CDP cannot have zero population and zero housing units.		A CDP cannot have zero population and zero housing units.	
Census county divisions (CCDs)	County	None		None	

Appendix C PSAP HISTORICAL BACKGROUND

C.1 History of Census Tracts

In 1905, Dr. Walter Laidlaw originated the concept of permanent, small geographic areas as a framework for studying change from one decennial census to another in neighborhoods within New York City. For the 1910 Census, eight cities—New York, Baltimore, Boston, Chicago, Cleveland, Philadelphia, Pittsburgh, and St. Louis—delineated census tracts (then termed “districts”) for the first time. No additional jurisdictions delineated census tracts until just prior to the 1930 Census, when an additional ten cities chose to do so. The increased interest in census tracts for the 1930 Census is attributed to the promotional efforts of Howard Whipple Green, who was a statistician in Cleveland, Ohio, and later the chairman of the American Statistical Association's Committee on Census Enumeration Areas. For more than twenty-five years, Mr. Green strongly encouraged local citizens, via committees, to establish census tracts and other census statistical geographic areas. The committees created by local citizens were known as Census Tract Committees, later called Census Statistical Areas Committees.

After 1930, the Census Bureau saw the need to standardize the delineation, review, and updating of census tracts and published the first set of census tract criteria in 1934. The goal of the criteria has remained unchanged; that is, to assure comparability and data reliability through the standardization of the population thresholds for census tracts, as well as requiring that their boundaries follow specific types of geographic features that do not change frequently. The Census Bureau began publishing census tract data as part of its standard tabulations beginning with the 1940 Census. Prior to that time, census tract data were published as special tabulations.

For the 1940 Census, the Census Bureau began publishing census block data for all cities with 50,000 or more people. Census block numbers were assigned, where possible, by census tract, but for those cities that had not yet delineated census tracts, “block areas” (called “block numbering areas” [BNAs] in later censuses) were created to assign census block numbers.

Starting with the 1960 Census, the Census Bureau assumed a greater role in promoting and coordinating the delineation, review, and update of census tracts. For the 1980 Census, criteria for BNAs were changed to make them more comparable in size and shape to census tracts. For the 1990 Census, all counties contained either census tracts or BNAs.

Census 2000 was the first decade in which census tracts were defined in all counties. In addition, the Census Bureau increased the number of geographic areas whose boundaries could be used as census tract boundaries. It also allowed tribal governments of federally recognized American Indian tribes with a reservation and/or off-reservation trust lands to delineate tracts without regard to state and/or county boundaries, provided the tribe had a 1990 Census population of at least 1,000.

For the 2010 Census, the Census Bureau adopted changes to census tract criteria that recognized their utility as a framework of small geographic areas for presenting and analyzing statistical and other data for a variety of communities, settlement patterns, and landscapes. The Census Bureau augmented its minimum, maximum, and optimum population threshold with housing unit thresholds for use in defining census tracts for seasonal communities that

have no or low population on census day (April 1). In addition, the Census Bureau formalized criteria for census tracts defined for employment centers, airports, parks, large water bodies, and other special land uses that had been permitted in previous decades, but never specified within the criteria. The Census Bureau also established tribal census tracts as a geographic framework defined within federally recognized American Indian reservations and off-reservation trust lands that is fully separate from the standard census tracts defined within counties.

C.2 History of Block Groups

The Census Bureau first delineated block groups as statistical geographic divisions of census tracts for the 1970 Census, comprising contiguous combinations of census blocks for data presentation purposes. At that time, census block groups only existed in urbanized areas in with census blocks. Defined without regard to political and administrative boundaries, block groups contained an average population of 1,000, and were approximately equal in area.

As use of census block, block group, and census tract data increased among data users, the Census Bureau expanded these programs to cover additional geographic areas while redefining the population threshold criteria to more adequately suit data users' needs. The 1990 Census was the first decennial census in which census blocks and block groups were defined throughout the entirety of the United States, Puerto Rico, and the Island Areas. For the 2000 Census, the Census Bureau increased the number of geographic areas whose boundaries could be used as block group boundaries. The Census Bureau allowed tribal governments of federally recognized American Indian tribes with a reservation and/or off-reservation trust lands to delineate tribal block groups without regard to state and/or county boundaries, provided the tribe had a 1990 Census population of at least 1,000.

For the 2010 Census, the Census Bureau adopted changes to block group criteria that recognized their utility as a framework of small geographic areas for presenting and analyzing statistical and other data for a variety of communities, settlement patterns, and landscapes. The Census Bureau augmented its minimum and maximum population threshold with housing unit thresholds for use in defining block groups for seasonal communities that have no or low population on census day (April 1). In addition, the Census Bureau formalized criteria for block groups defined for employment centers, airports, parks, large water bodies, and other special land uses permitted in previous decades, but never specified within the criteria. The Census Bureau also established tribal block groups as a geographic framework defined within federally recognized American Indian reservations and off-reservation trust lands that is fully separate from the standard block groups defined within counties.

C.3 History of Census Designated Places (CDPs)

In response to data user needs for place-level data, the CDP concept and delineation criteria have evolved over the past seven decades. This evolution has taken into account differences in the way in which places were perceived, and the propensity for places to incorporate in various states. Over time, the result has been an increase in the number and types of unincorporated communities identified as CDPs, as well as an increasing consistency in the relationship between the CDP concept and the kinds of places encompassed by the incorporated place category, or a compromise between localized perceptions of place and a concept that would be

familiar to data users throughout the United States, Puerto Rico, and the Island Areas.

Although not as numerous as incorporated places, CDPs have been important geographic entities since their introduction for the 1950 Census (CDPs were referred to as “unincorporated places” from 1950 through the 1970 decennial censuses). For the 1950 Census, CDPs were defined only outside urbanized areas and were required to have at least 1,000 residents. For the 1960 Census, CDPs could also be identified inside urbanized areas outside of New England, but these were required to have at least 10,000 residents. The Census Bureau modified the population threshold within urbanized areas to 5,000 residents in 1970, allowed for CDPs in urbanized areas in New England in 1980, and lowered the threshold for CDPs within urbanized areas to 2,500 in 1990. In time, other population thresholds were adopted for identification of CDPs in Alaska, Puerto Rico, the Island Areas, and on American Indian reservations (AIRs). The Census Bureau eliminated all population threshold requirements for Census 2000, achieving consistency between CDPs and incorporated places, for which the Census Bureau historically has published data without regard to population size.

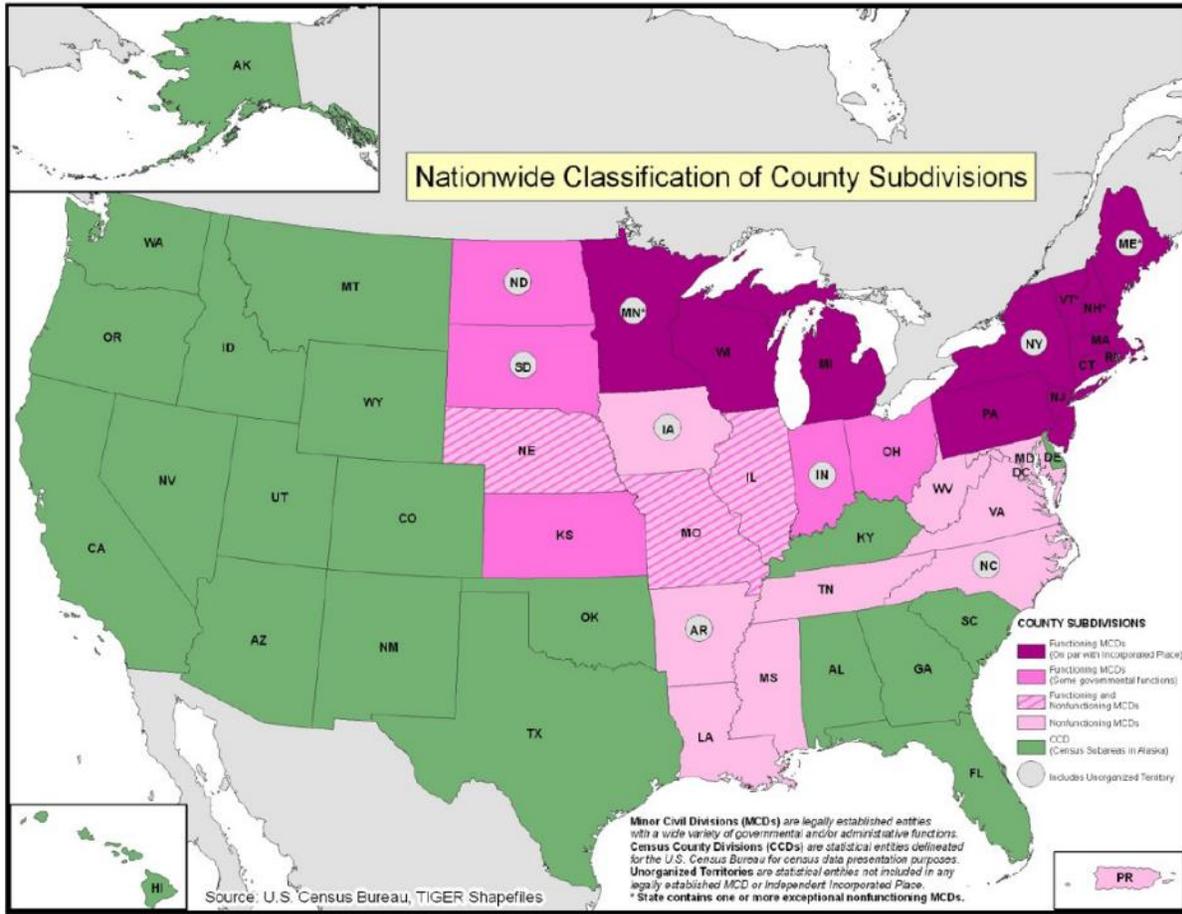
According to the 2010 Census, more than 38.7 million people in the United States, Puerto Rico, and the Island Areas lived in CDPs. The relative importance of CDPs varies from state to state depending on laws governing municipal incorporation and annexation, but also depending on local preferences and attitudes regarding the identification of places.

C.4 History of Census County Divisions (CCDs)

When CCDs were introduced prior to the 1950 Census, few alternatives were available for the provision of statistical data related to relatively stable, subcounty geographic units. Census tracts were defined in only a subset of metropolitan area counties. MCDs existed in all counties, but in some states, MCD boundaries changed frequently enough that they were not useful for comparing statistical data from one decade to another.

For much of the period from the 1950 Census through the 1980 Census, county subdivisions (MCDs and CCDs) provided the only subcounty unit of geography at which data users could obtain statistical data for complete coverage of counties nationwide. The introduction of block numbering areas (BNAs) in counties without census tracts for the 1990 Census offered an alternate subcounty entity for which data could be tabulated. For Census 2000, the Census Bureau introduced census tracts nationwide (in many counties, BNAs were simply relabeled as “census tracts”), increasing the dissemination of, and ability to analyze, data at the census tract level, and providing an alternative set of subcounty statistical geographic areas in each county in addition to MCDs and CCDs. Nevertheless, CCDs and MCDs remain useful for presenting subcounty statistics and, in less populous counties containing only one or two census tracts, can provide greater spatial resolution when analyzing the distribution of population and characteristics.

Appendix D COUNTY SUBDIVISIONS MAP



Appendix E SUPPLEMENTAL SOURCES FOR PSAP REVIEW

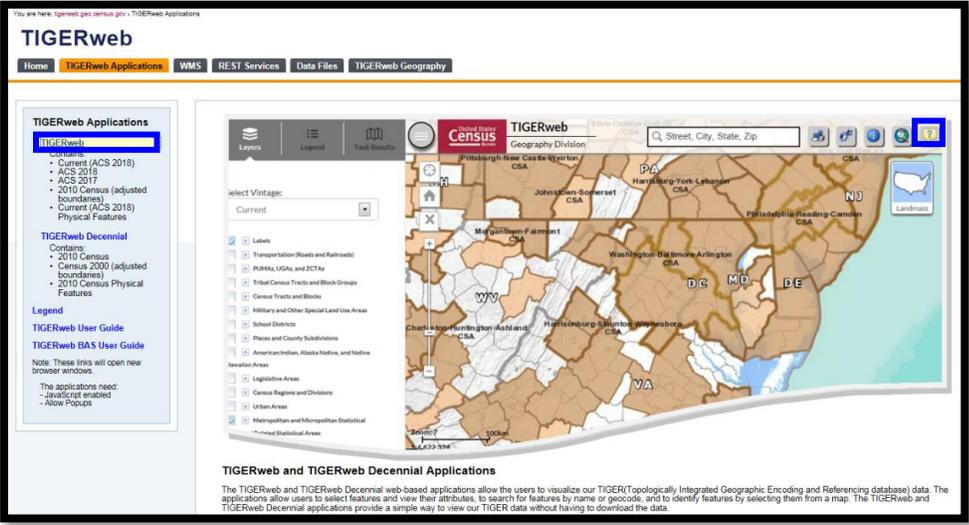
This section describes four supplemental sources to consider using while performing PSAP review: TIGERweb, American Indian Areas layer, area landmark and point landmark layers, and parcel boundaries. Not all of these sources may be available or applicable to each participants' universe of counties.

TIGERweb

The Census Bureau's TIGERweb online map viewer, located at <https://tigerweb.geo.census.gov/tigerweb/>, allows participants to view the Census Bureau's 2010 census geographies layers outside of the GUPS environment. TIGERweb allows viewing, at street level detail, features such as roads, waterways, and county, place/city, CDP, census tracts, block groups and other boundaries, and satellite imagery.

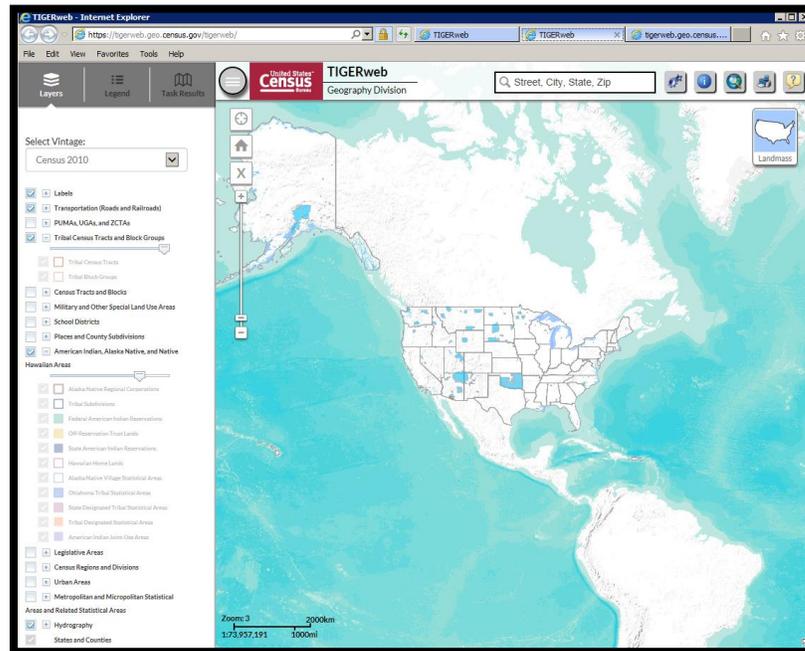
Participants may find this additional tool beneficial to visualize the 2010 census tracts and block groups for comparison to their 2020 proposed plan in order to verify the changes or determine if there is a need to make additional changes. Because it resides outside of GUPS, participants can open TIGERweb in a separate window or on a second, dual monitor for a side-by-side visual comparison. Follow the steps in [Table 63](#) for instructions on accessing and using TIGERweb.

Table 63: Display the TIGERweb Online Map Viewer

Step	Action and Result
Step 1	Navigate to the TIGERweb web site located at: https://tigerweb.geo.census.gov/ . TIGERweb currently supports Microsoft Internet Explorer, Mozilla Firefox, Opera, and Google Chrome internet browsers.
Step 2	Click the TIGERweb Applications tab.
Step 3	<p>Click the TIGERweb link under the orange TIGERweb Applications tab on the left side of the screen. Do not click the TIGERweb Decennial link. The built-in user guide is located by clicking the "Help/About" icon in the upper right corner of the TIGERweb window.</p>  <p>TIGERweb and TIGERweb Decennial Applications</p> <p>The TIGERweb and TIGERweb Decennial web-based applications allow the users to visualize our TIGER (Topologically Integrated Geographic Encoding and Referencing database) data. The applications allow users to select features and view their attributes, to search for features by name or geocode, and to identify features by selecting them from a map. The TIGERweb and TIGERweb Decennial applications provide a simple way to view our TIGER data without having to download the data.</p>

Step	Action and <i>Result</i>
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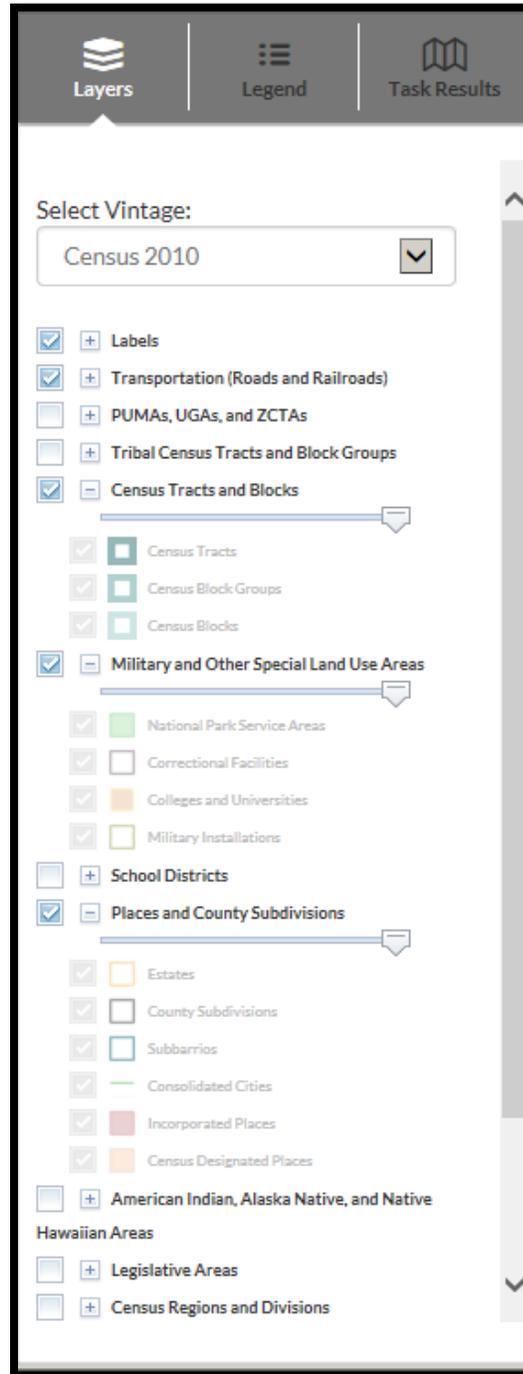
Step 4	After opening TIGERweb the map display, navigation tools, the Layers panel, a legend, and map vintage becomes visible.
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	<p>The Layers panel shows the list of available features and geographic areas. Several display upon startup organized into separate groups, called map services. The geographic type forms the basis of the groupings. Expand each map service by clicking on the '+' symbol to see all of the available layers that include physical features such as roads and water features, as well as legal and statistical boundaries, census blocks and incorporated places. Limit the amount of data on the map by selecting only the applicable types of linear features and geographic entities. Click on the '+' sign to expand a map layer and view the 'Slider' tool to make the layer more or less transparent.</p>
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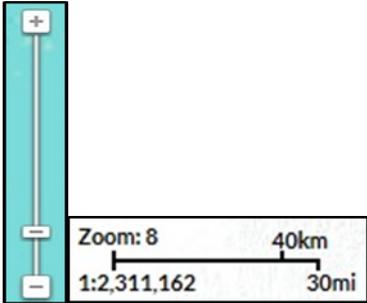
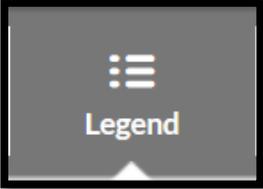
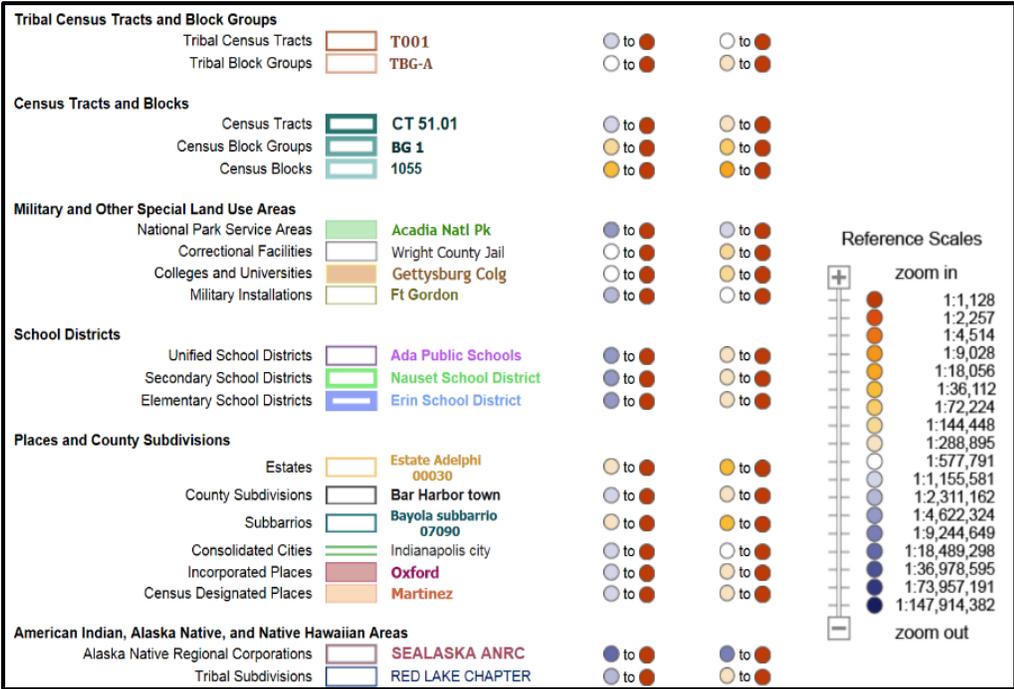
Step 5

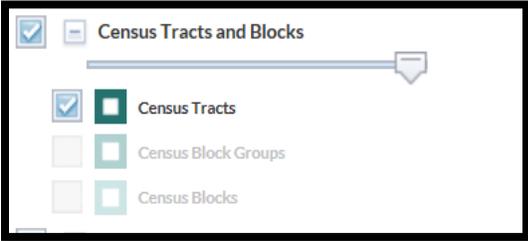
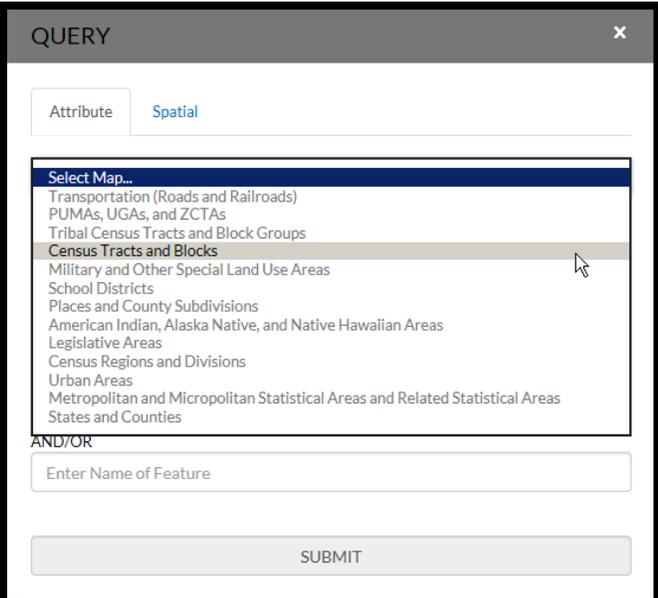
The **Select Vintage** from the drop-down menu in the **Layers** panel shows the vintages of TIGERweb geographies that are available for display in the application. Select **Census 2010** to view the 2010 geographies. Click on the '+' sign next to each map service in the **Layers** panel to expand the map service and view the layers within it. *This example shows the selection of the Transportation, Tribal Census Tracts and Block Groups, American Indian, Alaska Native, and Native Hawaiian Areas, and Hydrography map layers.*



The features and geographic areas contained in the map services do not immediately appear because each layer has a range of zoom levels at which it will display. In other words, visibility of layers is scale dependent. More details appear when zooming in on the map. [Table 64](#) provides a summary of many of TIGERweb tools and functionality.

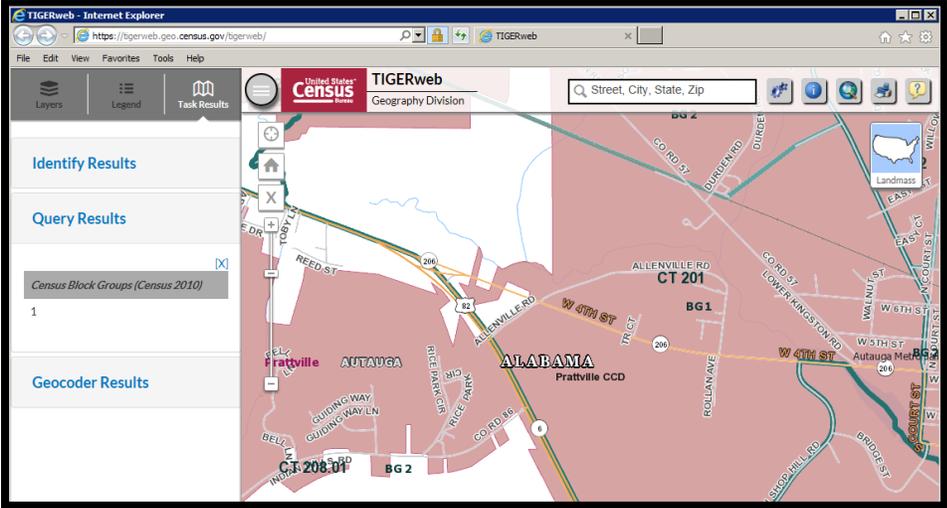
Table 64: TIGERweb Tools and Functions

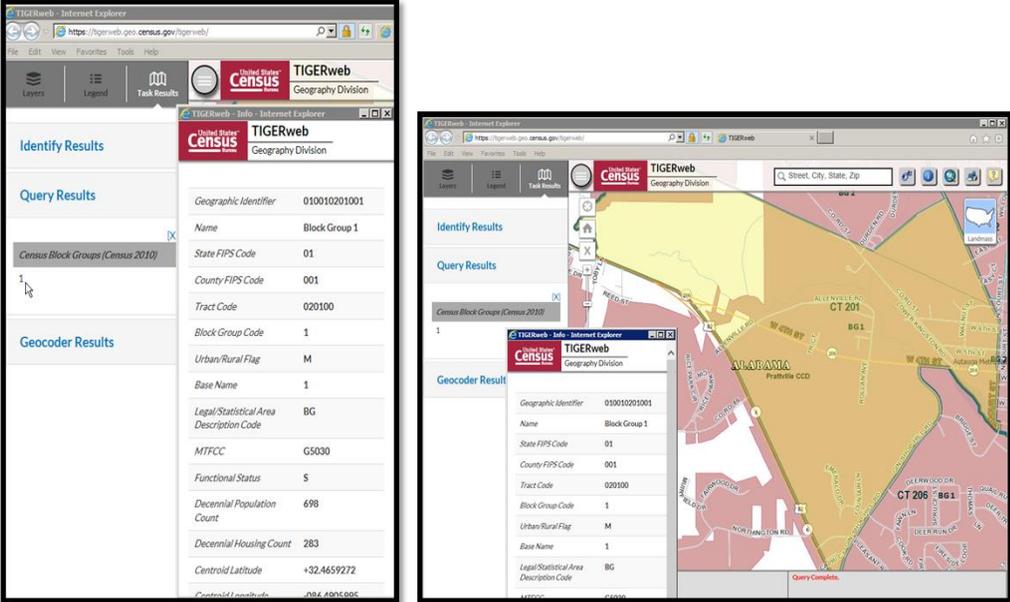
Step	Action and Result																																																																																	
<p>Step 1</p>	<p>The vertical Zoom In Scale Bar, shown on the left. Click on the '+' to zoom in for more detail or click on the '-' to zoom out for less detail. By rolling the wheel on the computer's mouse, participants can zoom in or zoom out from the current scale.</p> <p>Note: At Zoom level 6, counties appear; at zoom level 9, Census Tracts and Places appear, at zoom level 10, Roads and Railroads appear, and at zoom level 13, Block Groups appear.</p> 																																																																																	
<p>Step 2</p>	<p>Click the Legend tool at the top of the screen to view the Detailed Legend and layers symbology.</p> 																																																																																	
<p>Step 3</p>	<p>Click the Detailed Legend to see at what zoom level the layer and labels appear.</p>  <table border="1"> <thead> <tr> <th>Layer Name</th> <th>Symbology</th> <th>Zoom Level</th> </tr> </thead> <tbody> <tr> <td colspan="3">Tribal Census Tracts and Block Groups</td> </tr> <tr> <td>Tribal Census Tracts</td> <td>Red outline</td> <td>T001</td> </tr> <tr> <td>Tribal Block Groups</td> <td>Red outline</td> <td>TBG-A</td> </tr> <tr> <td colspan="3">Census Tracts and Blocks</td> </tr> <tr> <td>Census Tracts</td> <td>Green outline</td> <td>CT 51.01</td> </tr> <tr> <td>Census Block Groups</td> <td>Green outline</td> <td>BG 1</td> </tr> <tr> <td>Census Blocks</td> <td>Green outline</td> <td>1055</td> </tr> <tr> <td colspan="3">Military and Other Special Land Use Areas</td> </tr> <tr> <td>National Park Service Areas</td> <td>Green fill</td> <td>Acadia Natl Pk</td> </tr> <tr> <td>Correctional Facilities</td> <td>White fill</td> <td>Wright County Jail</td> </tr> <tr> <td>Colleges and Universities</td> <td>Orange fill</td> <td>Gettysburg Colg</td> </tr> <tr> <td>Military Installations</td> <td>White fill</td> <td>Ft Gordon</td> </tr> <tr> <td colspan="3">School Districts</td> </tr> <tr> <td>Unified School Districts</td> <td>Purple outline</td> <td>Ada Public Schools</td> </tr> <tr> <td>Secondary School Districts</td> <td>Green outline</td> <td>Nauset School District</td> </tr> <tr> <td>Elementary School Districts</td> <td>Blue outline</td> <td>Erin School District</td> </tr> <tr> <td colspan="3">Places and County Subdivisions</td> </tr> <tr> <td>Estates</td> <td>Orange outline</td> <td>Estate Adelphi 00030</td> </tr> <tr> <td>County Subdivisions</td> <td>White outline</td> <td>Bar Harbor town</td> </tr> <tr> <td>Subbarrios</td> <td>Blue outline</td> <td>Bayola subbarrio 07090</td> </tr> <tr> <td>Consolidated Cities</td> <td>Green outline</td> <td>Indianapolis city</td> </tr> <tr> <td>Incorporated Places</td> <td>Red outline</td> <td>Oxford</td> </tr> <tr> <td>Census Designated Places</td> <td>Orange outline</td> <td>Martinez</td> </tr> <tr> <td colspan="3">American Indian, Alaska Native, and Native Hawaiian Areas</td> </tr> <tr> <td>Alaska Native Regional Corporations</td> <td>Red outline</td> <td>SEALASKA ANRC</td> </tr> <tr> <td>Tribal Subdivisions</td> <td>Blue outline</td> <td>RED LAKE CHAPTER</td> </tr> </tbody> </table>	Layer Name	Symbology	Zoom Level	Tribal Census Tracts and Block Groups			Tribal Census Tracts	Red outline	T001	Tribal Block Groups	Red outline	TBG-A	Census Tracts and Blocks			Census Tracts	Green outline	CT 51.01	Census Block Groups	Green outline	BG 1	Census Blocks	Green outline	1055	Military and Other Special Land Use Areas			National Park Service Areas	Green fill	Acadia Natl Pk	Correctional Facilities	White fill	Wright County Jail	Colleges and Universities	Orange fill	Gettysburg Colg	Military Installations	White fill	Ft Gordon	School Districts			Unified School Districts	Purple outline	Ada Public Schools	Secondary School Districts	Green outline	Nauset School District	Elementary School Districts	Blue outline	Erin School District	Places and County Subdivisions			Estates	Orange outline	Estate Adelphi 00030	County Subdivisions	White outline	Bar Harbor town	Subbarrios	Blue outline	Bayola subbarrio 07090	Consolidated Cities	Green outline	Indianapolis city	Incorporated Places	Red outline	Oxford	Census Designated Places	Orange outline	Martinez	American Indian, Alaska Native, and Native Hawaiian Areas			Alaska Native Regional Corporations	Red outline	SEALASKA ANRC	Tribal Subdivisions	Blue outline	RED LAKE CHAPTER
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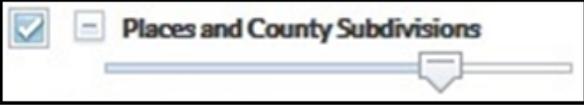
Step	Action and Result
<p>Step 4</p>	<p>Click off the Legend and back in the Layers panel to turn them on or off to display boundaries for only active layers. <i>The example shows the Census Block Groups and Census Blocks unchecked.</i></p> 
<p>Step 5</p>	<p>One of the easiest ways to determine information for any given entity is to use the Identify button along the top right of the TIGERweb window.</p>  <p>After zooming into the area of interest, click the Identify button and then click anywhere inside of the tribal entity displayed on the screen. <i>The Task Results window populates with Identify Results with all of the information about the exact area clicked.</i></p>
<p>Step 6</p>	<p>TIGERweb allows PSAP participants to quickly locate an entity visually using the Zoom In tool or by using the Query button to search for a census tract or block group by its geographic ID, also known as its GEOID.</p> <p>To locate a 2010 Census Tract: Select the Query button along the top right of the TIGERweb window.</p>  <p>From the Select Map drop-down menu, select Census Tracts and Blocks.</p> 

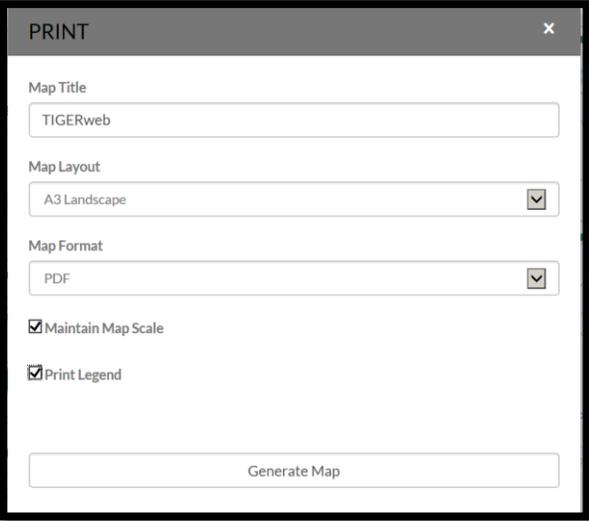
Step	Action and Result
<p>Step 7</p>	<p>Select to highlight the Census Tracts from the Select Layer(s) list.</p> <p>Enter the census tracts GEOID number to locate. The GEOID is an 11-digit number that represent the following: two-digit State FIPS code followed with the three-digit County FIPS code and then the six-digit census tract code (e.g. "01001020100" is the numeric GEOID of census tract 0201.00 in 01001).</p> <div> </div> <p>Click Submit.</p>
<p>Step 8</p>	<p>To locate a 2010 Block Group:</p> <p>Execute the same steps described above, except from the Census Tracts and Blocks menu select the Census Block Groups from the Select Layer(s) list.</p> <p>Enter the block group's GEOID number. The block group GEOID is a 12-digit number that represent the following: two-digit State FIPS code followed with the three-digit County FIPS code followed with the six-digit census tract code and the one-digit block group code (e.g., "010010201001" is the numeric GEOID of block group 1 in 01001, census tract 0201.00).</p> <div> </div> <p>Click Submit.</p>

Step	Action and Result
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<p>Step 9</p>	<p>Click the Query Results tab to the left of the map. <i>TIGERweb displays the result(s) of the query.</i></p> 
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<p>Step 10</p>	<p>If participants click the value within the query result section, <i>TIGERweb displays the Info panel containing attribute data for the queried entity.</i> Minimize or close the Info panel by clicking on the “-” or “X” symbols in the top right of the Info panel, respectively.</p>  <p><i>TIGERweb displays the selected entity (block group 010010201001) highlighted in the center of the map.</i></p>
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<p>Step 11</p>	<p>Change the transparency of each layer within the Layers panel by moving the sliding bar below the layer name to the left or right.</p> 
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Step	Action and Result
<p>Step 12</p>	<p>TIGERweb allows users to select landmass, satellite imagery, or terrain as a background of the map display from the upper right corner of the map view. <i>The Landmass displays by default when opening TIGERweb.</i> To change options, click the button to toggle through all three choices. Select the Satellite button to display satellite imagery.</p> 
<p>Step 13</p>	<p>Click the Print button when using TIGERweb to print and save a map. <i>The PRINT window displays.</i></p>  <p>From the PRINT window, select a Map Title, Map Layout, Map Format, then Click the Generate Map to create a map and print.</p> 

With the tools and functionality described above, participants can navigate their working county outside of GUPS and may find this easier for comparison sake.

American Indian Areas Layer

The American Indian Areas layer within GUPS provides a supplemental source for understanding what entities cause tracts to code in the 94XX range and can serve as a very strong legal feature for establishing and correcting tract and block group boundaries.

Note: This layer will not exist within GUPS for counties without an American Indian Area.

Although tribal statistical geography falls under a different universe for review, the 94XX code series is reserved for standard census tracts that are delineated either within or primarily to cover an American Indian Reservation or off-reservation trust land while also adhering to the standard census tract criteria. Some areas of the country, primarily in the Southwest, have counties with the majority of tracts coded to the 94XX range. Major changes to reservation areas happen infrequently, so the Census Bureau does not anticipate that PSAP will produce any new 94XX coded tracts.

IMPORTANT: 94XX are not tribal tracts but a special use area with a type denoted as tribal. Tribal tracts are a part of a distinct system, separate from standard census geography.

Area and Point Landmark Layers

As a tool for determining whether a census tract or block group could be a special land use area, it can sometimes be helpful to activate the area landmark (arealm) or point landmark (pointlm) layers within GUPS. While providing a useful visual, many landmarks do not qualify as special use areas because of their areal extent. Additionally, existing landmarks may not have any distinguishing features in aerial imagery to help with drawing boundaries and may not necessarily map to the extent of the special land use geographic entity. As a supplemental layer, area landmarks give participants another tool to describe a special land use area that is apparent directly from the visible land use characteristics.

Parcel Boundaries

In some situations, non-visible, legal, linear features can be preferred as boundaries for census tracts and block groups. At the smallest scale, participants can use parcel boundaries for reference to developments or contiguous personal plots if no other solution for splitting an area is present. Parcel boundaries are particularly useful when working census tracts that contain neighborhoods characterized by cul-de-sacs that form ‘dangling’ edges in the database, meaning that there is frequently not a closed circuit of visible features available to connect all of the housing units associated with the development.

Participants with access to digital map data for parcels can utilize the Manage Layers toolbar to add in external data. Review [Section 8.4.3](#) for details on using the specific buttons with respect to the local data type.

Appendix F MAF/TIGER FEATURE CLASSIFICATION CODES

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. GUPS participants may need these codes if they edit existing or add new linear features for creating new statistical boundaries.

An electronic list of MTFCCs is located within the technical documentation for the TIGER/Line Shapefiles on the Census Bureau’s website <<https://www.census.gov/geo/maps-data/data/tiger-line.html>>. Within that specific documentation, it is Appendix E.

Table 65: MTFCCs, Feature Classes, and Descriptions

MTFCC	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 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.
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.

MTFCC	Feature Class	Description
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.
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.

MTFCC	Feature Class	Description
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 places continues to function within the consolidation. It is a place that contains additional separately incorporated places.

MTFCC	Feature Class	Description
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.
G5410	Secondary School District	A geographic area within which officials provide public secondary grade-level educational services for residents.

MTFCC	Feature Class	Description
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 Census Bureau includes in the MAF/TIGER® System 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].
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.

MTFCC	Feature Class	Description
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 and 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.
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.

MTFCC	Feature Class	Description
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.
K2424	Marina	A place where privately owned, light-craft are moored.
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.
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—Intermodal Transportation 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—Statistical Representation	The area of an airport adjusted to include whole 2000 census blocks used for the delineation of urban areas
K2458	Park and Ride Facility/Parking 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 Landing Pad	A fairly level and usually paved expanse used by helicopters for taking off and landing.
K2540	University or College	A building or group of buildings used as an institution for post-secondary study, teaching, and learning [including seminary].

MTFCC	Feature Class	Description
K2543	School or 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 Center, Cultural Center, or Tourist 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 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 manmade 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 Line	A line defined as beginning at one location point and ending at another, both of which are in sight.
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.

MTFCC	Feature Class	Description
P0004	Other non-visible bounding Edge (e.g., Census water boundary, boundary of an aerial 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 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 the MAF/TIGER System.
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.

MTFCC	Feature Class	Description
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.

Appendix G ACCEPTABLE LINEAR FEATURES FOR STATISTICAL BOUNDARIES

Below is a list of linear features that make acceptable or questionable statistical geography boundaries. Refer to this list while reviewing existing boundaries, but also when creating new geographies or modifying existing boundaries. Except in instances described in [Table 4](#) for non-visible boundaries, this appendix is the source for the Census Bureau during their review of participant submissions. A complete list of MAF/TIGER Feature Classification Codes (MTFCCs) is located on the Census Bureau’s geography reference website:

<<https://www.census.gov/geo/reference/mtfcc.html>>.

Table 66: Acceptable Linear Features for Statistical Boundaries

Feature Name	MTFCC	Acceptable	Questionable
Aerial Tramway/Ski Lift	L4031	X	
Alley	S1730	X	
Bike Path or Trail	S1820		X
Braided Stream	H3013	X	
Bridle Path/Horse Trail	S1830		X
Canal, Ditch, or Aqueduct (intermittent)	H3020		X
Canal, Ditch, or Aqueduct (perennial)	H3020	X	
Carline, Streetcar Track, Monorail, Other Mass Transit Rail	R1051	X	
Cliff/Escarpment	L4125	X	
Cog Rail Line, Incline Rail Line, Tram	R1052	X	
Dam	C3027	X	
Fence Line	L4110		X
Ferry Crossing	L4165	X	
Intermittent Shoreline	P0003		X
Interstate Highway or Primary Road with limited access	S1100	X	
Levee	C3024	X	
Local Neighborhood Road, Rural Road, City Street	S1400	X	
Parking Lot Road	S1780		X
Perennial Shoreline	P0002	X	
Pier/Dock	K2432	X	
Pipeline (above ground)	L4010	X	
Point-to-Point Line	L4130		X
Power line (above ground, high tension)	L4020	X	

Feature Name	MTFCC	Acceptable	Questionable
Primary Road without limited access, US Highway, State Highway, or County Highway, Secondary and connecting roads	S1200	X	
Private Driveway	S1750		X
Private Road for service vehicles (logging, oil fields, ranches, etc.)	S1740		X
Property/Parcel Line (PLSS, airport, airfield, military installation or other)	L4140		X
Railroad Feature (Main, Spur, or Yard)	R1011	X	
Ridge Line	L4121	X	
Runway/Taxiway	K2459	X	
Service Drive/Service Road (usually along limited access highway)	S1640	X	
Stairway	S1720		X
Stream/River (intermittent)	H3010		X
Stream/River (perennial)	H3010	X	
Vehicular Trail (4WD)	S1500		X
Walkway/Pedestrian Trail	S1710		X

Appendix H STANDARD STREET TYPE ABBREVIATIONS

The street name types and their abbreviations shown below provide background to PSAP participants that may need to add linear features in order to split statistical geographies. Use the standard street type abbreviations to assign the street type to any newly added linear features that are streets.

Table 67: Standard Street Type Abbreviations

Street 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
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

Street Type	Standard Abbreviation
CROSSROAD	XRD
CROSSROADS	XRDS
CURVE	CURV
DALE	DL
DAM	DM
DIVIDE	DV
DRIVE	DR
DRIVES	DRS
ESTATE	EST
ESTATES	ESTS
EXPRESSWAY	EXPY
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
HAVEN	HVN
HEIGHTS	HTS
HIGHWAY	HWY
HILL	HL
HILLS	HLS
HOLLOW	HOLW
INLET	INLT
ISLAND	IS
ISLANDS	ISS
ISLE	ISLE
JUNCTION	JCT

Street Type	Standard Abbreviation
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
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
PLAZA	PLZ
POINT	PT
POINTS	PTS
PORT	PRT

Street Type	Standard Abbreviation
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
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

Street Type	Standard Abbreviation
VILLAGE	VLG
VILLAGES	VLGS
VILLE	VL
VISTA	VIS
WALK	WALK
WALKS	WALK
WALL	WALL
WAY	WAY
WAYS	WAYS
WELL	WL
WELLS	WLS

Appendix I SHAPEFILE NAMES

County-based shapefiles exist for use within GUPS. Participants need not worry about opening these files independently from GUPS. The information in this section serves as basic metadata about the files used by GUPS. Not all files listed below appear in each county’s data. For example, the Consolidated Cities layer only exists in counties with that type of geography.

PVS_18_v2_<layername>_<SSCCC>.shp, where <SSCCC> is the number corresponding FIPS number for the state and county, (e.g. “24001” corresponds to Allegany County, Maryland) and <layername> is the abbreviation for the shapefile layer, describe in detail below.

For example, PVS_18_v2_curtracts_24001.shp is the current census tract shapefile layer for Allegany County, Maryland. The source of the current census tracts is still the 2010 geography, but if spatial updates occurred to the 2010 census tracts, they exist in this layer, not the tract2010 layer. Files in this set of shapefiles correspond to the 2010 geographies vintage in GUPS.

Table 68: County Shapefiles Names (PVS_18_v2_)

Shapefile Layer	<layername>
American Indian Areas (AIA) – Legal	aial
American Indian Areas (AIA) – Statistical	aias
American Indian Tribal Subdivisions (AITS) - Legal	aitsl
American Indian Tribal Subdivisions (AITS) - Statistical	aitss
Alaska Native Regional Corporations (ANRC) – State 02 only	anrc
Area Landmark	arealm
Block Area Groups	bag
Block Groups	bg
Metropolitan Statistical Area/Metropolitan Statistical Area	cbsa
Census County Divisions	ccd
Congressional Districts	cd
Census Designated Place	cdp
Consolidated Cities	concity
Counties and Equivalent Areas	county
Census Tracts - Current	curtracts
All Lines	edges
Elementary School Districts	elsd
Topological Faces (2-cells with all geocodes)	faces
Hawaiian Home Lands (HHL) – State 15 only	hhl
County Subdivisions - Legal	mcd
New England City and Town Areas	necta
Offsets	offset

Shapefile Layer	<layername>
Incorporated Places	place
Point Landmarks	pointlm
2010 Public Use Microdata Areas	puma2010
Secondary School Districts	scsd
State Legislative Districts Lower	sldl
State Legislative Districts Upper	sldu
Subbarrios – State 72 only	submcd
Census Blocks - Current	tabblock
2010 Census Blocks	tabblock2010
2010 Traffic Analysis Delineation	tad2010
2010 Traffic Analysis Zones	taz2010
2010 Census Tracts	tracts2010
Census Urban Areas	uac
Urban Growth Area	uga
Unified School Districts	unsd
Hydrography - Area	water
Relationship Tables	<layername>
Address Ranges	addr
Topological Faces - Area Landmark Relationship	areafaces
Topological Faces - Area Hydrography Relationship	hydrofaces
Linear Feature Names - Fielded	allnames

PVS_18_v3_<layername>_<SSCCC>.shp correspond to the 2020 proposed plans in GUPS. They follow the same naming convention as the v2 files. Only four layers exist for this version of shapefiles geography: block groups, census tracts, edges, and faces.

Table 69: County Shapefile Names (PVS_18_v3_)

Shapefile Layer	<layername>
Block Groups	bg
Census Tracts - Current	curtracts
All Lines	edges
Topological Faces (2-cells with all geocodes)	faces

Figure 24 shows an example of a Windows Explorer window with the PVS_18_v2 and PVS_18_v3 county shapefiles.

Appendix J SHAPEFILE LAYOUTS

This appendix includes several tables with the most common shapefiles used in 2020 Census PSAP and their file layout.

Table 70: Edges Shapefile (PVS_18_v2_edges)

Attribute Field	Length	Type	Description
FID	10	Integer	Feature ID
Shape	8	String	Type of shape (Polyline)
STATEFP	2	String	FIPS State code
COUNTYFP	3	String	FIPS County code
TLID	10	Integer	TIGER/Line Permanent Edge ID
TFIDL	10	Integer	TIGER/Line Permanent Face ID (left)
TFIDR	10	Integer	TIGER/Line Permanent Face ID (right)
MTFCC	5	String	MAF/TIGER Feature Classification Code
FIDELITY	1	String	Indication to a respondent when their entity boundary has changed through spatial enhancement
FULLNAME	40	String	Decoded feature name with abbreviated qualifier, direction, and feature type
SMID	22	Double	Spatial Tmeta ID
SMIDTYPE	1	String	Spatial type
BBSPLG	1	String	Redistricting Data Project participant's submitted request of an EDGE for selection as a block boundary
CBBFLG	1	String	Indicates the status of an EDGE for a selection as a block boundary
BBSP_2020	1	String	New BBSP flag
CHNG_TYPE	4	String	Type of linear feature update
JUSTIFY	150	String	Justification of change
LTOADD	10	String	Left To address
RTOADD	10	String	Right To address
LFROMADD	10	String	Left From address
RFROMADD	10	String	Right From address
ZIPL	5	String	Left 5-digit ZIP Code
ZIPR	5	String	Right 5-digit ZIP Code
EXTTYP	1	String	Extension type
MTUPDATE	10	Date	Date of last MAF/TIGER update to the edge
RTTYP	1	String	Route type
GUPS	80	String	Used internally by GUPS during digitizing

Table 71: Address Ranges Attribute File (PVS_18_v2_addr)

Attribute Field	Length	Type	Description
OID	8	String	Object ID
TLID	10	Integer	TIGER/Line Permanent Edge 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 of feature indicator flag (L or R)
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 72: Block Groups Shapefile (PVS_18_v2_bg)

Attribute Field	Length	Type	Description
FID	10	Integer	Feature ID
Shape	7	String	Type of shape (Polygon)
STATEFP	2	String	FIPS State code (48)
COUNTYFP	3	String	FIPS County code (251)
TRACTCE	6	String	Census tract code (130204)
BLKGRPCE	1	String	Block group code (1)
BLKGRPID	12	String	STATEFP, COUNTYFP, TRACTCE, and BLKGRPCE (482511302041)
CHNG_TYPE	2	String	Code for type of area update (E, B, M, and G)
EFF_DATE	8	Date	Effective date
BGTYP	1	String	Block group characteristic flag
RELATE	120	String	Relationship description
JUSTIFY	150	String	Justification of change to attribute of block group
VINTAGE	2	String	Vintage updated with returned data
POP10	10	Integer	2010 population count
HOUSING10	10	Integer	2010 housing unit count
TRACTID	11	String	STATEFP, COUNTYFP, and TRACTCE (48251130204)
SITE_NAME	100	String	Special use block group name
JSTFY_CNTG	150	String	Justification entered by participant to retain noncontiguous statistical geography
JSTFY_SLU	150	String	Justification entered by participant for a special use measurement threshold
EDITED	1	String	GUPS updates to indicate an edit by the participant

Table 73: Census Tracts - Current Shapefile (PVS_18_v2_curtracts)

Attribute Field	Length	Type	Description
FID	10	Integer	Feature ID
Shape	7	String	Type of shape (Polygon)
STATEFP	2	String	FIPS State code (48)
COUNTYFP	3	String	FIPS County code (251)
TRACTCE	6	String	Census tract code (130204)
NAME	100	String	TRACTCE, decimal point, and two-digit suffix (if applicable) (1302.04)
TRACTID	11	String	STATEFP, COUNTYFP, and TRACTCE (48251130204)
NEW_CODE	6	String	Newly generated census tract code following change
CHNG_TYPE	2	String	Code for type of area update (E, M, B, and G)
EFF_DATE	8	Date	Effective date
TRACTTYP	1	String	Census tract characteristic flag
RELATE	120	String	Relationship description
JUSTIFY	150	String	Justification of change to attribute of census tract
TRACTLABEL	7	String	Name
VINTAGE	2	String	Vintage updated with returned data
POP10	10	Integer	2010 population count
HOUSING10	10	Integer	2010 housing unit count
SITE_NAME	100	String	Special use census tract name
JSTFY_CNTG	150	String	Justification entered by participant to retain noncontiguous statistical geography
JSTFY_SLU	150	String	Justification entered by participant for a special use measurement threshold
JSTFY_NAME	150	String	Justification entered by participant when the name is changed
JSTFY_RES	150	String	Justification entered by participant for a reservation related issue

Table 74: Census County Divisions Shapefile (PVS_18_v2_ccd)

Attribute Field	Length	Type	Description
FID	10	Integer	Feature ID
Shape	7	String	Type of shape (Polygon)
STATEFP	2	String	FIPS State code
COUNTYFP	3	String	FIPS County code
COUSUBFP	5	String	FIPS 55 County Subdivision code
NAMELSAD	100	String	Name with translated LSAD
COUSUBNS	8	String	ANSI feature code for the county subdivision
LSAD	2	String	Legal/Statistical Area description
FUNCSTAT	1	String	Functional status
CLASSFP	2	String	FIPS 55 Class code describing an entity
CHNG_TYPE	2	String	Code for type of area update (E, M, B, and G)
RELATE	120	String	Relationship description
JUSTIFY	150	String	Justification of change
NAME	100	String	Entity name
VINTAGE	2	String	Vintage updated with returned data
JSTFY_CNTG	150	String	Justification entered by participant to retain noncontiguous statistical geography
JSTFY_NAME	150	String	Justification entered by participant when the name of the statistical geography is changed

Table 75: Census Designated Place Shapefile (PVS_18_v2_cdp)

Attribute Field	Length	Type	Description
FID	10	Integer	Feature ID
Shape	7	String	Type of shape (Polygon)
STATEFP	2	String	FIPS State code
COUNTYFP	3	String	FIPS County code
PLACEFP	5	String	FIPS 55 Place code
PLACENS	8	String	ANSI feature code for the place
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 and entity
PARTFLG	1	String	Indicates if only part of a feature is represented (Y or N)
CHNG_TYPE	2	String	Code for type of area update (E, B, G, and X)
EFF_DATE	8	Date	Effective date or vintage
RELATE	120	String	Relationship description
JUSTIFY	150	String	Justification of change
NAME	100	String	Entity name
VINTAGE	2	String	Vintage updated with returned data
POP10	10	Integer	2010 population count
HOUSING10	10	Integer	2010 housing unit count
JSTFY_NAME	150	String	Justification entered by participant when the name of the statistical geography is changed