

Formatting Notes:

Text in *italics* represents text that participants will see on the slide.

Slide 1 - Introduction

Hello, welcome to the Participant Statistical Area Program Standard Geographies Webinar. Over the next 2 hours, we will discuss participation in the 2020 Participant Statistical Area Program, or PSAP.

Slide 2 - Agenda

This presentation will provide you with an overview of the PSAP program, the PSAP schedule, materials for your PSAP submissions, and an overview of standard statistical geography. It also provides an introduction to the Geographic Update Partnership Software, or GUPS, a technical demonstration of GUPS, an overview of the Secure Web Incoming Module or SWIM, and information on assistance that is available to you for your PSAP submission.

Slide 3 – PSAP Overview

PSAP is a once a decade program which *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.*

The Census Bureau uses these statistical geographies to tabulate and disseminate data for the Decennial Census, the Economic Census, and the American Community Survey (ACS).

With the 2020 Census rapidly approaching, PSAP gives participants the opportunity to review and update their statistical geographies, which in turn allows the Census Bureau to provide relevant statistics for those areas. PSAP allows the Census Bureau to provide statistics for local governments and data users who often need data for planning by smaller, statistical geographic areas.

PSAP is a county-based program. Participants review and submit updates for a whole county or counties. We recognize that, in some parts of the country, such as New England, the official PSAP participant may be a town- and city-based regional planning agency or council of governments. In such cases, multiple planning organizations may exist within a single county and often cover parts of multiple counties. For PSAP purposes, we have designated one agency to be the official participant for each individual county, with responsibility for coordinating review and submission of updates to the Census Bureau. In other words, a regional planning agency encompassing towns in two counties might be the official participant for one of those counties. A different regional planning agency might be the official participant in the other county. Both agencies may need to collaborate on review and update, with each then returning updates for the county for which they were the official primary participant.

Slide 4 – PSAP Overview: Participants’ Responsibilities

The official primary participant is responsible for:

- Coordinating review and update of statistical area boundaries, and then returning those updates to the Census Bureau.
 - Engaging with and including other stakeholders in the review process.
 - Ensuring that the areas submitted to the Census Bureau meet the needs of a variety of data users in the local area.
 - Because of the decision to no longer define traffic analysis zones for the Census Transportation Planning Products (CTPP), transportation planners should be consulted during the PSAP delineation phase, particularly with regard to special use census tracts and special use block groups. The changes we made to criteria for special use census tracts and block groups were based on comments from the transportation planning community and their interest in identifying employment centers. For this reason, it’s important to include transportation planners in the review and update of census tracts and block groups.
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Slide 5 – PSAP Overview: Engaging Other Stakeholders

Census Bureau statistical areas are a “shared resource” that are most relevant when they reflect the needs of a variety of data users at the local level. And, keep in mind that census tracts are increasingly used by analysts and researchers nationwide who are interested in data for small geographic areas.

- Examples of other stakeholders include:
 - Other municipal, town/township, county, or regional planning departments.
 - Economic development authorities.
 - Chambers of commerce and other business-related groups.
 - Academic researchers.
 - Civic associations (especially regarding census designated places).
 - How to engage:
 - Notify local stakeholders about the start of PSAP and request input. The Census Bureau does not have a specific process that you must follow for notifying stakeholders. Please feel free use any existing methods you have for communicating with other groups within your area.
 - Organize meetings to discuss analytical needs and solicit suggested changes.
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Slide 6 – PSAP Schedule

The PSAP delineation phase begins in January 2019 with the delivery of delineation materials.

Participants have a maximum of 120 days, from 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 and includes preparation of materials to send to participants in time for the verification phase, which begins in January 2020. Participants have 90 days to verify that the final boundaries of PSAP geographies are correct.

A final closeout occurs after the conclusion of the verification phase. All tabulation geographies for the 2020 Census are finalized in October 2020.

Slide 7 – Return Postcard

An important item enclosed with the delineation materials is the delineation phase postcard.

After comparing 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 30 days of receipt of the delineation phase materials.

If you discover changes are necessary to your 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.

Slide 8 – Census Bureau Internal Review

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 and help reduce respondent burden. This is a new component of the 2020 PSAP, based on feedback and lessons learned from the 2010 PSAP.

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).*

The Census Bureau recommends participants review the 2020 proposed plan. Participants may review and agree with the 2020 proposed plan or they may adjust that plan. Taking this approach may streamline the review and update process, if any updates are required. Use of the 2020 proposed plan ensures consistency of review.

It should be noted that the 2020 proposed plan is just a recommendation and Census Bureau geography staff do not know the specific data needs of your community. PSAP participants should only accept the 2020 proposed plan after a complete, proper review.

Slide 9 – Materials

The Census Bureau provides specialized materials for participants conducting PSAP work.

To support your review and update of your 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.

In addition, we will provide Microsoft Excel files of proposed changes for census tracts and block groups for all counties. We will discuss this further in the presentation.

The Census Bureau provides all informational and instructional materials in digital format. The digitally formatted materials are located 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.

We have included a table in the respondent guide listing each piece of informational and instructional material distributed by the Census Bureau and identifying the participants receiving those materials.

Slide 10 – Proposed Changes Files

- The Census Bureau is providing a Microsoft Excel file containing a list of changed statistical entities.
 - This file is the output from the Census Bureau’s internal review.
 - This file appears on the “data disc” and is available online for download.
 - The file contains census tracts that have been split or merged, or have had code/type changes and census tracts with modified block groups.
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Slide 11 – Statistical Geography Overview

The goal of PSAP is to produce **meaningful statistical geographies** for data users while maintaining consistent statistical geography nationwide. As we mentioned, statistical geographies are a shared resource. While they initially served the needs of local planners, researchers, and analysts, they now are used in nationwide analysis by a variety researchers, organizations, and government agencies.

The Census Bureau classifies two types of geographies: legal and statistical geography.

Statistical geographies are *areas defined solely for data collection, tabulation, dissemination, and analysis*. That said, we recognize that statistical geographies—census tracts, especially—are used in a variety of federal programs. Though it is tempting to want to change boundaries to meet the needs of a

particular program, please be aware that a change that may have a positive effect for one program may have a negative impact on another. It is better to maintain the statistical objectivity and comparability of areas, updating areas to meet the general analytical needs of as many data users as possible.

Some statistical geographies *represent areas that do not have legally defined boundaries or are surrogates for legal entities. For example, some quasi-municipal special taxation districts are defined as census designated places (CDPs). Examples include Friendship Heights Village, Maryland; Paradise and other “unincorporated towns” in Nevada; and Dakota Dunes, South Dakota.*

Other statistical geographies may be *representations of entities that have (or had) a legal existence, but may lack clear boundaries or may not fit within an agency’s definition of legal entities. For instance, a municipality that disincorporated, but still is recognizable as a known place, may be defined as a CDP in order to maintain data continuity.*

Slide 12 – Statistical Geography Boundaries

Statistical Geography boundaries generally follow permanent, visible features that are identifiable in the field.

Boundaries *should*:

- *Follow visible features whenever possible.*
- *Use significant/major features on landscape.*
- *Align to legal geography where a relationship has been established and is unlikely to change over the decade due to changes in the legal entity’s boundary.*
- *Follow legal conjoint boundaries, where applicable.* For example, given the stability of city and town boundaries in the Northeast, census tract boundaries may align with the boundaries of a city or town. With census designated places, it is preferable to align with a city boundary than to leave a small gap between the two places.
- *Reflect current land use patterns where possible.*

Boundaries *should not*:

- *Cut through housing and other buildings.*
- *Include “zig-zags” and sharp angles for no purpose.*
- *Group disparate land use types for no reason.*
- *Make use of less prominent features when a more significant feature could be used.*

Slide 13 – Standard Statistical Geographies

The next series of slides provide overviews of census tracts, block groups, census designated places, and census county divisions, as well as their criteria, thresholds and guidelines.

Slide 14 – 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.

Their boundaries should remain consistent from one census to another to facilitate comparison of data over time. We will illustrate this process shortly, but first, let's review census tract criteria.

Slide 15 – Census Tract Criteria

The following criteria apply to census tracts in the United States, Puerto Rico, and the Island Areas:

- *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.*
 - *Exceptions to the compactness requirement might include areas with unique population groups, land uses, or settlement patterns, such as coastal communities, a community ringing a lakeshore, valley settlements, and commercial and industrial development along a linear transportation route defined as a special use census tract.*
- *Census tract boundaries should follow visible and identifiable features.*
- *Census tracts must have a basic numeric identifier composed of no more than four digits and may have a two-digit decimal suffix.*

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.

Census tracts must meet specific population and housing unit thresholds outlined on the next slide **Census Tract Thresholds**.

Slide 16 - Census Tract Thresholds

Census tracts, with the exception of special use tracts, must meet specified population or housing unit thresholds as outlined in this table.

Meeting specific thresholds helps ensure a minimal level of reliability in sample data as well as availability of data when disclosure avoidance methodologies are applied.

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, 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 with a reference date of April 1, and may be lower than populations at other times of the year.

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. This helps the Census Bureau with review of submitted geographies as well as answering questions from data users who are familiar with the 4,000 person optimum population.

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.

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.

Slide 17 – Census Tracts – 1990

The following three slides illustrate population growth in South Jordan, UT over the last three decades and the way in which tracts were split to reflect the growth and adhere to population thresholds as well as the ability to compare statistics over time. Note also the way in which tract codes change—particularly suffixes—as the splits occur.

Slide 18 – Census Tracts - 2000

For the Census 2000, notice that each of the original four census tracts from 1990 have split three times. There were 12 census tracts where there were four in 1990. It is also important to notice that the external boundaries of the original four census tracts from 1990 are maintained with the splits.

- 1130.03 became 1130.07, 1130.08, and 1130.09.
- 1130.04 became 1130.10, 1130.11, and 1130.12.
- 1130.05 became 1130.13, 1130.14, and 1130.15.

- 1130.06 became 1130.16, 1130.17, and 1130.18.
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Slide 19 – Census Tracts – 2010

South Jordan, UT, continued to experience growth in some areas between 2000 and 2010. You should be able to see the increase in population, especially in tract 1130.09, when comparing this slide with the previous slides. There are still 12 census tracts in the county, but there were modifications made to two of the census tracts.

- 1130.09 split to form 1130.19 and 1130.20, reflecting substantial population growth.
 - The participant in this area also chose to merge census tracts 1130.15 and 1130.18 forming a new census tract, 1146. Because there was no previous tract comparable to the tract formed from the merger, and because changes in suffix generally indicate that a split has occurred, the participant chose to assign a new tract code. Changes of this nature are permitted exceptions to the rule, but be aware that they can cause confusion among users of census tract data. Please document the reasons for such changes so that the Census Bureau can answer data user questions.
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Slide 20 – Block Groups – Overview

Block groups are *statistical geographic subdivisions of a census tract defined for the tabulation and presentation of data from the decennial census, the ACS, and selected other statistical programs.*

Block groups nest within, and completely cover, census tracts nationwide.

They form the geographic framework within which the Census Bureau defines and numbers census tabulation blocks.

The block group number becomes the first digit of the four-digit tabulation block.

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 composed of water).

They are the smallest geographies for which the Census Bureau provides sample data, from the ACS 5-year period estimates.

Slide 21 – Block Groups – Criteria

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

- *Must not cross census tract boundaries.*
- *Must cover the entire land and water area of each census tract.*
- *Must comprise a reasonably compact and contiguous land area, with a few exceptions.*

- As with census tracts, exceptions might include areas with unique population groups, land uses, or settlement patterns, such as coastal communities, a community ringing a lakeshore, valley settlements, and commercial and industrial development along a linear transportation route defined as a special use block group.
 - *Must meet specific population and housing unit thresholds and suggested area and employment thresholds.*
 - *Boundaries should follow visible and identifiable features.*
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Slide 22 – Block Group – Thresholds

Block groups must meet specified population (600-3,000) and housing unit (240-1,200) thresholds as outlined in this table. This helps ensure a minimum level of reliability in sample data as well as availability of data when disclosure avoidance methodologies are applied.

Like census tracts, the Census Bureau uses a 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.

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. Again, this assists the Census Bureau in its review of submitted block groups as well as when answering questions from data users familiar with block group thresholds.

Unlike census tracts, block groups may be completely redefined to meet local analytical needs; 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.

Slide 23 – Statistical Geography Relationships

So to recap: census tracts subdivide and nest within counties; block groups subdivide and nest within tracts; and blocks nest within block groups.

Slide 24 – Census Designated Places (CDPs) – Overview

Census designated places (CDPs) are *statistical geographic entities representing closely settled, unincorporated communities that are locally recognizable 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.

Slide 25 – Census Designated Places (CDPs) – Criteria

- *Must constitute a single, named, closely settled concentration of population.*
 - *Must generally consist of single piece of territory with a mix residential, commercial and other uses similar to that of an incorporated place of similar size.*
 - *No minimum population or housing unit thresholds, but must contain some population, housing units, or both.* The presence of population, housing, or both is critical to the existence of the kinds of places we want to represent as CDPs.
 - *Names should be recognizable and used in daily communication by the residents of the community it represents. The name of a CDP should be based on locally known features or landmarks.* 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.
 - *A CDP cannot have the same name as an adjacent or nearby incorporated place.*
 - *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.* Boundaries may follow other nonvisible features in instances where reliance upon visible features would result in overbounding of the CDP in order to include housing units on both sides of a road or street feature.
 - *May cross county boundaries, but must not cross state boundaries.*
 - *Cannot be located, partially or entirely, within an incorporated place or another CDP.*
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Slide 26 – County Subdivisions

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.

The 21 states are: Alabama, Alaska, Arizona, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Kentucky, Montana, Nevada, New Mexico, Oklahoma, Oregon, South Carolina, Texas, Utah, Washington, and Wyoming. In Alaska, census subareas are county subdivisions equivalent to CCDs.

Slide 27 – Census County Divisions (CCDs) – cont'd

CCDs have been established where:

- No legal minor civil divisions (MCDs) exist.
- Legal MCDs have no administrative functions or are not known to public.
- Boundaries of MCDs change frequently.
- Statistical units – no legal function.

The Census Bureau discourages major revisions to CCDs since the primary goal of the CCD program over the past 50 years 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. Otherwise, names of existing CCDs should not be changed unless a compelling reason is provided.

New CCDs should be named after the largest population center or historically central place within it. A CCD may be named after a prominent physical feature or American Indian area.

Slide 28 – Census County Division (CCDs) – Criteria

Must have visible and/or stable boundaries.

Boundaries must follow state and county boundaries and conform to census tract boundaries.

Boundaries may follow the boundaries of federally recognized AIRs, and federal, state, or locally managed land.

Boundaries may follow conjoint city limits (where change to the boundary is infrequent).

Boundaries may follow some nonstandard visible features such as major ridgelines, aboveground pipelines, intermittent streams, or fence lines.

Boundaries may follow some nonstandard nonvisible features such as parcel boundaries, straight-line extensions and other lines-of-sight between acceptable visible features.

Slide 29 – Geographic Update Partnership Software – GUPS

GUPS is the *tool for PSAP response*. It 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 by online download.

Slide 30 – GUPS – System Requirements

Disk space needed to run: 3.3GB.

RAM: 4GB minimum.

Operating system: Windows 7, 8, or 10.

Slide 31 – GUPS Installation

GUPS can be downloaded directly from the PSAP website or it can be sent to a participant on DVD. It should be noted that administrative privileges may be needed in order to install this software on your machine. Please consult your local system administrator prior to contacting the Census Bureau for installation assistance.

If participants chose the "DVD GUPS and SHAPEFILES" selection during registration, 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 during registration, they must navigate to the following website to download GUPS: <https://www2.census.gov/geo/pvs/gups/>.

At the end of the presentation, please take note of the help desk phone line used for GUPS and general PSAP troubleshooting.

To access the shapefiles to perform the PSAP review, the Census Bureau recommends use of the "Census Web" option within GUPS. This option is the easiest way to load the files into GUPS. For those that may have poor internet connectivity (or no internet connectivity) *load the shapefiles from the "Data disc" DVD or from where you saved the files from the DVD onto your computer's hard drive.*

Slide 32 – Technical GUPS Demonstration

We will now go over how to perform different action inside of the GUPS software. Please know that only a few examples are listed in this segment of the presentation. For example, the steps for selecting a census tract are not repeated to show how to select block groups, CDPs, or CCDs. The merge of block groups steps are not repeated to show a merging of census tracts. The respondent guide includes all of the details for each GUPS action used for 2020 PSAP. Consult it for detailed instructions.

- Opening GUPS.
 - Map Management Window.GUPS Interface.
 - Standard and PSAP Toolbars.
 - Add Linear Feature.
 - Delete Linear Feature.
 - Modify Area Feature Tool.
 - Select Census Tract.
 - Adding Imagery.
 - Split Census Tract By Block Group.
 - Merge Block Group.
 - Boundary Change – Add Area (CDP).
 - Quality Control Checks
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Slide 33 – Opening GUPS

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. The QGIS splash screen appears.

Wait until the application loads an older computer may require a few minutes. When the GUPS application has successfully loaded, the main page opens, and the QGIS Tips! window appears.

Since QGIS provided the open-source platform for building GUPS, participants may see references to QGIS in several locations within the GUPS application.

Slide 34 – Map Management Window

When you begin a project in GUPS, the Map Management window will appear.

- 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.

At this point, the participant has not selected how to open these files, so the window populates with all of the counties within the state. The highlighted counties are the counties adjacent to the working county.

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. The Select Data Folder, Directory or Location dialog box opens, as shown on the right side of the slide. Three choices appear:

- 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).

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.

In the Select Data Folder, Directory or Location dialog box drop-down menu, select the location to pull the working county file.

GUPS downloads all the shapefiles necessary for PSAP 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.

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, the working county appears in the Map View and layers are visible within the Table of Contents.

[Slide 35 – GUPS Overview Image](#)

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.

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.

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.

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.

The Status bar displays information on the coordinates, map scale, magnification, rotation, and projection and allows for the adjustment of the display.

Slide 36 – 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.

The Standard toolbar, 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. 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.

The PSAP toolbar, 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.

1. 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.
2. The second sub-toolbar contains buttons for conducting geography and PSAP criteria reviews.
3. The third sub-toolbar contains buttons for importing shapefiles, exporting the map to a zip file, and exporting a map to print.
4. The fourth sub-toolbar contains buttons for adding an internet map service and adding imagery.

(Colors correspond to image on slide)

Slide 37 – Add Linear Feature

The addition of new or missing linear features may be necessary to form faces in order to modify 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.

Slide 38 – Delete 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.

[Slide 39 - Modify Area Feature Tool](#)

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.

- *It 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 other criteria.*
 - *It enables participants to perform specified actions such as merge, boundary change and split to entities to meet criteria and thresholds.*
 - *It is the main tool for use in making changes to statistical geographies.*
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[Slide 40 – Table](#)

This table 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.

[Slide 41 – Select Census Tract – Step 1](#)

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.

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.

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.

[Slide 42 – Select Census Tract – Step 2](#)

Click the Modify Area Feature button to start editing the layers within the selected county.

[Slide 43 – Select Census Tract – Step 3](#)

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.

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.

Slide 44 – Select Census Tract – Step 4

The Modify Area Feature dialog box displays in the center of the screen.

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.

Slide 45 – Select Census Tract – Step 5

Within the Modify Area Feature window, click the Geography drop-down menu to select Census Tract.

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.

Slide 46 – Adding Imagery

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 Map View.

Slide 47 – 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).

Slide 48 – Split Census Tracts by Block Group – Step 1

Within the Modify Area Feature window, click the Filter drop-down menu to select Above Maximum (POP > 8000 or HU > 3200). 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 Block Group. This allows participants to split the census tract by block group(s).

Slide 49 – Split Census Tracts by Block Group – Step 2

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. The Map View zooms to the selected census tract to review for potential splitting and highlights it in light blue/green color.

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

Slide 50 – Split Census Tracts by Block Group - Step 3

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

Slide 51 – Split Census Tracts by Block Group – Step 4

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

Slide 52 – Split Census Tracts by Block Group – Step 5

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.

This step depicts imagery.

To reverse the split, use the Undo button prior to saving. Once edits have been saved they cannot be undone.

Slide 53 – Split Census Tracts by Block Group – Step 6

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).

Again, once edits have been saved they cannot be undone.

[Slide 54 – 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.

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.

[Slide 55 – Merge Block Groups – Step 1](#)

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.

[Slide 56 – Merge Block Groups – Step 2](#)

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.

[Slide 57 – Merge Block Groups – Step 3](#)

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.

The newly selected block group(s) 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.

[Slide 58 – Merge Block Groups – Step 4](#)

If the selected block group(s) generate a valid new block group, click the Merge button to create a new block group.

[Slide 59 – Merge Block Groups – Step 5](#)

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.

[Slide 60 – Merge Block Groups – Step 6](#)

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).

[Slide 61 – 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, 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.

[Slide 62 - Boundary Change – Add Area \(CDP\) – Step 1](#)

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

[Slide 63 - Boundary Change – Add Area \(CDP\) – Step 2](#)

Double click to select a CDP from the Info column within the Modify Area Feature window.

The Map View zooms to the selected CDP to review and highlights it.

[Slide 64 - Boundary Change – Add Area \(CDP\) – Step 3](#)

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.

[Slide 65 - Boundary Change – Add Area \(CDP\) – Step 4](#)

Click the Add Area button to apply boundary change (addition of faces/areas) to the selected CDP.

Slide 66 - Boundary Change – Add Area (CDP) – Step 5

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 slide explains the process for removing area from a CDP.

Slide 67 - Boundary Change – Add Area (CDP) – Step 6

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).

Slide 68 – 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.

Slide 69 – Review Change Polygon 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.

Slide 70 – 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.

[Slide 71 – Exporting Data](#)

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 exporting for Census, 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.

[Slide 72 – 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.

SWIM is the official web portal for uploading materials to the Census Bureau. Other programs use SWIM to upload information. SWIM accounts are people-based, not entity or program based. SWIM account creation requires a 12-digit token provided by the Census Bureau with the delineation materials. SWIM only accepts .zip files (which is all that are created by using GUPS for PSAP) and the file size limitation for the .zip file is 250 megabytes. We do not anticipate PSAP participants will encounter this file size limit.

[Slide 73 – SWIM Account Login and Welcome Screens](#)

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.

[Slide 74 – SWIM Account Registration Screens](#)

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.

[Slide 75 – SWIM Start New Upload Screen](#)

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.

[Slide 76 – SWIM Type of Geography Screen](#)

The “What type of geography are you reporting statistical areas for?” screen opens. 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.

[Slide 77 – SWIM Select a .zip file to Upload](#)

Following the selection of the geography 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\gupsgisdata\psap20\output” folder on the default drive selected during installation. This is likely the “C:” drive.

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.

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.

[Slide 78 – SWIM Thank You Confirmation Screen](#)

The Thank You screen appears. It thanks the participant and indicates a forthcoming email once transfer completes.

[Slide 79 - 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.

Slide 80 – 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.

Slide 81 – 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.

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.

Slide 82 – 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.

[Slide 83 – 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.

[Slide 84 – PSAP Website](#)

The PSAP Website is a one stop shop for everything PSAP related. The PSAP Website can be used to:

- Download GUPS.
 - Download Respondent Guides.
 - Access the proposed changes file.
 - View the webinar schedules.
 - Everything else you need to know about PSAP!
-

[Slide 85 – Support and Assistance](#)

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.

For questions concerning technical problems with the GUPS application or specific programmatic questions, support is available by telephone at (844)788-4921 and email at <geo.psap@census.gov>.

[Slide 86 – Connect With Us](#)

For those interested in social media and other ways to stay informed, this slide depicts the various methods to connect with the Census Bureau through alerts, memorandums, Facebook, Twitter, YouTube, Instagram, and Pinterest.
