

**Boundary and Annexation Survey
Tribal Respondent Guide: Digital BAS**

Issued January 2013

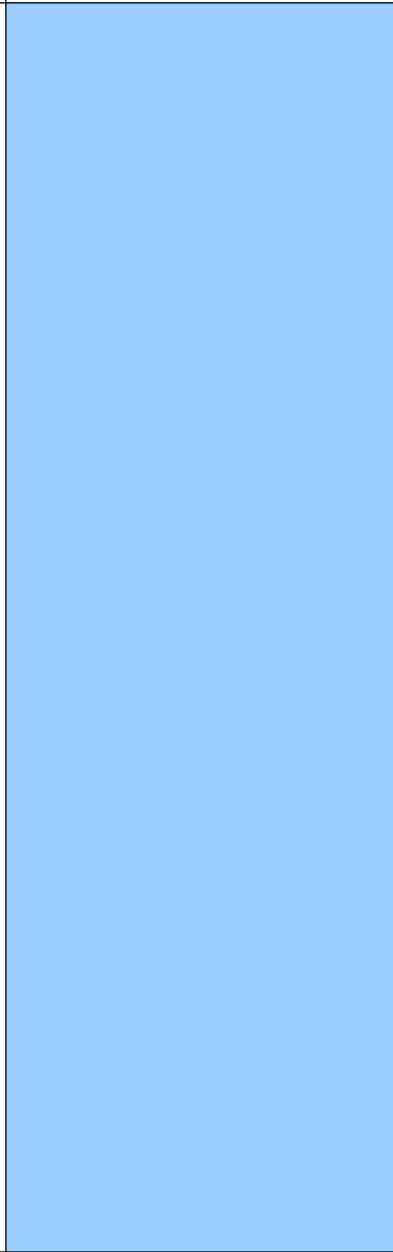


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1. Introduction to the Digital Boundary and Annexation Survey (BAS)

1.1 Overview of the Tribal BAS

The U.S. Census Bureau conducts an annual survey called the Tribal Boundary and Annexation Survey (BAS) to collect information about selected legally defined geographic areas, such as counties (and equivalent areas), incorporated places, minor civil divisions (MCDs), as well as federally recognized American Indian reservations (including off-reservation trust lands and tribal subdivisions). The BAS also provides an opportunity for participants to review the names and geographic relationships for these areas. Title 13, U.S. Census Code authorizes this survey.

The U.S. Census Bureau uses BAS information to provide a record for reporting the results of the decennial and economic censuses, and to support the American Community Survey. Maintaining correct boundaries and boundary-to-feature relationships through the BAS helps ensure that the U.S. Census Bureau assigns the appropriate population to each governmental unit (GU).

In compliance with the Office of Management and Budget Circular A-16, the BAS supports the Census Bureau's spatial data steward responsibilities for the Federal Geographic Data Committee and the Geospatial One-Stop by updating the inventory and boundaries of GUs. In addition, the BAS is the source of up-to-date information on boundaries, codes, and names for the U.S. Geological Survey's (USGS) National Map and the Geographic Names Information System, as well as the source for changes in the boundaries of incorporated places, minor civil divisions (MCDs), counties (and equivalent areas), and federally recognized American Indian areas (AIAs), which include reservations and off-reservation trust lands.

1.2 Legal Disputes

If it comes to the U.S. Census Bureau's attention that an area of tribal land is in dispute, additions or boundary corrections will not be made until supporting documents are provided. If necessary, the Census Bureau will request clarification regarding current boundaries, particularly if supporting documents pre-date 1990, from the U.S. Department of the Interior, Office of the Solicitor. Often complicated land issues require an extended period of time for resolution, and in those cases, the Census Bureau will retain the current boundary in the database until a legal opinion is issued by the Solicitor's office.

1.3 Key Dates for Tribal Digital BAS Participants

All legal changes received by **March 1** will be reflected in the American Community Survey. If the U.S. Census Bureau receives your updates by **May 31**, they will be included in your BAS materials next year.

To change the method of participation in BAS from digital to paper, or to have the MAFTIGER Partnership Software (MTPS) software mailed to you, the Census Bureau must be notified by **February 15** (for updates going into the ACS) or **April 15** (for updates to be reflected in the

next year's BAS materials). Contact the Census Bureau at 301-763-1099, or toll free at 1-800-972-5651 or by email at: **geo.aiana@census.gov**.

1.4 Tribal Digital BAS Requirements

To participate in Tribal Digital BAS, entities must meet the following requirements:

1. Have the ability to edit a Census Bureau shapefile¹. Census requires that entities update Census Bureau shapefiles with boundary and feature changes, rather than submitting a shapefile from a local Geographic Information System (GIS).
2. Current information for the tribal BAS point of contact, the person updating the shapefiles, and the tribal chair for the entity must be provided.
3. Legal documentation (such as trust deeds and court orders) and effective dates for all legal boundary changes (additions and deletions) must be provided.
4. Each non-legal boundary correction must contain proper update documentation according to boundary correction guidelines listed below, or the Census Bureau will not make the correction for this BAS cycle.

Important information about BAS 2013 non-legal boundary corrections:

Due to current resource and other budgetary constraints within the Census Bureau, the Census Bureau cannot guarantee that all boundary corrections will be processed in the same year's BAS cycle, especially in the case of very large submissions with many boundary corrections. We will continue to process all legal boundary changes, regardless of the number submitted. The Census Bureau appreciates your understanding and support in this matter.

If there are any questions or concerns about the participation requirements, contact the Geography Division Legal Areas Team at 301-763-1099, 1-800-972-5651 or geo.aiana@census.gov.

2. Topological Relationships and Spatial Accuracy

The Geography Division of the Census Bureau is responsible for developing geographic applications and executing related activities needed to support the Census Bureau in collecting and disseminating census data. For more than twenty years, the Census Bureau's TIGER database and Master Address File (MAF) have become critical resources for supporting the Census Bureau in its geographic activities.

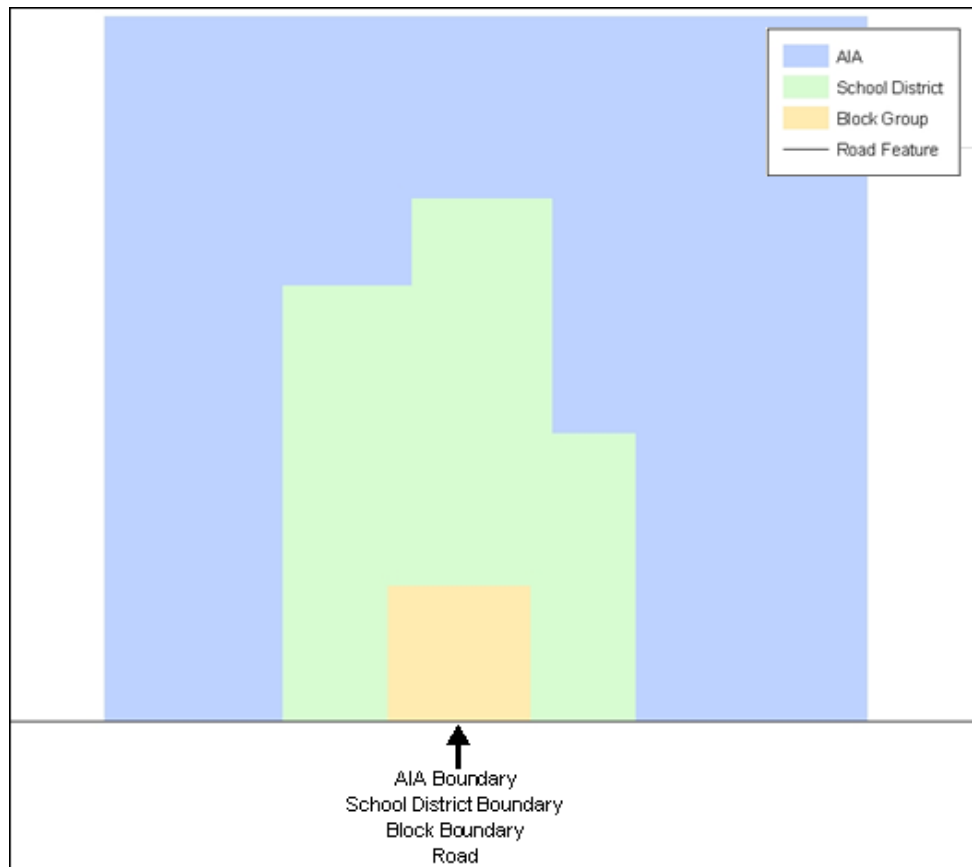
The following section will describe how the Census Bureau uses a topologically integrated system and how this differs from traditional GIS systems, which use separate layers of data.

¹ The use of brand names does not represent an endorsement of a company or its products by the U.S. government. Due to the wide use of ESRI products by our partners in the GIS community, and the ubiquitous use of the shapefile format as a medium for GIS data exchange, the Census Bureau is providing this data in shapefile format. There should be no problem when importing these shapefiles into local GIS software. However, if the GIS software being used does not contain a shapefile translator, contact the Census Bureau for further instructions (301-763-1099) or geo.aiana@census.gov.

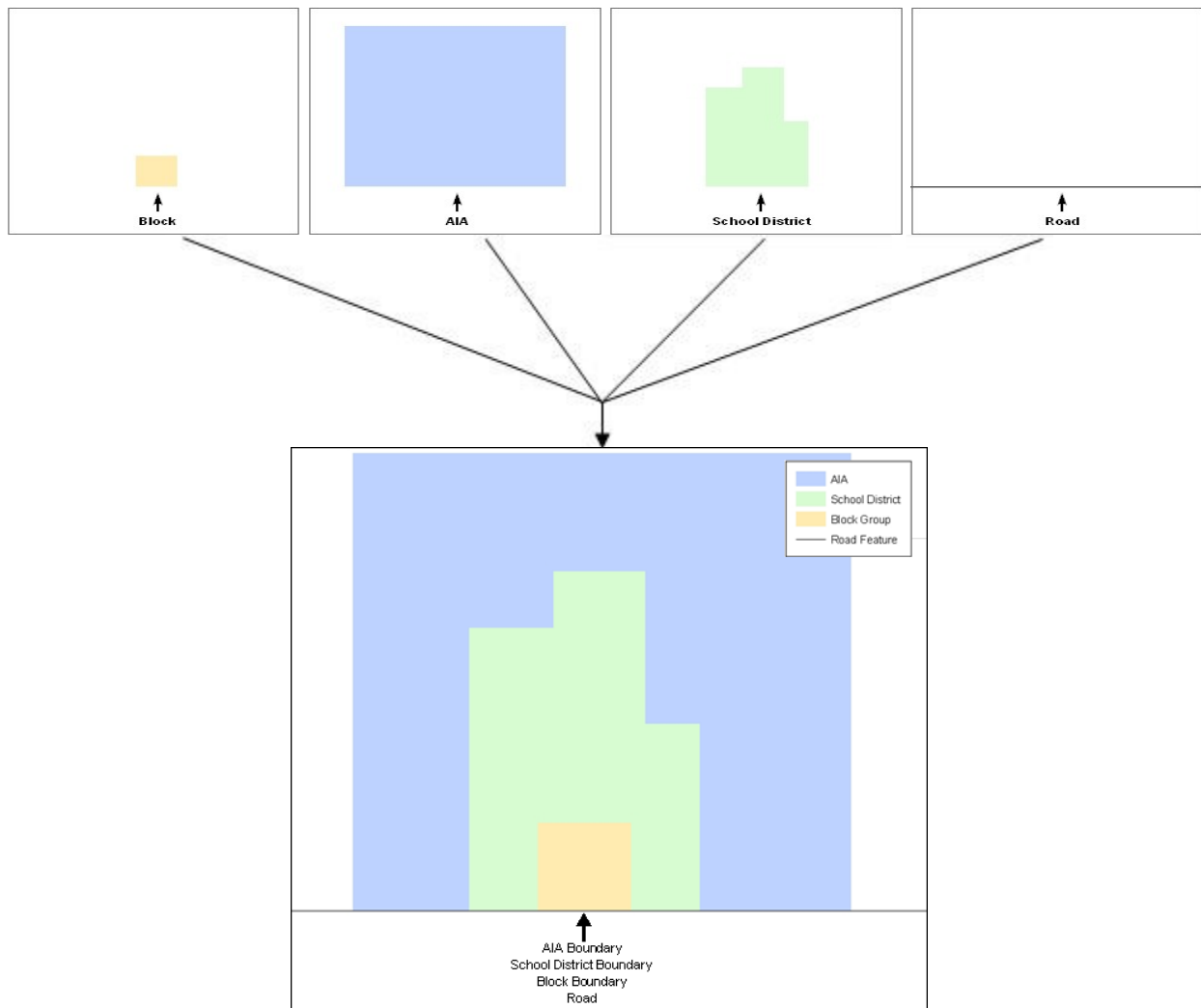
2.1 Topological Relationships in the MAF/TIGER Database

Topology can be described as the relationship between different levels of geography. MAF/TIGER is a geographic database in which the topological structures define the location, connection, and relationships of streets, rivers, railroads, and other features. These topological structures help define the geographic entities for which the Census Bureau tabulates data.

Instead of having a separate layer for each feature class (roads, boundaries, etc.) all MAF/TIGER information is stored in one layer or file. See Examples 2.1.1 and 2.1.2 for samples of topologically integrated files in MAF/TIGER.



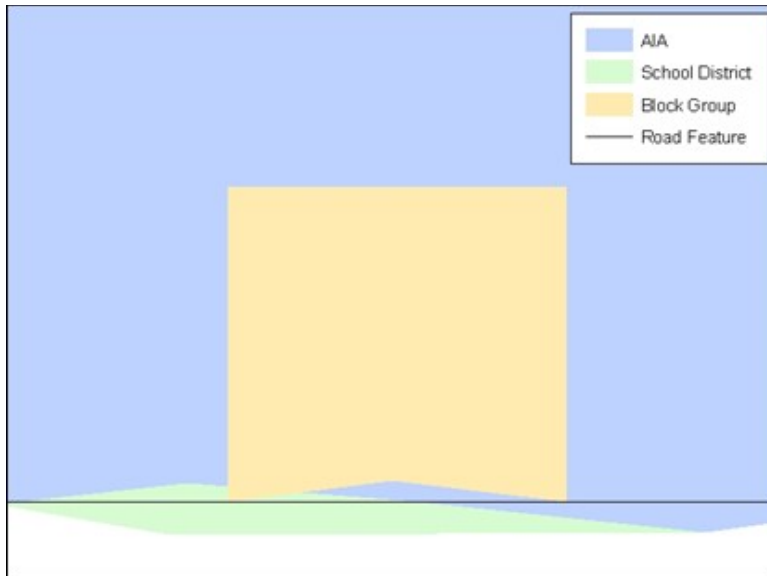
Example 2.1.1: This example shows how a road in MAF/TIGER can also represent a block boundary, American Indian Area boundary and a school district boundary.



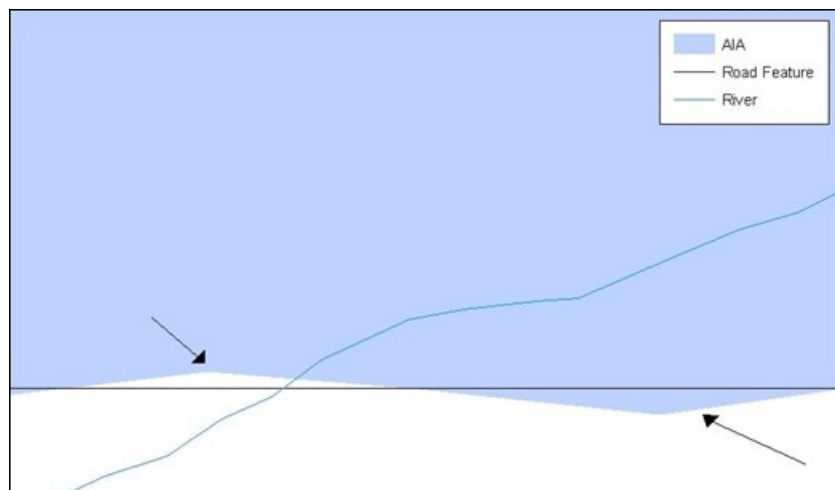
Example 2.1.2: This example shows how four different feature classes are topologically integrated into one layer. One road feature represents not only a road, but also a block boundary, American Indian Area boundary, and a school district boundary.

2.1 GIS and Spatial Accuracy

In a GIS, feature classes are usually not topologically integrated: they are separated into layers. When these layers are overlaid in a GIS, there may be misalignments in the boundaries due to the nature of the data. These non-topologically integrated layers could cause issues in the MAF/TIGER database. Examples 2.2.1 and 2.2.2 show how files that are not topologically integrated might appear in a GIS when they are overlaid.



Example 2.2.1: This example shows an overlay of four different feature classes. Notice how the topological relationship is compromised. The block, AIA, and school district boundaries, which are supposed to follow the road feature, no longer align with the road in several locations.



Example 2.2.2: This example shows a situation where a local GIS AIA boundary does not follow a road feature. Assuming that the boundary follows the road feature, changing the AIA boundary to match the local file exactly, and become misaligned (see arrows) would dissolve the topological relationship in MAF/TIGER.

The spatial differences between local GIS data and the Census Bureau’s topologically integrated file are often very small (less than ten feet) and can create boundary-to-feature relationship issues for the Census Bureau. Section 5.7 provides instructions on how to review digital submissions for small spatial boundary corrections. It also lists some of the potential consequences of making spatial boundary corrections that dissolve the topological relationships present in the MAF/TIGER database. Examples of suggested methods for correctly making boundary changes can be found in Appendices 5A and 5B.

3. Census Bureau Provided Shapefiles

The Census Bureau provides all Digital BAS participants with entity layers in ESRI shapefile format. The number of polygon-based shapefiles that the Census Bureau sends to each Digital BAS participant depends on the type of entities contained within each county. However, each participant, regardless of the number of geographic entities, receives only one shapefile for the linear feature network for each county. See Table 3.1 for the names of the shapefiles.

If the files were downloaded from Census’s website, the file names will be slightly different. The prefix will begin with **PVS** (e.g., **PVS_12_v2_edges_<ssccc>.shp**). Throughout this guide, Census uses the prefix of **bas_2013**, but the **PVS files** are exactly the same.

Shapefile Naming Convention by Entity Type

Geographic Entity Type	Shapefile Naming Convention
AIA	bas_2013_aial_<ssccc>.shp
Tribal Subdivision	bas_2013_aitsl_<ssccc>.shp
ANRC	bas_2013_anrc_<ssccc>.shp
Hawaiian Homeland	bas_2013_hhl_<ssccc>.shp
Edges (Roads, Rail, Hydro, etc.)	bas_2013_edges_<ssccc>.shp
Area Landmarks	bas_2013_arealm_<ssccc>.shp
Point Landmarks	bas_2013_pointlm_<ssccc>.shp
Hydro Area	bas_2013_water_<ssccc>.shp
Geographic Offsets / Corridors	bas_2013_offset_<ssccc>.shp

Table 3.1: Shapefile Naming Convention (Note: <ssccc> represents the two-digit state code and three-digit county code.)

All shapefiles provided by the Census Bureau are in the following unprojected geographic-based coordinate system:

- Geographic Coordinate System – North American Datum 1983 (GCS NAD83)
- Angular Unit: Degree (0.017453292519943299)
- Prime Meridian: Greenwich (0.000000000000000000)
- Datum: D_North_American_1983
- Spheroid: GRS_1980
- Semi-major Axis: 6378137.0000000000000000
- Semi-minor Axis: 6356752.314140356100000000
- Inverse Flattening: 298.257222101000020000

4. Census Bureau Geocoding

Knowledge of the Census Bureau's geocoding methods is critical for creating Tribal Digital BAS submissions correctly. There are two methods: using MAF structure points to locate addresses and locating addresses using street centerlines.

Census will assign an address to a previously located structure point if possible. If not, the address will be geocoded using street centerlines.

It is important to review Tribal Digital BAS submissions to ensure that addresses are placed correctly in relationship to the features around them, and that geographic offsets and corridors are created as needed.

5. Updating the Census Bureau Shapefiles

Census Bureau shapefiles can be updated to reflect boundary and/or linear feature changes that have occurred since the last Tribal BAS survey. Examples of these procedures are in Appendices 5A and 5B.

Note: If there are problems with the processing of returned files, Census will email a feedback document requesting clarification of any issues. If the problem cannot be resolved before the project deadline, the changes in question will not be made during the current Tribal BAS cycle.

5.1 General File Setup Guidelines

After receiving the shapefiles, follow these procedures before beginning actual updates:

- Open the CD to verify that it contains the correct shapefiles or download the correct shapefiles from the PVS download page and open the downloaded .ZIP file to verify its contents.
- Copy the shapefiles into a directory on a server/hard drive.
- Open the shapefiles with GIS software.

5.2 Changing the Map Projection

Census files are in GCS NAD83 format and can be projected into any local coordinate system/projection. Most GIS software packages will allow users to transform file coordinate systems and projections. For example, if using ArcView to update files, activate and utilize ArcView's **Projection Utility Wizard** extension. If using ArcGIS, use its **Projection Utilities** in **ArcToolbox**. MAF/TIGER shapefile extracts contain defined projection information in the *.prj file. ArcView and ArcGIS access the *.prj file for projection information so there is no need to define these parameters before changing the file coordinate systems.

When updates are complete, participants may submit the boundary shapefile using any local coordinate system/projection provided that the shapefile contains a .prj file or spatial reference materials such as metadata.

5.3 Boundary Changes

In order to update MAF/TIGER, participants must create a separate change polygon layer for each updated entity type (AIA, ANRC, tribal subdivision, or Hawaiian Homeland). The change polygons must be created in relation to the current MAF/TIGER boundary.

Appendices 5A and 5B provide two examples for creating addition, deletion, boundary correction, new entity, geographic corridor, and geographic offset change polygons. Review any boundary change polygons before submitting them (Section 5.7).

If additional shapefiles are needed, contact the Census Bureau’s Geography Division Legal Areas Team at 301-763-1099, 800-972-5651 or geo.aiana@census.gov.

5.3.1 Additions and Deletions

The Census Bureau will accept additions and deletions from AIAs, ANRCs, and Hawaiian Homelands. Each addition or deletion change polygon must have the required attributes and corresponding change type populated, as seen in Table 5.3.1.1. The Census Bureau will snap any addition or deletion to a MAF/TIGER feature when it exists within **thirty** feet of that feature.

Note: Enter the name of the jurisdiction (AIA, ANRC or Hawaiian Homeland) adding or deleting the area in the **NAME** field.

Additions and Deletions					
	NAME	CHNG_TYPE	EFF_DATE	DOCU	RELATE
Addition	X	X('A')	X	X	
Deletion	X	X('D')	X	X	

Table 5.3.1.1: Additions and Deletions (Note: 'X' = Required field)

5.3.2 Boundary Corrections

The Census Bureau will also accept specific boundary corrections from AIAs, ANRCs, and Hawaiian Homelands. As with additions and deletions, the participant must create individual change polygons for each boundary correction. Each boundary correction must also have the required attributes and corresponding change type populated, as seen in Table 5.3.2.1, or the Census Bureau will reject them.

Note: Enter the name of the jurisdiction that the boundary correction is for in the NAME field.

Boundary Corrections					
	NAME	CHNG_TYPE	EFF_DATE	DOCU	RELATE
Boundary Correction (Add Area)	X	X('B')			X('IN')
Boundary Correction (Remove Area)	X	X('B')			X('OUT')

Table 5.3.2.1: Boundary Corrections (Note: 'X' = Required field)

The Census Bureau uses a topologically integrated database. As a result, not all types of boundary corrections can be processed for inclusion into MAF/TIGER. The following are types of boundary corrections that the Census Bureau will accept, process, and update or reject during the current BAS cycle:

The Census Bureau **will** accept and process properly documented boundary corrections during the current BAS cycle.

- that spatially interact with (abut) other BAS legal changes (annexation, de-annexation, corridor, offset) and meet both of the following two conditions:
 - in situations where the existing boundary has been digitized incorrectly or appears in the incorrect location due to Census Bureau activities.
 - where the overall shape of the geographic entity is maintained and no feature-to-boundary relationships are dissolved.

The Census Bureau **will reject** boundary corrections...

- between adjacent AIAs unless there is a written agreement between the two AIAs.
- that dissolve boundary-to-feature relationships (roads, rivers, railroads, etc.) if the difference is less than thirty feet.
- which are greater than one square mile, or not contiguous with the rest of the entity boundary. These boundary corrections may be part of additions which were never reported to the Census Bureau. If so, legal documentation should be provided.
- that have a width of less than thirty feet over the entire polygon.

Note: Remember that the Census Bureau will snap any entity boundary correction to a MAF/TIGER feature when it exists within **thirty** feet of that feature.

5.3.3 New Entities

AIA participants may submit new entities (tribal subdivisions) through Tribal Digital BAS. As with other change types, an individual change polygon must be created for each new entity and possess the required attributes and the corresponding change type field must be populated (see Table 5.3.3.1). Please see Section 5.4 for more information about tribal subdivisions.

Note: Enter the name of the new jurisdiction in the **NAME** field. For required documentation for new entities, contact your Regional Census Center (see Appendices 2 and 3).

New Entities					
	NAME	CHNG_TYPE	EFF_DATE	DOCU	RELATE
New Entity	X (subdivision name)	X('E')	X (date of tribal resolution)	X (tribal resolution number)	

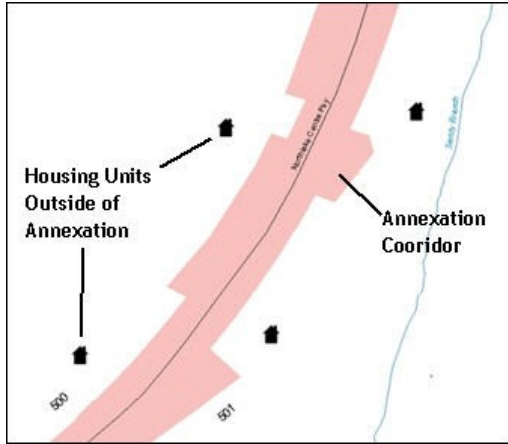
Table 5.3.3.1: New Entities (Note: 'X' = Required field)

5.3.4 Geographic Corridors

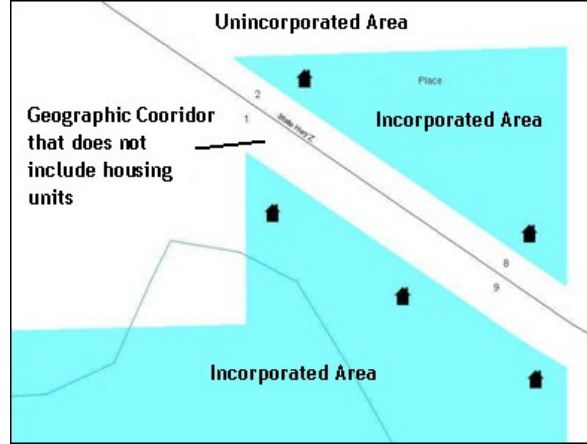
The Census Bureau geocodes addresses based on the street centerline. If the geocoding of these addresses would result in the population being assigned to the incorrect geographic entity, participants should create a geographic corridor.

A **geographic corridor** is an area that includes only the road right-of-way and does not contain any structures addressed to either side of the street. **Example 5.3.4.1** shows a corridor that has been created where the AIA owns the right-of-way but the housing units are not included in the incorporated place (shown in color). Without a corridor, the housing units along this road would be included in the AIA.

Example 5.3.4.2 shows that the right-of-way belongs in the unincorporated area, while the housing units are included in the incorporated place (shown in color). This is important for some cities because they are portraying that the city is not responsible for road maintenance. This is not relevant for Census Bureau tabulations and is not easy to depict in the Census nationwide database. This type of corridor should not be included in a BAS response.



Example 5.3.4.1



Example 5.3.4.2

If geographic corridors are created then individual change polygons for each geographic corridor must also be created. Each change polygon must have the required attributes and corresponding change type populated, as seen in Table 5.3.4.1. In the **NAME** field, enter the name of the jurisdiction. In the **RELATE** field, indicate whether the change is adding **IN** or taking **OUT** (removing) the corridor.

Geographic Corridors

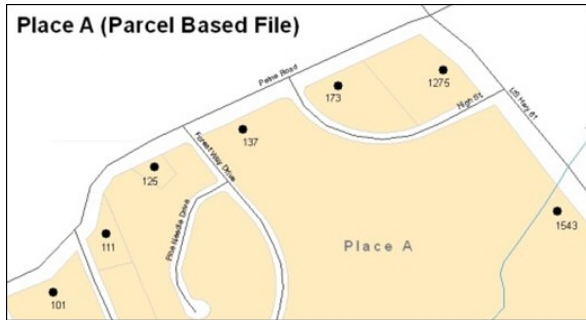
	NAME	CHNG_TYPE	EFF_DATE	DOCU	AREA	RELATE
Geographic Corridor	X	X('C')				X('IN', 'OUT')

Table 5.3.4.1: Geographic Corridors (Note: 'X' = Required field)

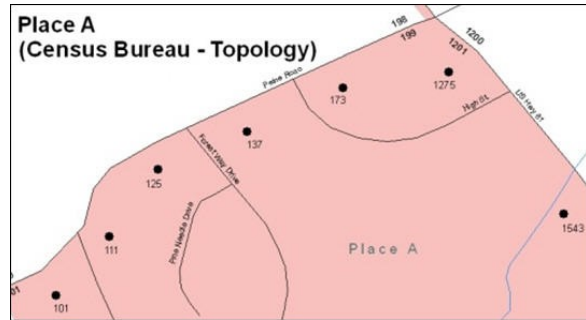
5.3.5 Geographic Offsets

A **geographic offset** is an area claimed by a geographic entity that is only on one side of a road and does not include structures addressed to that side of the road.

The Census Bureau is aware that many governments base their legal boundaries on cadastral (parcel-based) right-of-way mapping. Census maps are based on spatial data that is topologically integrated which makes maintenance of geographic offsets inefficient. Snapping an entity boundary to the centerline wherever applicable will help to establish more accurate population counts. If a boundary is the front lot line, Census strongly prefers that the boundary be snapped to the road. If a boundary is at the rear of a lot, then it should be depicted as such. **Example 5.3.5.1** depicts a cadastral (parcel-based) boundary map and **Example 5.3.5.2** shows how the boundary should be reflected when it is sent to the Census Bureau.



Example 5.3.5.1



Example 5.3.5.2

If geographic offsets are created then individual change polygons for each geographic offset must also be created. Each change polygon must have the required attributes and corresponding change type populated, as seen in Table 5.3.5.1. In the **NAME** field, enter the name of the jurisdiction. In the **RELATE** field, indicate whether the change is adding IN or taking OUT (removing) the area represented as an offset.

Geographic Offsets

	NAME	CHNG_TYPE	EFF_DATE	DOCU	AREA	RELATE
Geographic Offset	X	X('F')				X('IN', 'OUT')

Table 5.3.5.1: Geographic Offsets (Note: 'X' = required field)

Census has included an “offset” shapefile in the BAS materials (bas_2013_offset_<ssccc>.shp), so that your jurisdiction can be checked for any existing corridors or offsets. While Census prefers that new offsets are not created, (see above), this information can be helpful in determining if current boundaries are correct.

5.4 Tribal Subdivisions

Tribes may submit the boundaries for one type of administrative area within their reservation(s) and/or off-reservation trust lands (land base) for inclusion into the MAF/TIGER database. The Census Bureau will consider any type of unit of self-government or administration as a “tribal subdivision.” Tribal subdivisions should cover all, or most, of the tribe’s land base. If a tribe has more than one type of distinct administrative area that could qualify as a tribal subdivision (such as tribal election districts, tribal water districts, or health service areas with different boundaries), the tribe may submit only one type of subdivision. Tribal subdivisions can be considered either active (A) or inactive (I). Active subdivisions are defined as having a functioning government with elected officials that provide programs and services. Inactive subdivisions have no functioning government or elected officials and receive services solely from the tribe.

Some examples of areas submitted as tribal subdivisions are:

- Areas used by a tribe for the election of tribal government officials (such as districts or precincts used for the election of tribal council members).
- Areas used by a tribal government for tax purposes.
- Areas used by a tribal government for the provision of general services or specified services, such as:
 - Water districts
 - Health service areas
 - Emergency service delivery areas (such as 911, fire, and/or police), or
 - Grazing districts or range units
- Historical or traditional areas recognized by a tribal government.
- Local tribal community governments.

5.4.1 Criteria for Defining Tribal Subdivisions

- The delineation of tribal subdivisions is restricted to the area contained within reservation(s) and/or associated off-reservation trust lands (land base).
- There is no minimum population threshold for a tribal subdivision.
- Tribal subdivisions should cover all, or most, of the tribe's land base.
- A tribal subdivision may be discontinuous.
- A tribe may designate only ONE type of tribal subdivision. If a tribe has more than one level of tribal subdivisions within its land base, the Census Bureau recommends delineating subdivisions corresponding to the lowest geographic level (those geographic areas containing the smallest area) of the tribe's administrative hierarchy.
- Tribal subdivisions should not be based solely on land ownership or other cadastral areas, nor should they consist of divisions based on the U.S. Public Land Survey System (PLSS) of townships, ranges, and sections, if these areas have no governmental or administrative function for your tribe.
- Some examples of descriptors for tribal subdivisions are:
 - District
 - Community
 - Area
 - Chapter
 - Segment
 - Administrative Area
 - Addition
 - County District

5.4.2 Updating Tribal Subdivisions

Tribal Subdivisions are updated in a similar manner to boundary changes (such as additions or deletions). In order to submit tribal subdivision updates please create a separate tribal subdivision change polygon layer. Updates that can be made to tribal subdivisions include: additions, deletions, boundary corrections (adding and removing area), and creating new tribal subdivisions. Please note that all tribal subdivision updates (additions, deletions, name changes, and new entities), with the exception of boundary corrections, require a tribal resolution. Tables 5.3.1.1, 5.3.2.1, and 5.3.3.1 display the required attributes for each of the change types. Review the example processes in Appendix 5 for information on how to create change polygons. Change polygons for tribal subdivisions may be created in the same manner as for reservations and off-reservation trust lands.

5.5 Linear Feature Updates

5.5.1 Adding, Deleting, Renaming, and Recoding Linear Features

If linear feature modifications are needed, they may be submitted in a separate linear feature update layer. Each linear feature update must have the required attributes and corresponding change type populated, as seen in Table 5.4.1.1. In the TLID field, preserve the existing TLID for the feature.

Linear Feature Updates

	CHNG_TYPE	TLID	FULLNAME	MTFCC
Add Feature	X('AL')		X	X
Delete Feature	X('DL')	X		
Rename Feature	X('CA')	X	X	
Recode Feature	X('CA')	X		X

Table 5.5.1.1 Linear Feature Updates (Note: 'X' = Required field)

Note: A list of MTFCC codes can be found in Appendix 6.

5.5.2 Linear Feature Update Guidelines

- If a road, subdivision, etc. is missing from the Census Bureau's feature network, add the feature(s) and provide the name and MTFCC.
- If a feature does not exist and is in the Census Bureau's feature network, delete the feature.
- If a feature is in the incorrect location in the Census Bureau's feature network, delete the feature and re-add it in the correct location. Only do this if the feature is very far off or in the wrong position relative to boundaries or other features.

5.5.3 Address Range Updates

Address ranges may be submitted to the Census Bureau as part of the linear feature update layer. As with other linear feature updates, address ranges must have the required attributes and corresponding change type populated. As existing address ranges cannot be shown in our outgoing shapefiles, we recommend that participants generally only add address ranges to new features.

Address Range Updates

	CHNG_TYPE	FULLNAME	MTFCC	LTOADD	RTOADD	LFROMADD	RFROMADD
Address Ranges	X('CA')			X	X	X	X

Table 5.5.3.1: Address Range Updates (Note: 'X' = Required field)

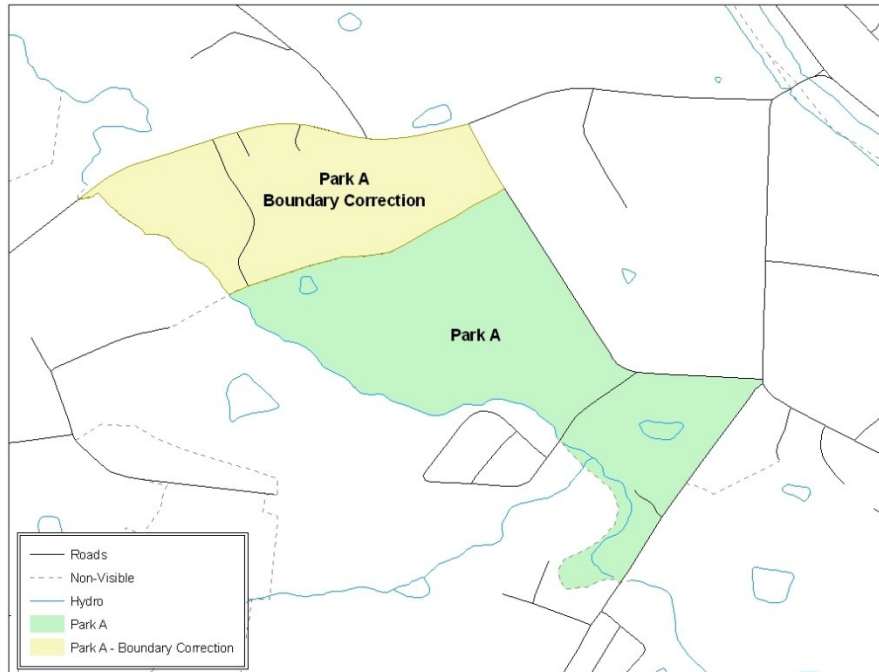
5.6 Area Landmarks, Hydro Areas, and Point Landmarks

5.6.1 Area Landmark / Hydro Area Updates

Area landmarks and hydrographic areas are updated in a similar manner to legal boundary changes. However, area landmarks and hydro areas are not legal entities, so no documentation or effective dates are required.

In order to submit area landmark and hydro area updates, create a separate change polygon layer. Updates that can be made to area landmarks and hydro areas include:

- boundary corrections (adding and removing area)
- creating a new area landmark or hydro area
- removing an area landmark or hydro area
- name change.



Example 5.6.1.1: This example shows a boundary correction to Park A. See Appendix 5 for more information on creating change polygons for area landmark and hydro areas.

Each area landmark or hydro area update must have the required attributes and corresponding change type populated. In the AREAID field, preserve the existing AREAID for the feature.

Landmark/Hydro Area Updates

	FULLNAME	CHNG_TYPE	RELATE	MTFCC	AREAID
Boundary Correction (Add Area)	X	X('B')	X('IN')		X
Boundary Correction (Remove Area)	X	X('B')	X('OUT')		X
Delete Landmark		X('D')			X
Change Landmark Name	X	X('G')			X
New Landmark	X	X('E')		X	

Table 5.6.1.2: Landmark/Hydro Area Updates (Note: 'X' = Required field)

The examples in Appendices 5A and 5B provide information on how to create change polygons. While the sample processes are written for legal boundary changes, the same methods apply for creating change polygons for area landmarks and hydro areas.

When adding new area landmarks or hydro areas, only add the following types of areas:

- water bodies
- glaciers
- airports
- cemeteries
- golf courses
- parks

Census cannot add other types of areas at this time (although some may already exist in the database). The following are acceptable MTFCC codes for new area landmarks or hydro areas:

New Landmark/Hydro Area MTFCC Codes

MTFCC	Description
H2030	Lake/Pond
H2040	Reservoir
H2041	Treatment Pond
H2051	Bay/Estuary/Gulf/Sound
H2060	Gravel Pit/Quarry filled with water
H2081	Glacier
H3025	Swamp/Marsh
K2180	Park
K2181	National Park Service Land
K2182	National Forest or Other Federal Land
K2183	Tribal Park, Forest, or Recreation Area
K2184	State Park, Forest, or Recreation Area
K2185	Regional Park, Forest, or Recreation Area
K2186	County Park, Forest, or Recreation Area
K2187	County Subdivision Park, Forest, or Recreation Area
K2188	Incorporated Place Park, Forest, or Recreation Area
K2189	Private Park, Forest, or Recreation Area
K2190	Other Park, Forest, or Recreation Area (quasi-public, independent park, commission, etc.)
K2451	Airport or Airfield
K2456	Airport – Intermodal Transportation Hub/Terminal
K2459	Runway/Taxiway
K2561	Golf Course
K2582	Cemetery

Table 5.6.1.3: Landmark area MTFCC codes

Due to heavy workloads for boundary changes to legal areas, changes to area landmarks and hydrographic areas may not be added to the database until after the next year’s BAS materials are created. It may take two BAS cycles in order to see these changes reflected in the materials.

5.6.2 Point Landmark Updates

Updates to point landmarks may also be made. In order to submit point landmark updates, create a separate point landmark update layer. Updates to point landmarks include:

- adding a new point landmark
- deleting an existing point landmark
- renaming a point landmark

Each point landmark update must have the required attributes and corresponding change type populated. In the POINTID field, preserve the existing POINTID for the feature.

Point Landmark Updates				
	FULLNAME	CHNG_TYPE	MTFCC	POINTID
New Point Landmark	X	X('E')	X	
Delete Point Landmark		X('D')		X
Change Name	X	X('G')		X

Table 5.6.2.1: Point Landmark Updates (Note: 'X' = Required field)

The following point landmark changes cannot be made due to Title 13 privacy concerns. Do not include any of the following types of landmarks in the point landmark changes file.

Restricted Point Landmark MTFCC Codes

MTFCC	Description
K1100	Housing Unit Location
K1121	Apartment Building or Complex
K1122	Rooming or Boarding House
K1223	Trailer Court or Mobile Home Park
K1226	Housing Facility/Dormitory for Workers
K1227	Hotel, Motel, Resort, Spa, Hostel, YMCA, or YWCA
K1228	Campground
K1229	Shelter or Mission
K1232	Halfway House/Group Home
K1233	Nursing Home, Retirement Home, or Home for the Aged
K1234	County Home or Poor Farm
K1235	Juvenile Institution
K1241	Sorority, Fraternity, or College Dormitory
K1251	Military Group Quarters
K1299	Other Group Quarters Location
K2100	Governmental
K2197	Mixed Use/Other Non-residential
K2300	Commercial Workplace
K2361	Shopping Center or Major Retail Center
K2362	Industrial Building or Industrial Park
K2363	Office Building or Office Park
K2364	Farm/Vineyard/Winery/Orchard
K2366	Other Employment Center
K2464	Marina
K2500	Other Workplace
K2564	Amusement Center

Table 5.6.2.2: Restricted MTFCCs

Census also cannot delete or modify any point landmarks that were imported from the USGS GNIS database. Changes submitted for the following types of landmarks may be left unchanged:

- K2451 (Airport)
- K2582 (Cemetery)
- C3022 (Summit or Pillar)
- C3081 (Locale or Populated Place)
- C3061 (Cul-de-sacs)

Due to heavy workloads for boundary changes to legal areas, changes to point landmarks may not be added to the database until after the next year’s BAS materials are created. It may take two BAS cycles in order to see these changes reflected in local materials.

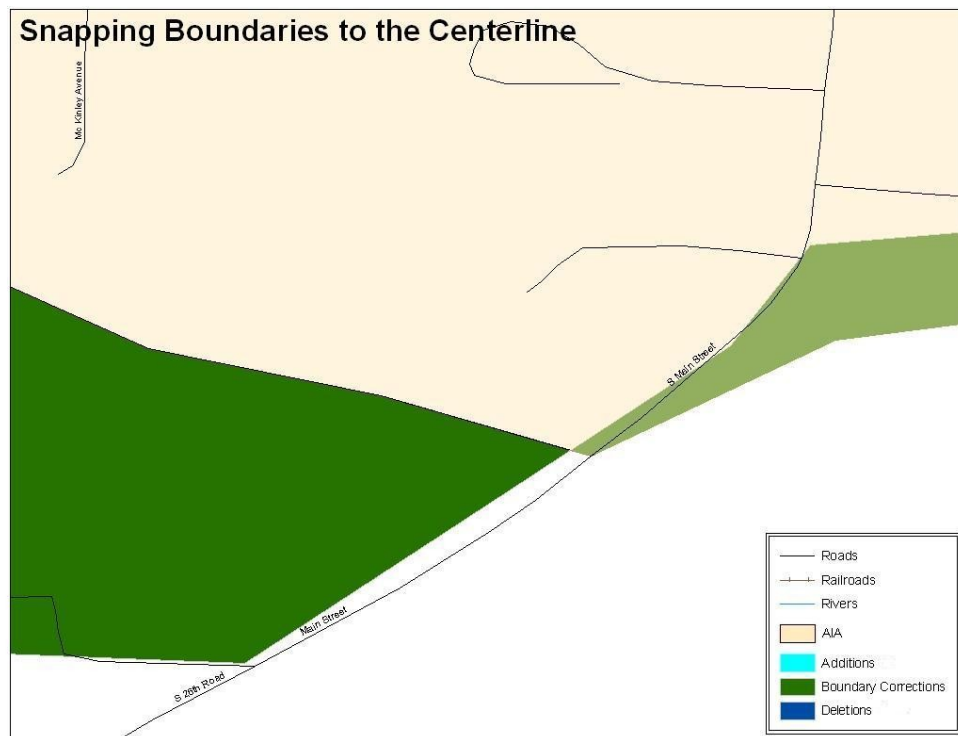
5.7 Reviewing Changes to the Census Bureau Shapefiles

All changes must be reviewed to ensure that they are intentional and correct.

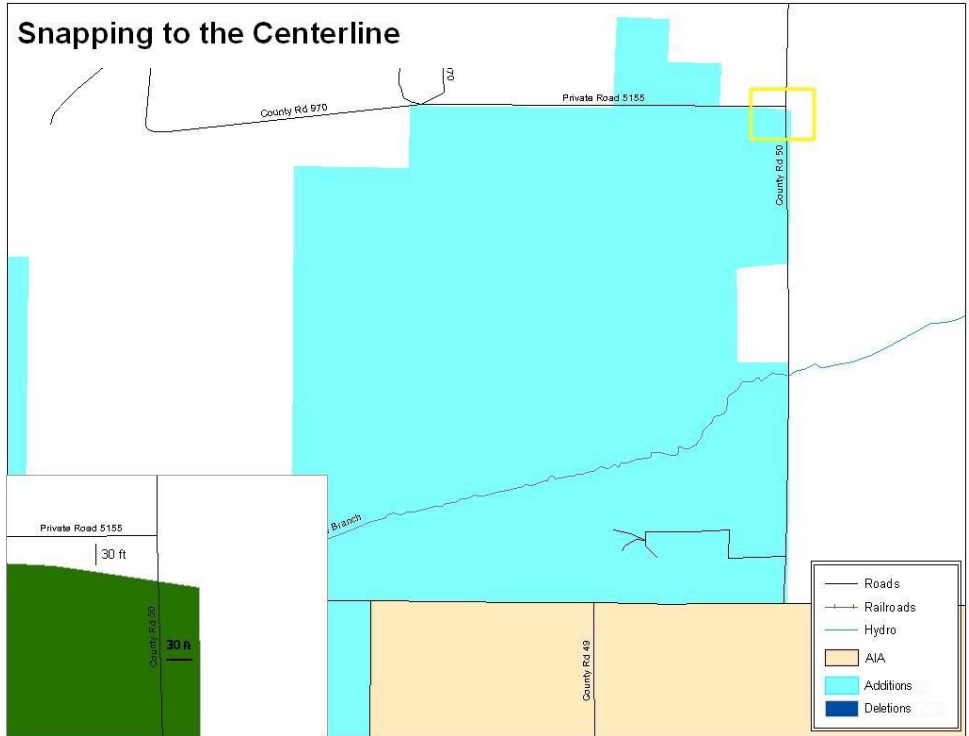
5.7.1 Boundary-to-Feature Relationships

Any changes must be reviewed to ensure that the correct boundary-to-feature relationships are being created or maintained. The Census Bureau is aware that many governments base their legal boundaries on cadastral (parcel-based) right-of-way mapping; however, Census bases maps on spatial data that is topologically integrated. Therefore, snap boundaries to street centerlines (or rivers, railroads, etc.) wherever applicable. This will help establish a more accurate population count for tribal entities.

The following examples show situations where boundary changes should be snapped to existing linear features. The Census Bureau will snap boundary changes to any linear feature within **thirty** feet.

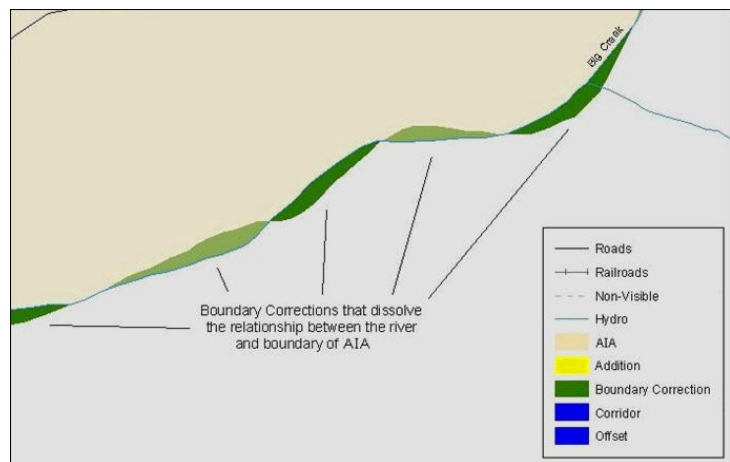


Example 5.7.1.1: These boundary corrections are not snapped to existing linear features in the MAF/TIGER database. Both boundary corrections should be snapped to centerlines or population may be assigned to incorrect entities.

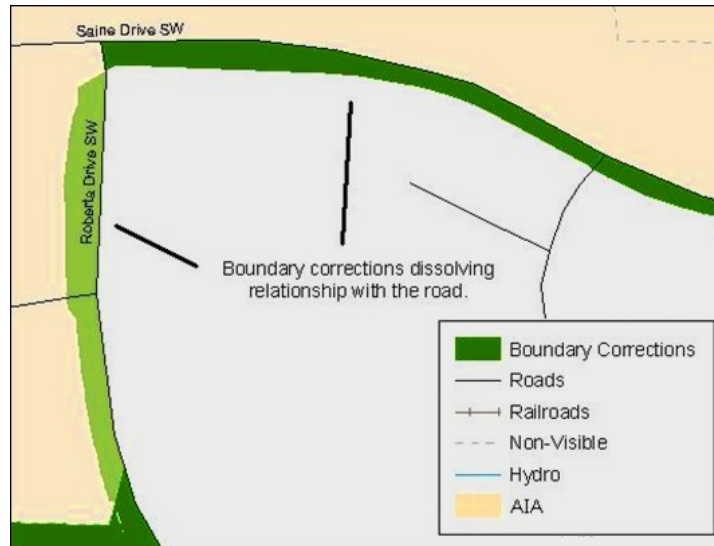


Example 5.7.1.2: This is an example of an addition that has been created without snapping to existing centerlines in the MAF/TIGER database. Unless the boundary is snapped to centerlines, some of the population may be assigned to an incorrect entity.

The Census Bureau will not accept boundary corrections that dissolve the current relationship between an existing boundary and linear feature. Any boundary corrections that create thirty feet or less of gap or overlap between the existing linear feature and boundary will not be incorporated into the MAF/TIGER database. See below for examples of changes that will not be accepted.



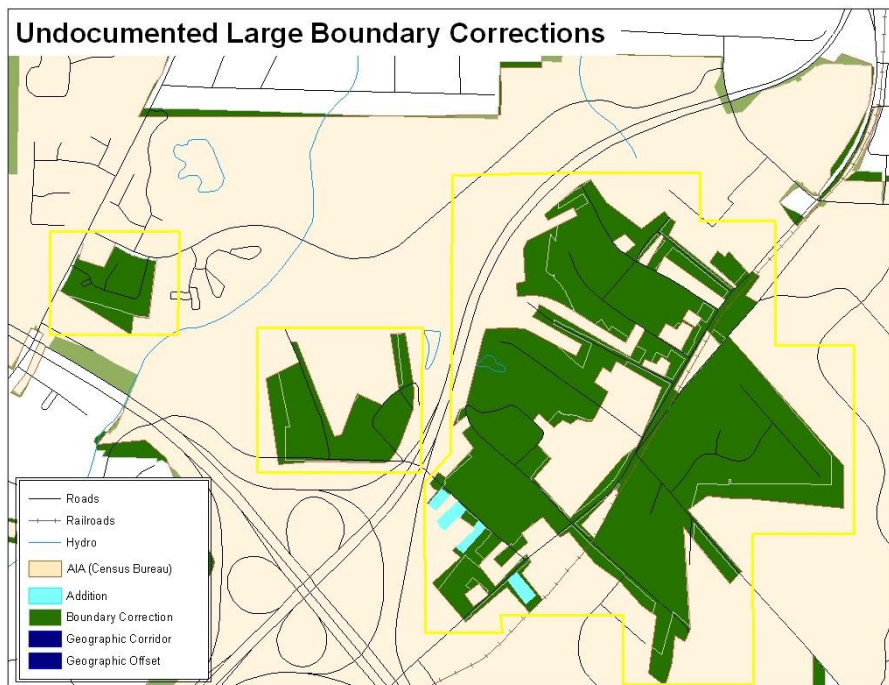
Example 5.7.1.3: Small spatial boundary corrections that dissolve the relationship with the river have been created. These boundary corrections will not be incorporated into the MAF/TIGER database.



Example 5.7.1.4: Small spatial boundary corrections that dissolve the boundary-to-feature relationship with multiple streets have been created. Incorporating these changes would affect the population counts for the area. Therefore the Census Bureau will not accept these small boundary corrections.

5.7.2 Large Boundary Corrections

The Census Bureau will not accept large boundary corrections to an entity without the appropriate legal documentation numbers and effective dates. These large boundary corrections may be legal boundary changes that occurred in the past and were never reported to the Census Bureau. The appropriate legal documentation and effective date must be submitted so that changes may be incorporated into the MAF/TIGER database.



Example 5.7.2.1: Without the appropriate documentation, Census will not accept large boundary corrections.

Note: There may be a few instances when large boundary corrections need to be made as a result of incorrect digitizing or where the boundary appears in the incorrect location due to other Census Bureau activities.

5.7.3 Including Required Attribute Information

It is important that each change polygon be reviewed to confirm that the correct attribute information is included. Without the correct attribute information, Census will be unable to process and incorporate the changes into the MAF/TIGER database. See Section 5.3 for the required attribute information and corresponding change type codes.

5.7.4 Including Appropriate Metadata (Projection Information)

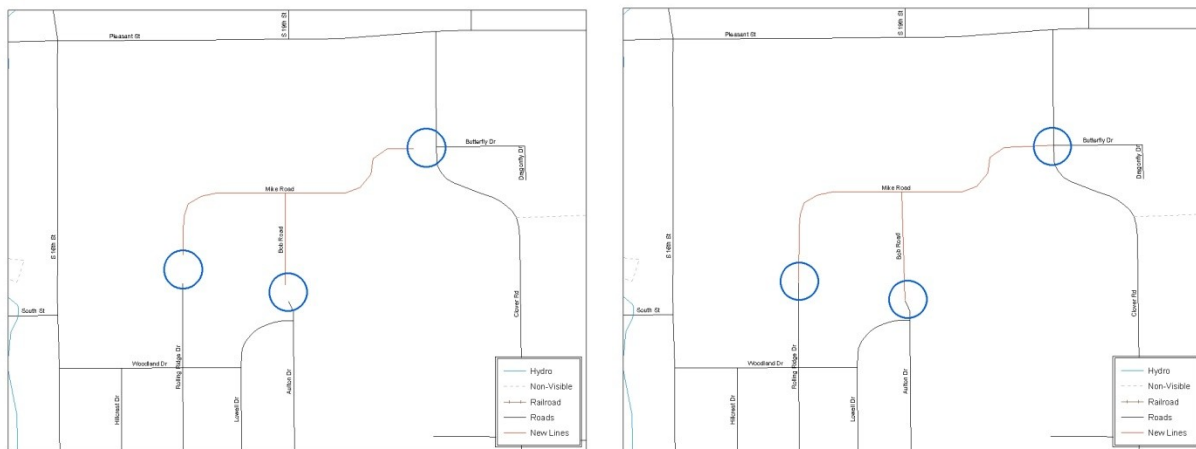
It is important that the appropriate projection information is included. Each update layer submitted should contain a *.prj file so that the Census Bureau can convert the projection back to GCS_NAD83. If the GIS being used cannot create a *.prj file, include the projection information in metadata. This is critical for Census to be able to process the file and incorporate the updates into the MAF/TIGER database.

5.7.5 Linear Feature Updates

Linear feature changes should be reviewed to ensure that they align with the features currently in the MAF/TIGER database.

Note: The Census Bureau has improved the feature network using locally provided sources to assure connectivity and topology through the MAF/TIGER Accuracy Improvement Project (MTAIP).

If linear feature changes do not align with current MAF/TIGER linear features, the Census Bureau may not incorporate the submitted updates.



Example 5.7.5.1: The image on the left shows new road features that were added to the existing feature network, but do not connect to existing road features. The image on the right shows the correction; connecting the new roads to the existing road features.

5.7.6 Additional Review Information

The Census Bureau will not make any boundary change that affects adjacent legal entities without the appropriate documentation. Review any change polygons that affect adjacent entities to determine if they are intentional, legal changes.

Note: Census Bureau will snap any addition, deletion, or boundary correction to a MAF/TIGER feature when it exists within **thirty** feet of that feature. This helps maintain the boundary-to-feature relationships in MAF/TIGER database and will ensure correct housing tabulation counts for entities.

5.8 Submitting Digital Data

If any changes are being reported, the Census Bureau requires that each participant submit at least one shapefile (change polygons). The total number of layers submitted depends on what types of changes need to be made. Following is a list of change layers that *may* need to be submitted:

- **Change Polygon Layers** (*ANRC, AIA, Tribal Subdivisions, and Hawaiian Homelands*)
 - These layers consist of the changes that the Census Bureau needs to make to entities.
 - A layer of change polygons should be created for each level of geography (ANRC, AIA, Tribal Subdivisions, etc.) that changes are being submitted for.
- **Whole Modified Entity Layer** (*ANRC, AIA, Tribal Subdivisions, and Hawaiian Homelands*)
 - These layers should only contain the complete and current boundary for the entity being updated.
 - A whole entity layer should be created for each level of geography that change polygons are being created for.
- **Local government feature network and boundary layers** (*optional*)
 - These layers will help the Census Bureau resolve any questionable change polygons and establish the correct boundary-to-feature relationships
- **Feature Update Layer** (*only if there are feature (road, river, railroad, etc.) additions, deletions, name changes, recodes, or address range updates*)
 - Include a linear feature update layer with only feature segments that need to be corrected.
- **Area / Hydro Landmark Layer**
 - Only if there are area and/or hydro landmark updates.
- **Point Landmark Layer**

- o Only if there are point landmark updates.

5.8.1 AIA, ANRC, Tribal Subdivision, and Hawaiian Homeland Submissions (Change Polygons)

The following table provides change polygon naming conventions for ANRCs, AIAs and Hawaiian Homelands.

Change Polygon Naming Conventions

Participant	Changes Submitted For	Shapefile Naming Conventions
AIA	AIA	bas13_<basID>_changes_aiannh
AIA	Tribal Subdivisions	bas13_<basID>_changes_tribalsub
ANRC	ANRC	bas13_<basID>_changes_anrc
Hawaiian Homelands	Hawaiian Homelands	bas13_<basID>_changes_hhl

Table 5.8.1.1: The change polygon layer naming conventions: <basID> represents your BAS entity ID, which can be found on the data CD or BAS form that you receive in the mail from the Census Bureau.

5.8.2 ANRC, AIA, Tribal Subdivision, and Hawaiian Homeland Submissions (Whole Entity Polygons)

The following table provides the whole entity polygon naming conventions for ANRCs, AIAs and Hawaiian Homelands.

Whole Entity Polygon Naming Conventions

Participant:	Changes Submitted For:	Shapefile Naming Conventions
AIA	AIA	bas13_<basID>_WholeEntity_aiannh
AIA	Tribal Subdivision	bas13_<basID>_WholeEntity_tribalsub
ANRC	ANRC	bas13_<basID>_WholeEntity_anrc
Hawaiian Homelands	Hawaiian Homelands	bas13_<basID>_WholeEntity_hhl

Table 5.8.2.1: The whole entity polygon layer naming conventions: <basID> represents your BAS entity ID, which can be found on the data CD or BAS form that you receive in the mail from the Census Bureau.

5.8.3 Linear Feature, Area Landmark / Hydro Area, and Point Landmark Updates (Not Required)

The following table provides the update layer naming conventions for the edges, area landmark, and point landmark update layers.

Edges/Area Landmarks/Point Landmarks Naming Conventions

Participant:	Changes Submitted For:	Shapefile Naming Conventions
All Participants	Edges	bas13_<basID>_LN_Changes
All Participants	Area / Hydro Landmarks	bas13_<basID>_Alndk_Changes
All Participants	Point Landmarks	bas13_<basID>_Plndk_Changes

Table 5.8.3.1: The naming conventions for the edges, area landmark, and point landmark update layers: <basID> represents your BAS entity ID, which can be found on the data CD or BAS form that you receive in the mail from the Census Bureau.

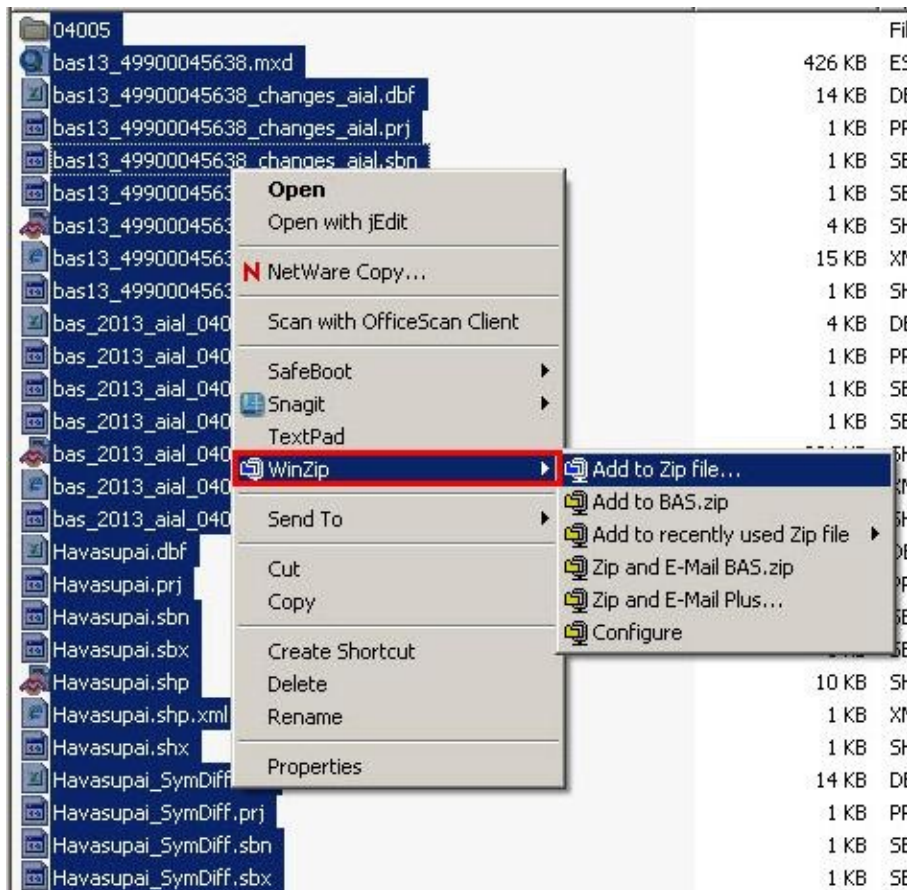
5.8.4 Compressing the Digital Files

Compress ALL update materials (including change polygon shapefiles, whole entity shapefiles, linear feature updates, landmark updates, local government feature network and boundary layers, and a text or other file with your contact information).

1. Navigate to the directory with the shapefiles.

Note: Centerline files or any additional information that may be helpful for Census to process your file is optional. One example where this would be helpful is if a particular polygon was not snapped to a river or road because the boundary does not follow the river or road.

2. Select all files and right click on the selection.
3. Select **WinZip**, and then **Add to Zip file**.

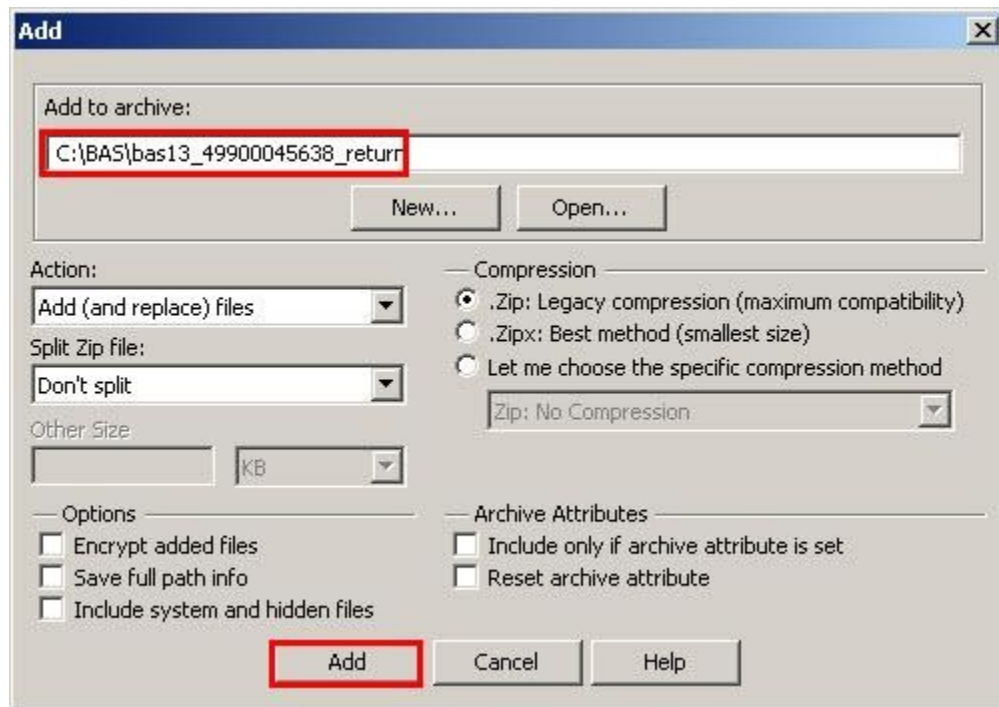


Example 5.8.4.1: Selecting and zipping return files.

Note: Versions of WinZip may vary so the interface may be slightly different. Software other than WinZip may be used to zip the return files.

4. In the **Add** window, in the Add to archive field, type the filename in the proper naming convention: **bas<yy>_<basID>_return** and then click **Add**.

Note: The **basID** numbers can be found on the Census Data disc.



Example 5.8.4.2: Naming the zip file.

5. Check the folder where the zip file was saved to verify that it was created properly. If so, the return file is ready for submission.

Note: If assistance is needed with preparing or zipping the BAS return files, call the Census Bureau at 301-763-1099 or 800-972-5651.

5.8.5 Submitting Digital Files via File Transfer Protocol (FTP)

It is requested that BAS zip files be submitted using the Census Bureau's **Send a File Utility** site. Submit only the zip file. The **Send a File Utility** is located at: <https://secure.census.gov/cgi-bin/sendfile>

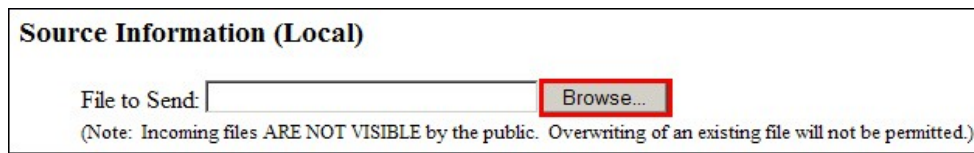
1. In a web browser, navigate to <https://secure.census.gov/cgi-bin/sendfile>.
2. In the password window:
 - o In the **User name** field, enter: **geobas**
 - o In the **Password** field, enter: **GEO1upload2010!**
 - o Click **OK**



Example 5.8.5.1: Password window

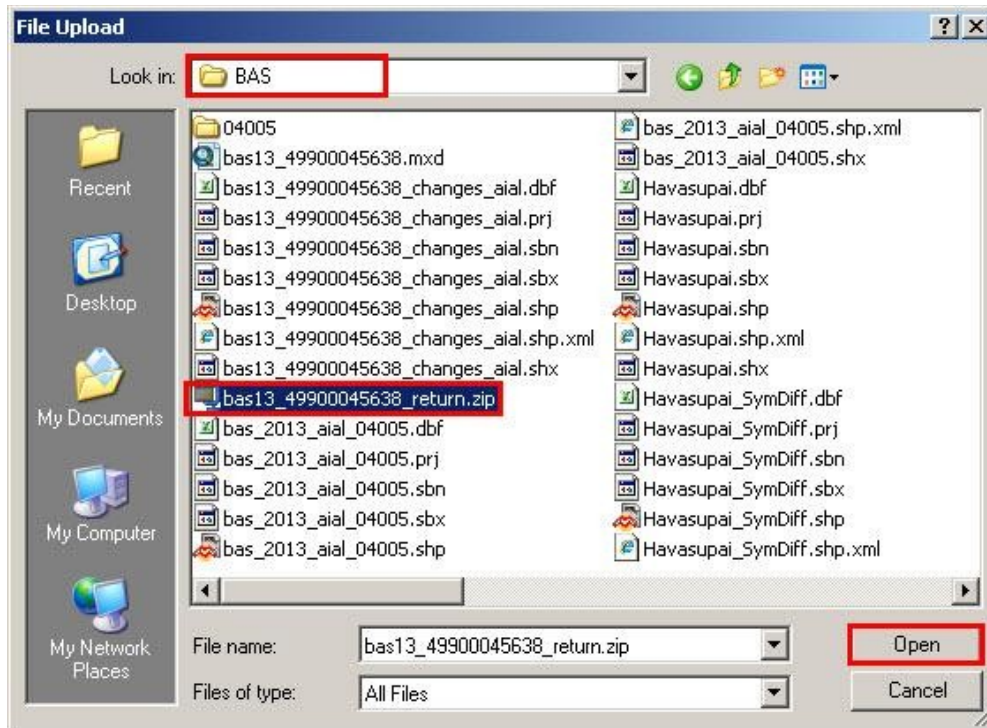
Note: The login/password window may appear different from the example depending on the browser, but the User name and Password are always the same. Make sure to type them exactly as they appear in step 2 above.

3. In the **Send a File Utility** window, in the **Source Information** section; next to the **File to Send** field, click **Browse**.



Example 5.8.5.2: Source Information section Browse button.

4. In the **Choose File** window, navigate to the appropriate folder, select the zip file, and then click **Open**.



Example 5.8.5.3: Choose file window

5. In the **Notify by E-mail** section:
 - o In the **Sender's Email Address** field, enter your email address
 - o In the **Census Bureau Employee's E-Mail Address** field, enter 'geo.aiana@census.gov'
 - o Click **Upload**

Notify by E-mail (Optional)

Please note that an automated email notice will be sent to the project staff. Unless you need to send a separate notice to a specific individual, you do not need to fill out this section.

Sender's Email Address:

Census Bureau Employee's E-Mail Address:

Example 5.8.5.4: Filling out the Notify by E-mail section

Note: Filling out the **Notify by E-mail** section will allow Census to send notice that the return zip file has been received. If there are any questions contact the Census Bureau at 301-763-1099, 800-972-5651 or geo.aiana@census.gov.

5.8.6 Additional Information

The Census Bureau recommends using FIPS codes to identify entities such as counties, AIAs, etc. Using a standard coding scheme facilitates the digital exchange of data.

These codes can be found in the Census Bureau shapefiles or can be obtained at: http://geonames.usgs.gov/domestic/download_data.htm. If there are any questions or problems, contact the Census Bureau at 301-763-1099, 800-972-5651 or **geo.aiana@census.gov**.

Due to limited staff, Census may not be able to make all updates this year. Census will prioritize updates in the following order: legal changes, boundary corrections, linear feature changes, and landmark changes. The earlier Census receives a submission, the greater the chance that Census will be able to make all of the updates. Only submit changes that occurred on or before Jan. 1, 2013. Census will not be able to make any updates effective after this date until next year's BAS.

Appendix 1: Paperwork Reduction Project

The U.S. Census Bureau estimates that the BAS review will take most respondents from 1 to 8 hours to complete. This includes the time needed to read the instructions, assemble materials, organize and review the information, and report any needed changes. This estimate is based on 80 percent of all areas having few or no changes. However, for areas with many changes, it may take 20 hours or longer to complete the survey. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to:

Paperwork Project 0607-0151
U.S. Census Bureau
4600 Silver Hill Road
Room 3K138
Washington, DC 20233

Or you may e-mail comments to:

paperwork@census.gov

Note: Use “Paperwork Project 0607-0151” as the subject.

Include a copy of your message addressed to:

geo.aiana@census.gov.

Appendix 2: Census Bureau Regional Offices - Contact Information

Census Regional Offices

<p>Atlanta Regional Office 101 Marietta Street N.W., Suite 3200 Atlanta, GA 30303 Phone: (404) 331-1339 Fax: (404) 331-1570 Email: atlanta.geography@census.gov</p>	<p>Chicago Regional Office 1111 W. 22nd Street, Suite 400 Oak Brook, IL 60523-1918 Phone: (630) 288-9245 Fax: (630) 288-9313 Email: chicago.geography@census.gov</p>	<p>Denver Regional Office 6950 W Jefferson Ave, Suite 250 Denver, CO 80235 Phone: (720) 962-3880 Fax: (303) 969-6777 Email: dnro.geography.list@census.gov</p>
<p>Los Angeles Regional Office 15350 Sherman Way, Suite 400 Van Nuys, CA 91406 Phone: (818) 267-1724 Fax: (818) 267-1700 Email: los.angeles.geography@census.gov</p>	<p>New York Regional Office 395 Hudson Street, Suite 800 New York, NY 10014 Phone: (212) 584-3430 Fax: (212) 584-3419 Email: new.york.geography@census.gov</p>	<p>Philadelphia Regional Office 833 Chestnut Street, Suite 504 Philadelphia, PA 19107-4405 Phone: (215) 717-1830 Fax: (215) 717-2589 Email: philadelphia.geography@census.gov</p>

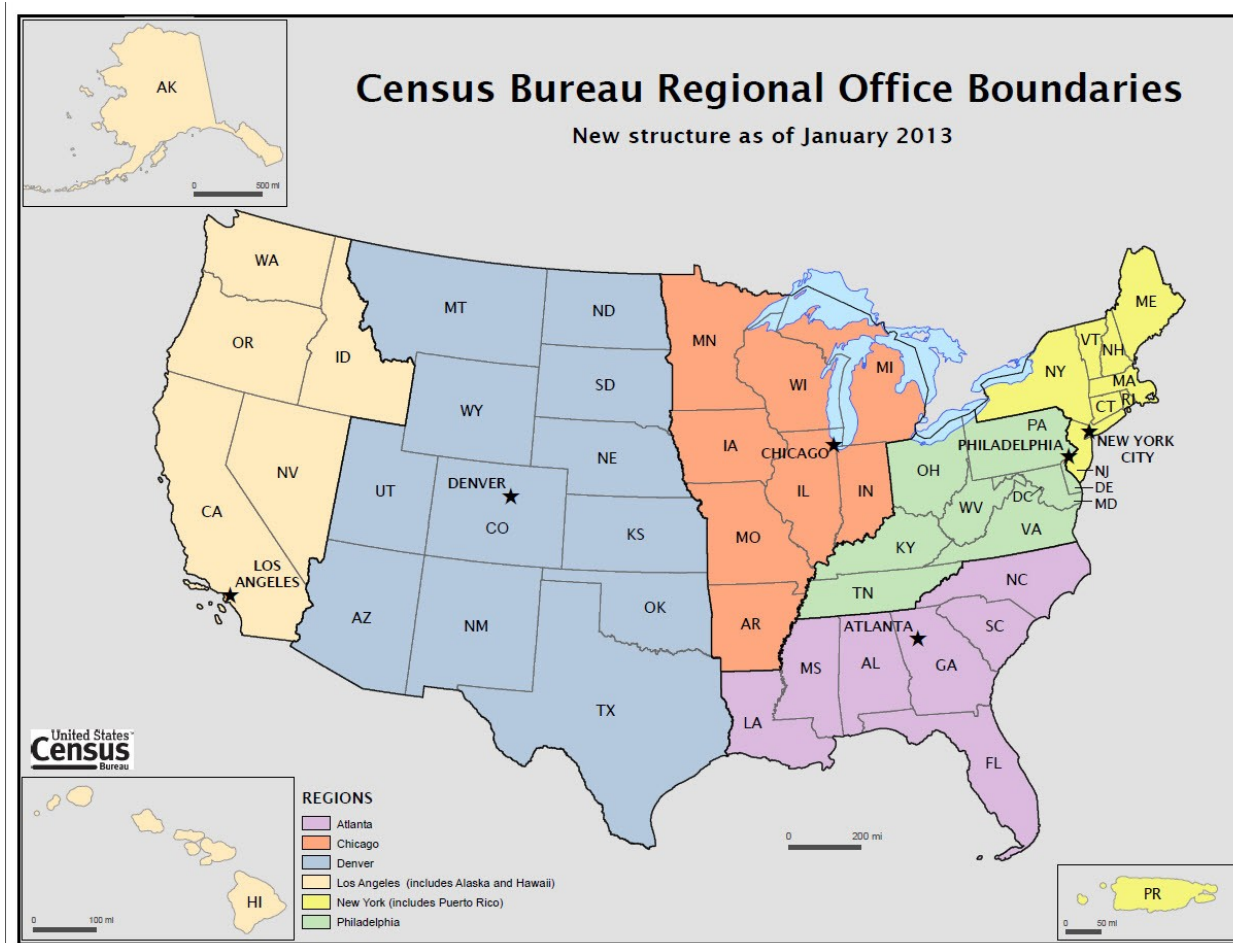


Figure A3: Census Regional Offices

Appendix 3: AIAs by Region

BasID	Reservation Name	Regional Office
49900010010	Acoma Pueblo	Denver
49900020020	Agua Caliente Indian Reservation	Los Angeles
49900030050	Alabama-Coushatta Reservation	Denver
49900040080	Allegany Reservation	New York
49900050095	Alturas Indian Rancheria	Los Angeles
49900060110	Annette Island Reserve	Los Angeles
49905960115	Aroostook Band of Micmac Trust Land	New York
49906570120	Auburn Rancheria	Los Angeles
49900070125	Augustine Reservation	Los Angeles
49900080140	Bad River Reservation	Chicago
49900090155	Barona Reservation	Los Angeles
49900110165	Battle Mountain Reservation	Los Angeles
49900120170	Bay Mills Reservation	Chicago
49900130185	Benton Paiute Reservation	Los Angeles
49900140200	Berry Creek Rancheria	Los Angeles
49900150215	Big Bend Rancheria	Los Angeles
49900160225	Big Cypress Reservation	Atlanta
49900170240	Big Lagoon Rancheria	Los Angeles
49900180250	Big Pine Reservation	Los Angeles
49900190265	Big Sandy Rancheria	Los Angeles
49900200275	Big Valley Rancheria	Los Angeles
49900210290	Bishop Reservation	Los Angeles
49900220305	Blackfeet Indian Reservation	Denver
49900230325	Blue Lake Rancheria	Los Angeles
49900250335	Bois Forte Reservation	Chicago
49900260350	Bridgeport Reservation	Los Angeles
49900160360	Brighton Reservation	Atlanta
49900270400	Burns Paiute Indian Colony	Los Angeles
49900280415	Cabazon Reservation	Los Angeles
49900290435	Cahuilla Reservation	Los Angeles
49900300440	Campbell Ranch	Los Angeles
49900310450	Campo Indian Reservation	Los Angeles
49900090495	Capitan Grande Reservation	Los Angeles
49900320495	Capitan Grande Reservation	Los Angeles
49900340510	Carson Colony	Los Angeles
49900350525	Catawba Reservation	Atlanta
49900040540	Cattaraugus Reservation	New York
49900360555	Cedarville Rancheria	Los Angeles
49900370560	Celilo Village	Los Angeles
49900380560	Celilo Village	Los Angeles
49900390560	Celilo Village	Los Angeles
49900400575	Chehalis Reservation	Los Angeles
49900410585	Chemehuevi Reservation	Los Angeles

49900420605	Cheyenne River Reservation	Denver
49900430620	Chicken Ranch Rancheria	Los Angeles
49900440635	Chitimacha Reservation	Atlanta
49900160690	Coconut Creek Trust Land	Atlanta
49900460695	Cocopah Reservation	Denver
49900470705	Coeur d'Alene Reservation	Los Angeles
49900480720	Cold Springs Rancheria	Los Angeles
49900490735	Colorado River Indian Reservation	Denver
49900500750	Colusa Rancheria	Los Angeles
49900510760	Colville Reservation	Los Angeles
49900520770	Coos, Lower Umpqua, and Siuslaw Reservation	Los Angeles
49900530775	Coquille Reservation	Los Angeles
49900540780	Cortina Indian Rancheria	Los Angeles
49900550795	Coushatta Reservation	Atlanta
49900560815	Cow Creek Reservation	Los Angeles
49900570825	Coyote Valley Reservation	Los Angeles
49900590855	Crow Creek Reservation	Denver
49900580845	Crow Reservation	Denver
49900610940	Dresslerville Colony	Los Angeles
49900620955	Dry Creek Rancheria	Los Angeles
49900630965	Duck Valley Reservation	Los Angeles
49900640975	Duckwater Reservation	Los Angeles
49900650990	Eastern Cherokee Reservation	Atlanta
49900671010	Elk Valley Rancheria	Los Angeles
49900661005	Elko Colony	Los Angeles
49900681040	Ely Reservation	Los Angeles
49900691055	Enterprise Rancheria	Los Angeles
49900601065	Ewiaapaayp Reservation	Los Angeles
49900701070	Fallon Paiute-Shoshone Colony	Los Angeles
49900701075	Fallon Paiute-Shoshone Reservation	Los Angeles
49900711100	Flandreau Reservation	Denver
49900721110	Flathead Reservation	Denver
49900731125	Fond du Lac Reservation	Chicago
49900741135	Forest County Potawatomi Community	Chicago
49900751140	Fort Apache Reservation	Denver
49900761150	Fort Belknap Reservation	Denver
49900771160	Fort Berthold Reservation	Denver
49900781170	Fort Bidwell Reservation	Los Angeles
49900791185	Fort Hall Reservation	Los Angeles
49900801195	Fort Independence Reservation	Los Angeles
49900811210	Fort McDermitt Indian Reservation	Los Angeles
49900821220	Fort McDowell Yavapai Nation Reservation	Denver
49900831235	Fort Mojave Reservation	Denver
49900841250	Fort Peck Indian Reservation	Denver
49900161260	Fort Pierce Reservation	Atlanta
49900861280	Fort Yuma Indian Reservation	Los Angeles

49900871310	Gila River Indian Reservation	Denver
49900881340	Goshute Reservation	Denver
49900891355	Grand Portage Reservation	Chicago
49900901365	Grand Ronde Community	Los Angeles
49900911370	Grand Traverse Reservation	Chicago
49900921380	Greenville Rancheria	Los Angeles
49900931395	Grindstone Indian Rancheria	Los Angeles
49900941400	Guidiville Rancheria	Los Angeles
49900951410	Hannahville Indian Community	Chicago
49900961440	Havasupai Reservation	Denver
49900971450	Ho-Chunk Nation Reservation	Chicago
49900981460	Hoh Indian Reservation	Los Angeles
49900161475	Hollywood Reservation	Atlanta
49900991490	Hoopa Valley Reservation	Los Angeles
49901001505	Hopi Reservation	Denver
49901011515	Hopland Rancheria	Los Angeles
49901021530	Houlton Maliseet Reservation	New York
49901031545	Hualapai Indian Reservation	Denver
49901041550	Huron Potawatomi Reservation	Chicago
49900161555	Immokalee Reservation	Atlanta
49901051560	Inaja and Cosmit Reservation	Los Angeles
49901061575	Indian Township Reservation	New York
49901071590	Iowa (KS-NE) Reservation	Denver
49901081610	Isabella Reservation	Chicago
49901091625	Isleta Pueblo	Denver
49901101640	Jackson Rancheria	Los Angeles
49901111655	Jamestown S'Klallam Reservation	Los Angeles
49901121670	Jamul Indian Village	Los Angeles
49901131685	Jemez Pueblo	Denver
49905971690	Jena Band of Choctaw Reservation	Atlanta
49901141700	Jicarilla Apache Nation Reservation	Denver
49901151720	Kaibab Indian Reservation	Denver
49901161735	Kalispel Reservation	Los Angeles
49901171750	Karuk Reservation	Los Angeles
49901181770	Kickapoo (KS) Reservation	Denver
49901184910	Kickapoo (KS)/Sac and Fox Nation (KS-NE) joint use area	Denver
49902194910	Kickapoo (KS)/Sac and Fox Nation (KS-NE) joint use area	Denver
49901191775	Kickapoo (TX) Reservation	Denver
49901201785	Klamath Reservation	Los Angeles
49901211800	Kootenai Reservation	Los Angeles
49901261850	La Jolla Reservation	Chicago
49901291895	La Posta Indian Reservation	Chicago
49901221815	Lac Courte Oreilles Reservation	Chicago
49901231825	Lac du Flambeau Reservation	Denver
49901241830	Lac Vieux Desert Reservation	Los Angeles
49901251840	Laguna Pueblo	Denver

49901271860	Lake Traverse Reservation	Chicago
49901281880	L'Anse Reservation	Los Angeles
49901301915	Las Vegas Indian Colony	Los Angeles
49901311925	Laytonville Rancheria	Los Angeles
49901321940	Leech Lake Reservation	Chicago
49900151955	Likely Rancheria	Los Angeles
49901331960	Little River Reservation	Chicago
49901341963	Little Traverse Bay Reservation	Chicago
49901351970	Lone Pine Reservation	Los Angeles
49900151980	Lookout Rancheria	Los Angeles
49901361995	Los Coyotes Reservation	Los Angeles
49901372015	Lovelock Indian Colony	Los Angeles
49901382030	Lower Brule Reservation	Denver
49901392040	Lower Elwha Reservation	Los Angeles
49901402055	Lower Sioux Indian Community	Chicago
49901412070	Lummi Reservation	Los Angeles
49900852075	Lytton Rancheria	Los Angeles
49901422085	Makah Indian Reservation	Los Angeles
49901432100	Manchester-Point Arena Rancheria	Los Angeles
49901442115	Manzanita Reservation	Los Angeles
49901452130	Maricopa (Ak Chin) Indian Reservation	Denver
49901462145	Mashantucket Pequot Reservation	New York
49906412150	Match-e-be-nash-she-wish Band of Pottawatomis Trust Land	Chicago
49901472175	Menominee Reservation	Chicago
49901482190	Mesa Grande Reservation	Los Angeles
49901492205	Mescalero Reservation	Denver
49901502240	Miccosukee Reservation	Atlanta
49901512255	Middletown Rancheria	Los Angeles
49901522270	Mille Lacs Reservation	Chicago
49900242285	Minnesota Chippewa Trust Land	Chicago
49901532300	Mississippi Choctaw Reservation	Atlanta
49901542315	Moapa River Indian Reservation	Los Angeles
49901552320	Mohegan Reservation	New York
49900152330	Montgomery Creek Rancheria	Los Angeles
49901562340	Mooretown Rancheria	Los Angeles
49901572360	Morongo Reservation	Los Angeles
49901582375	Muckleshoot Reservation	Los Angeles
49901592400	Nambe Pueblo	Denver
49901602415	Narragansett Reservation	New York
49901612430	Navajo Nation Reservation	Denver
49901622445	Nez Perce Reservation	Los Angeles
49901632460	Nisqually Reservation	Los Angeles
49901642475	Nooksack Reservation	Los Angeles
49901662495	North Fork Rancheria	Los Angeles
49901652490	Northern Cheyenne Indian Reservation	Denver
49901672505	Northwestern Shoshone Reservation	Denver

49902272510	Ohkay Owingeh	Denver
49900042535	Oil Springs Reservation	New York
49901682550	Omaha Reservation	Denver
49901692555	Oneida Nation Reservation	New York
49901702560	Oneida (WI) Reservation	Chicago
49901802570	Onondaga Nation Reservation	New York
49901282580	Ontonagon Reservation	Chicago
49901822595	Osage Reservation	Denver
49901832625	Paiute (UT) Reservation	Denver
49901842635	Pala Reservation	Los Angeles
49901852680	Pascua Pueblo Yaqui Reservation	Denver
49906592685	Paskenta Rancheria	Los Angeles
49901062695	Passamaquoddy Trust Land	New York
49901812695	Passamaquoddy Trust Land	New York
49901862715	Pauma and Yuima Reservation	Los Angeles
49901872745	Pechanga Reservation	Los Angeles
49901882760	Penobscot Reservation	New York
49901892775	Picayune Rancheria	Los Angeles
49901902785	Picuris Pueblo	Denver
49901912810	Pine Ridge Reservation	Denver
49901922820	Pinoleville Rancheria	Los Angeles
49900152835	Pit River Trust Land	Los Angeles
49901812850	Pleasant Point Reservation	New York
49901932865	Poarch Creek Reservation	Atlanta
49906002890	Pokagon Reservation	Chicago
49906602900	Ponca (NE) Trust Land	Denver
49901952910	Port Gamble Reservation	Los Angeles
49901962925	Port Madison Reservation	Los Angeles
49901972980	Prairie Band Potawatomi Nation Reservation	Denver
49901982985	Prairie Island Indian Community	Chicago
49900450680	Pueblo de Cochiti	Denver
49901942990	Pueblo of Pojoaque	Denver
49901993000	Puyallup Reservation	Los Angeles
49902003010	Pyramid Lake Paiute Reservation	Los Angeles
49902013020	Quartz Valley Reservation	Los Angeles
49902023030	Quileute Reservation	Los Angeles
49902033040	Quinault Reservation	Los Angeles
49902043070	Ramona Village	Los Angeles
49902053085	Red Cliff Reservation	Chicago
49902073100	Red Lake Reservation	Chicago
49902063095	Redding Rancheria	Los Angeles
49902083115	Redwood Valley Rancheria	Los Angeles
49902093130	Reno-Sparks Indian Colony	Los Angeles
49902103145	Resighini Rancheria	Los Angeles
49902113165	Rincon Reservation	Los Angeles
49900153185	Roaring Creek Rancheria	Los Angeles

49902123195	Robinson Rancheria	Los Angeles
49902133205	Rocky Boy's Reservation	Denver
49902143220	Rohnerville Rancheria	Los Angeles
49902153235	Rosebud Indian Reservation	Denver
49902163250	Round Valley Reservation	Los Angeles
49902173265	Rumsey Indian Rancheria	Los Angeles
49902193285	Sac and Fox Nation (KS-NE) Reservation	Denver
49902183280	Sac and Fox/Meskwiki Settlement	Chicago
49902203305	Saint Croix Reservation	Chicago
49902223340	Salt River Reservation	Denver
49902233355	San Carlos Reservation	Denver
49902253400	San Felipe Pueblo	Denver
49902254930	San Felipe/Santa Ana joint use area	Denver
49902304930	San Felipe/Santa Ana joint use area	Denver
49902254940	San Felipe/Santo Domingo joint use area	Denver
49902374940	San Felipe/Santo Domingo joint use area	Denver
49902263415	San Ildefonso Pueblo	Denver
49902283445	San Manuel Reservation	Los Angeles
49902293460	San Pasqual Reservation	Los Angeles
49902243370	Sandia Pueblo	Denver
49902303480	Santa Ana Pueblo	Denver
49902313495	Santa Clara Pueblo	Denver
49902323520	Santa Rosa Rancheria	Los Angeles
49902333525	Santa Rosa Reservation	Los Angeles
49902343540	Santa Ynez Reservation	Los Angeles
49902353550	Santa Ysabel Reservation	Los Angeles
49902363565	Santee Reservation	Denver
49902373585	Santo Domingo Pueblo	Denver
49902383625	Sauk-Suiattle Reservation	Los Angeles
49902393635	Sault Saint Marie Reservation	Chicago
49900163665	Seminole (FL) Trust Land	Atlanta
49902403680	Shakopee Mdewakanton Sioux Community	Chicago
49902413735	Sherwood Valley Rancheria	Los Angeles
49902423750	Shingle Springs Rancheria	Los Angeles
49902433780	Shoalwater Bay Indian Reservation	Los Angeles
49902443795	Siletz Reservation	Los Angeles
49902453825	Skokomish Reservation	Los Angeles
49902463840	Skull Valley Reservation	Denver
49902473855	Smith River Rancheria	Los Angeles
49906443860	Snoqualmie Reservation	Los Angeles
49902483870	Soboba Reservation	Los Angeles
49902493885	Sokaogon Chippewa Community	Chicago
49902513930	South Fork Reservation	Los Angeles
49902503925	Southern Ute Reservation	Denver
49902523935	Spirit Lake Reservation	Denver
49902533940	Spokane Reservation	Los Angeles

49902543955	Squaxin Island Reservation	Los Angeles
49902213320	St. Regis Mohawk Reservation	New York
49902553970	Standing Rock Reservation	Denver
49902563980	Stewart Community	Los Angeles
49902573985	Stewarts Point Rancheria	Los Angeles
49902584000	Stillaguamish Reservation	Los Angeles
49902594015	Stockbridge Munsee Community	Chicago
49902604030	Sulphur Bank Rancheria	Los Angeles
49902614045	Summit Lake Reservation	Los Angeles
49902624060	Susanville Indian Rancheria	Los Angeles
49902634075	Swinomish Reservation	Los Angeles
49902644090	Sycuan Reservation	Los Angeles
49902654095	Table Bluff Reservation	Los Angeles
49902664110	Table Mountain Rancheria	Los Angeles
49900164130	Tampa Reservation	Atlanta
49902674140	Taos Pueblo	Denver
49902684170	Tesuque Pueblo	Denver
49906614180	Timbi-Sha Shoshone Reservation	Los Angeles
49902694200	Tohono O'odham Nation Reservation	Denver
49902704225	Tonawanda Reservation	New York
49902714235	Tonto Apache Reservation	Denver
49902724255	Torres-Martinez Reservation	Los Angeles
49902734275	Trinidad Rancheria	Los Angeles
49902744290	Tulalip Reservation	Los Angeles
49902754300	Tule River Reservation	Los Angeles
49902764315	Tunica-Biloxi Reservation	Atlanta
49902774330	Tuolumne Rancheria	Los Angeles
49902784345	Turtle Mountain Reservation	Denver
49902794360	Tuscarora Reservation	New York
49902804375	Twenty-Nine Palms Reservation	Los Angeles
49902814390	Uintah and Ouray Reservation	Denver
49900374405	Umatilla Reservation	Los Angeles
49902824430	Upper Lake Rancheria	Los Angeles
49902834445	Upper Sioux Community	Chicago
49902844455	Upper Skagit Reservation	Los Angeles
49902854470	Ute Mountain Reservation	Denver
49900324500	Viejas Reservation	Los Angeles
49902864515	Walker River Reservation	Los Angeles
49902874530	Wampanoag-Aquinnah Trust Land	New York
49900384545	Warm Springs Reservation	Los Angeles
49900334560	Washoe Ranches	Los Angeles
49902884580	Wells Colony	Los Angeles
49902894595	White Earth Reservation	Chicago
49902904610	Wind River Reservation	Denver
49902914610	Wind River Reservation	Denver
49902924625	Winnebago Reservation	Denver

49902934635	Winnemucca Indian Colony	Los Angeles
49902944665	Woodfords Community	Los Angeles
49900154680	XL Ranch Rancheria	Los Angeles
49900394690	Yakama Nation Reservation	Los Angeles
49902954700	Yankton Reservation	Denver
49902964708	Yavapai-Apache Nation Reservation	Denver
49902974710	Yavapai-Prescott Reservation	Denver
49900304725	Yerington Colony	Los Angeles
49902984740	Yomba Reservation	Los Angeles
49902994755	Ysleta Del Sur Pueblo	Denver
49903004760	Yurok Reservation	Los Angeles
49903014770	Zia Pueblo	Denver
49903024785	Zuni Reservation	Denver

Appendix 4: Data Dictionary

Alaska Native Regional Corporation (ANRC) Shapefile

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
STATEFP	2	String	FIPS State Code
COUNTYFP	3	String	FIPS County Code
ANRCFP	5	String	FIPS ANRC Code
ANRCCE	2	String	Current Census ANRC Code
NAMELSAD	100	String	Name with Translated LSAD
LSAD	2	String	Legal / Statistical Area Description
AIANNHNS	8	String	ANSI Numeric Identifier for AIANNH Areas
FUNCSTAT	1	String	Functional Status
CLASSFP	2	String	FIPS 55 Class Code Describing an Entity
PARTFLG	1	String	Part Flag Indicator
CHNG_TYPE	2	String	Type of Area Update
EFF_DATE	8	Date	Effective Date
DOCU	120	String	Supporting Documentation
FORM_ID	4	String	(MTPS and Web BAS Only)
AREA	10	Double	Acreage of Area Update
RELATE	120	String	Relationship Description
NAME	100	String	ANRC name

Table A4.1: Alaska Native Regional Corporation (ANRC) Shapefile

American Indian Areas (AIA) Shapefile

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
STATEFP	2	String	FIPS State Code
COUNTYFP	3	String	FIPS County Code
AIANNHCE	4	String	Census AIANNH Code
COMPTYP	1	String	Indicates if Reservation, Trust Land, or both are Present
AIANNHFSR	1	String	Flag Indicating Level of Recognition of an AIA
NAMELSAD	100	String	Name with Translated LSAD
AIANNHNS	8	String	ANSI numeric identifier for AIA areas
LSAD	2	String	Legal / Statistical Area Description

FUNCSTAT	1	String	Functional Status
CLASSFP	2	String	FIPS 55 Class Code Describing an Entity
PARTFLG	1	String	Part Flag Indicator
CHNG_TYPE	2	String	Type of Area Update
EFF_DATE	8	Date	Effective Date
DOCU	120	String	Supporting Documentation
FORM_ID	4	String	(MTPS and Web BAS Only)
AREA	10	Double	Acreage of Area Update
RELATE	120	String	Relationship Description
NAME	100	String	AIA name
VINTAGE	2	String	Vintage of the Data

Table A4.2: American Indian Areas (AIA) Shapefile

American Indian Tribal Subdivisions (AITS) Shapefile

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
STATEFP	2	String	FIPS State Code
COUNTYFP	3	String	FIPS County Code
AIANNHCE	4	String	Census AIANNH Code
TRIBALSUBCE	3	String	Census Tribal Subdivision Code
NAMELSAD	100	String	Name with translated LSAD
AIANNHNS	8	String	ANSI Numeric Identifier for AIANNH Areas
LSAD	2	String	Legal / Statistical Area Description
FUNCSTAT	1	String	Functional Status
CLASSFP	2	String	FIPS 55 Class Code Describing an Entity
PARTFLG	1	String	Part Flag Indicator
CHNG_TYPE	2	String	Type of Area Update
EFF_DATE	8	Date	Effective Date
DOCU	120	String	Supporting Documentation
FORM_ID	4	String	(MTPS and Web BAS Only)
AREA	10	Double	Acreage of Area Update
RELATE	120	String	Relationship Description
NAME	100	String	Tribal subdivision name
VINTAGE	2	String	Vintage of the Data
AIANNHFSR	1	String	Flag Indicating Level of Recognition of an AIA

Table A4.3: American Indian Tribal Subdivisions (AITS) Shapefile

Edges Shapefile

ATTRIBUTE FIELD	LENGTH	TYPE	DESCRIPTION
STATEFP	2	String	State FIPS Code
COUNTYFP	3	String	County FIPS Code
TLID	10	Double	Permanent Edge ID
TFIDL	10	Double	Permanent Face ID (Left)
TFIDR	10	Double	Permanent Face ID (Right)
MTFCC	5	String	MAF/TIGER Feature Class Code
FIDELITY	1	String	Indication to a respondent when their entity boundary has changed through spatial enhancement

FULLNAME	40	String	Prefix qualifier code, prefix direction code, prefix type code, base name, suffix type code, suffix qualifier code
SMID	22	String	Spatial Tmeta ID
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
2010_BBSP	1	String	New BBSP flag
CHNG_TYPE	4	String	Type of linear update
LTOADD	10	String	Left To Address
RTOADD	10	String	Right To Address
LFROMADD	10	String	Left From Address
RFROMADD	10	String	Right From Address
ZIPL	5	String	Left Zip Code
ZIPR	5	String	Right Zip Code

Table A4.4: Edges Shapefile

Area Landmark Shapefile

<u>ATTRIBUTE FIELD</u>	<u>LENGTH</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
STATEFP	2	String	FIPS State Code
COUNTYFP	3	String	FIPS County Code
MTFCC	5	String	MAF/TIGER Feature Class Code
FULLNAME	120	String	Prefix direction code, prefix type code, base name, suffix type code, suffix direction code
AREAID	22	String	Landmark identification number
ANSICODE	8	String	ANSI code for area landmarks
CHNG_TYPE	2	String	Type of Area Landmark update
EFF_DATE	8	Date	Effective Date or Vintage
RELATE	120	String	Relationship description
BAG	3	String	Block Area Grouping

Table A4.5: Area Landmark Shapefile

Hydro Area Shapefile

<u>ATTRIBUTE FIELD</u>	<u>LENGTH</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
STATEFP	2	String	FIPS State Code
COUNTYFP	3	String	FIPS County Code
ANSICODE	8	String	ANSI code for hydrography area
MTFCC	5	String	MAF/TIGER Feature Class Code
FULLNAME	120	String	Prefix direction code, prefix type code, base name, suffix type, suffix type code, suffix direction code
CHNG_TYPE	2	String	Type of Area Update
HYDROID	22	String	Hydrography Identification Number
RELATE	120	String	Relationship description

Table A4.6: Hydro Area Shapefile

Point Landmarks Shapefile

<u>ATTRIBUTE FIELD</u>	<u>LENGTH</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
STATEFP	2	String	FIPS State Code

COUNTYFP	3	String	FIPS County Code
POINTID	22	String	Point Landmark Identification Number
MTFCC	5	String	MAF/TIGER Feature Class Code
FULLNAME	120	String	Prefix type code, base name, suffix type code
CHNG_TYPE	2	String	Type of Area Update

Table A4.7: Point Landmarks Shapefile

Geographic Offset Shapefile

<u>ATTRIBUTE FIELD</u>	<u>LENGTH</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
TFID	20	Integer	Permanent Face ID
STATEFP	2	String	FIPS State Code
COUNTYFP	3	String	FIPS County Code
OFFSET	1	String	Geographic Offset / Corridor Flag
ADDEXCLUDE	1	String	Address Exclusion Indicator
CHNG_TYPE	2	String	Type of area update
EFF_DATE	8	Date	Effective date or vintage
RELATE	120	String	Relationship description

Table A4.8: Geographic Offset Shapefile

Appendix 5A: 2013 Digital BAS – Example Process 1

1. Required Files:

A. Census Bureau Shapefiles

- If Digital BAS materials were sent on CD, a zip file with all of the necessary shapefiles should be on the CD. Use these materials to create the Digital BAS submission for 2013.
- If Digital BAS materials were downloaded from the Census website, the file names will be slightly different. The prefix will begin with **PVS** (e.g., **PVS_12_v2_edges_<ssccc>.shp**). Throughout this guide, Census uses the prefix of **bas_2013**, but the **PVS files** are exactly the same.

Note: Contact the Census Bureau at 301-763-1099, 800-972-5651 or **geo.aiana@census.gov** with any questions.

Copy the data to a hard drive/server, and unzip the data to ensure that the correct data has been sent. For an AIA, these layers are critical:

- **bas_2013_aial_<ssccc>.shp**
- **bas_2013_edges_<ssccc>.shp**

Note: <ssccc> represents the two-digit state code and three-digit county code.

The shapefiles should include the home county/counties for all reservations and trust land as well as all adjacent counties.

Note: Census suggests that participants make an extra copy of the data in case an emergency backup is needed.

B. Local Data

The minimum data necessary is a jurisdiction polygon shapefile showing only the outer boundary or boundaries. Local parcel files are not acceptable. If each jurisdiction's boundaries are contiguous, the file should contain only one polygon for each entity; if some of the entities within the jurisdiction are non-contiguous, they may be saved as a multi-part polygon or consist of one polygon for each disjointed part. Other local data layers which may be helpful if available include centerline data, hydrological, railroad, or other linear feature data, and imagery.

2. Symbolizing layers in ArcGIS

The following are suggestions for symbolizing Census data in ArcGIS.

For the Edges layer, symbolize the linear features by grouping like MTFCC codes (codes sharing the same first character). See Table A4A.2.1:

Edges MTFCC Suggested Symbolization





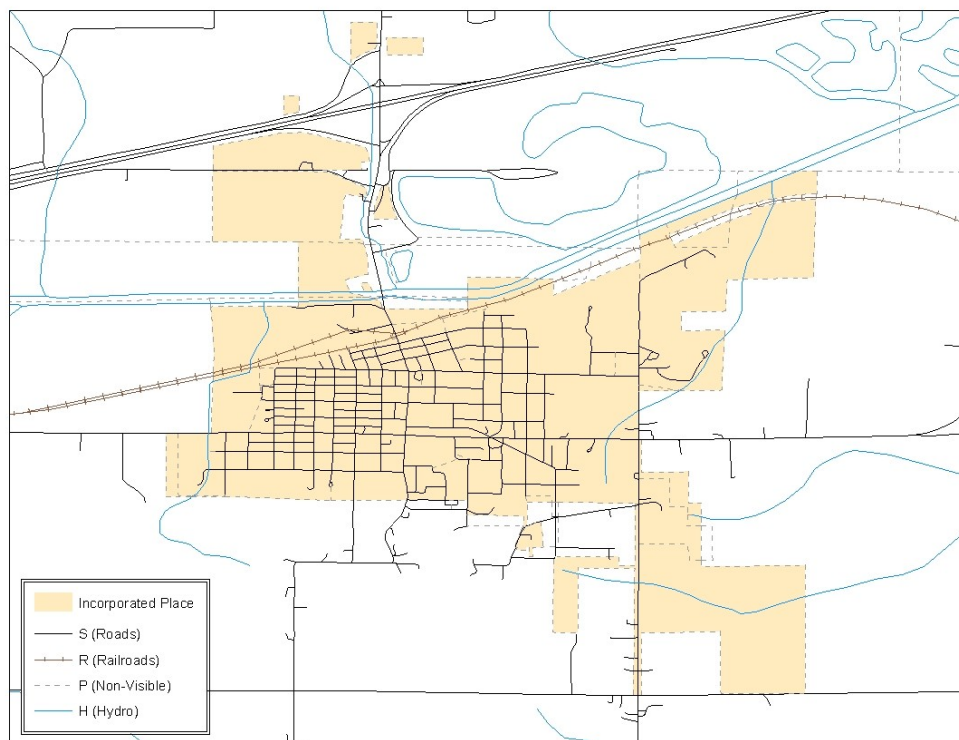
MTFCC 1 st Character...	Linear Feature Type	Symbol
H	Hydrology	
P	Non-Visible Feature (boundary)	
R	Railroad	
S	Road	

Table A5A.2.1: MTFCC types and suggested symbolization.

Symbolizing geographic areas:

Symbolize the AIA layer using Fill Color of RGB (255,235,190) with no outline.

Note: AIA participants working on changes for tribal subdivisions may want to use different colors to distinguish one from another.



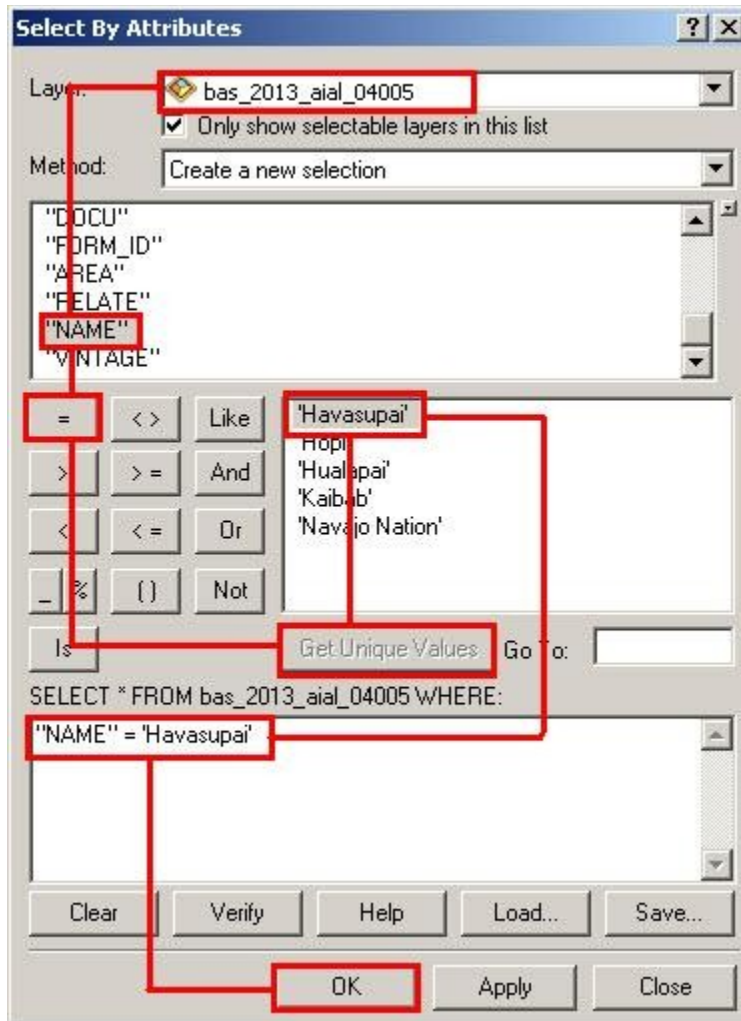
Example A5A.2.2: Suggested map symbolization.

3. Extracting AIA data from Census shapefiles

Note: AIAs submitting for tribal subdivisions skip ahead to Section 5. If you do not have an ArcInfo license, skip ahead to Section 5.

3.1 Filtering the data.

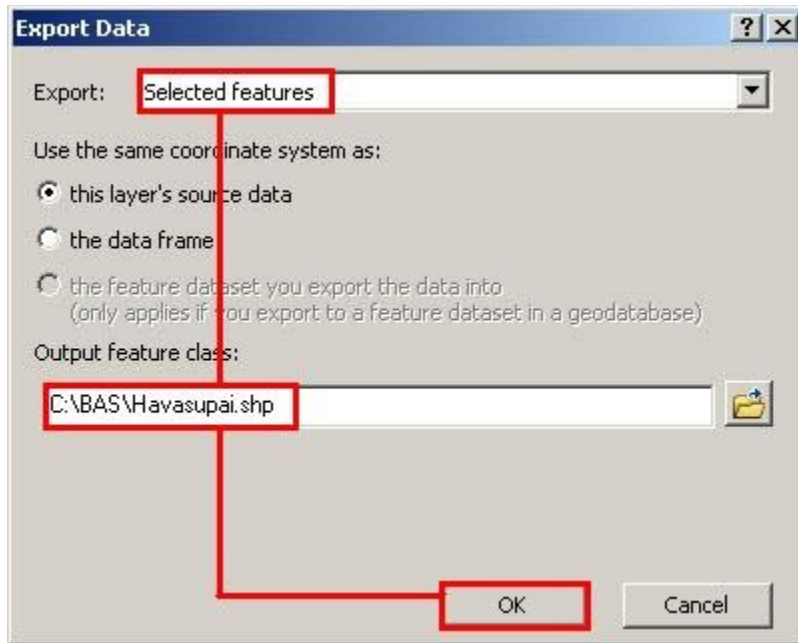
1. In ArcMap, click **Selection** and then click **Select by Attributes**.
2. In the **Select By Attributes** window:
 - From the **Layer** dropdown, select **bas_2013_aial_<ssccc>**.
 - Double click **"NAME"**
 - Left click the **=** button,
 - Click the **Get Unique Values** button
 - In the list, locate and double click the name of the entity. (It will appear in the formula).
 - Click **OK**



Example A5A.3.1.1: Filtering data

3.2 Exporting the data to a new shapefile

1. In the **Table of Contents**, Right click the **AIA layer**, select **Data**, and then click **Export Data**.
2. In the **Export Data** window:
 - From the **Export** dropdown, choose **Selected Features**.
 - In the **Output shapefile or feature class** field, enter a location to save the shapefile.
 - Click **OK**.

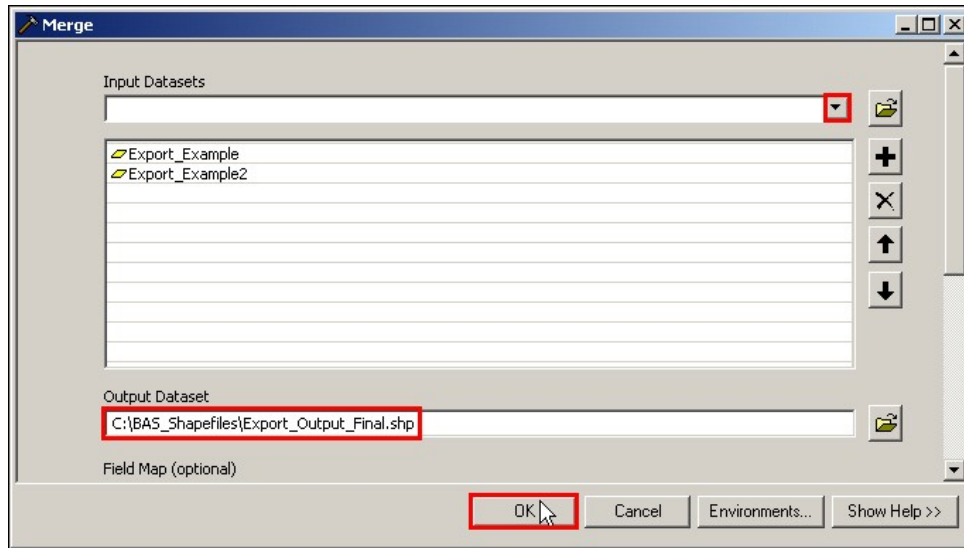


Example A5A.3.2.1: Export Data Window

Note: If the AIA being checked spans more than one county, it will need to be exported from each county's AIA shapefile and merged. Follow the instructions in section 3.3 if the AIA needs to be merged, otherwise skip to section 3.4.

3.3 Merging multipart AIA data (See note above)

1. In **ArcToolbox**, double-click **Data Management Tools**, then double-click **General**, and then double-click **Merge**.
2. In the **Merge** window:
 - Next to the **Input Datasets Input** field, click the arrow and select each layer. (Or use the Browse button to the right of the field to find the layers.)
 - In the **Output Dataset** field, browse to and select a location to save the shapefile.
 - Name the shapefile **Export_Output_Final** or **Merged**, or anything easy to find/remember.
 - Click **OK**.

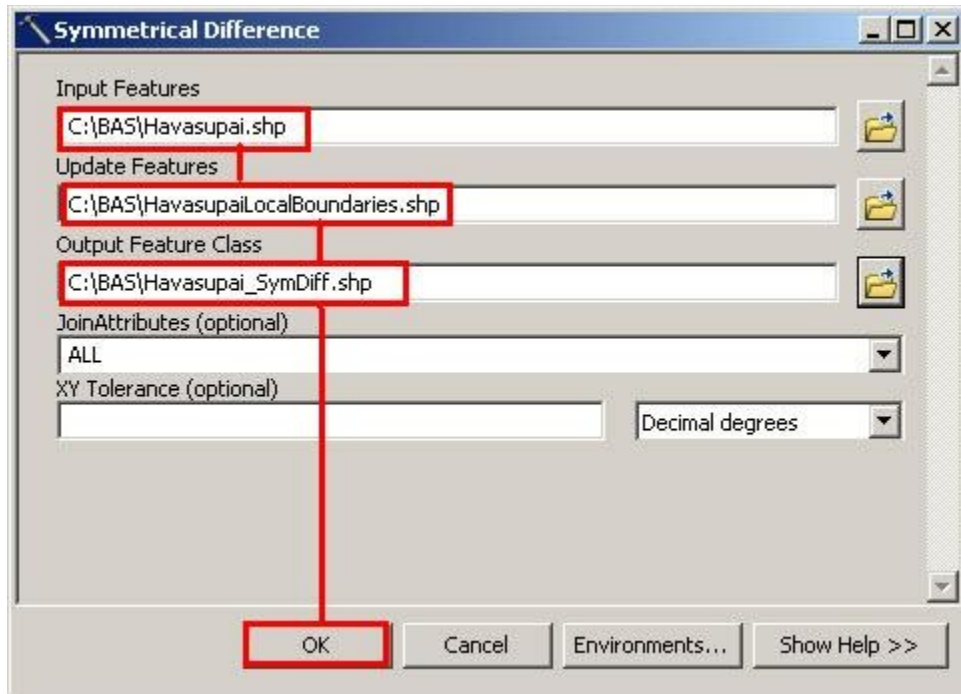


Example A5A.3.3.1: Finalizing the merge process.

4. Creating Change Polygons Using Symmetrical Difference


Note: If you do not have an ArcInfo license you will have to use the **Union** operation rather than the **Symmetrical Difference** operation. See Section 5 if this is the case.

1. In **ArcToolbox**, double-click **Analysis Tools**, then double-click **Overlay**, and then double-click **Symmetrical Difference**.
2. In the **Symmetrical Difference** window:
 - In the **Input Features** field, click the arrow (or browse) and select the layer that was created in Section 3.
 - In the **Update Features** field, click the arrow (or browse) and select the tribal government boundary layer (your data).
 - In the **Output Feature Class** field, browse to and select a location to save the shapefile.
 - o Name the shapefile **Differences_between_BAS_tribal**, **Differences1**, or anything easy to find/remember.
 - Click **OK**.



Example A5A.4.1: Finalizing the Symmetrical Difference process.

Note: This process creates a layer that contains all of the differences between Census Bureau and local boundaries. However, the Symmetrical Difference tool creates multipart polygons that need to be broken up and individually coded.

3. Turn on Editing (using the **Editing** dropdown in the **Editor** toolbar). Select all of the records in the layer that was created in the Symmetrical Difference step.
4. On the **Advanced Editing** toolbar, click the **Explode** tool . The layer will now contain a separate record for each change.

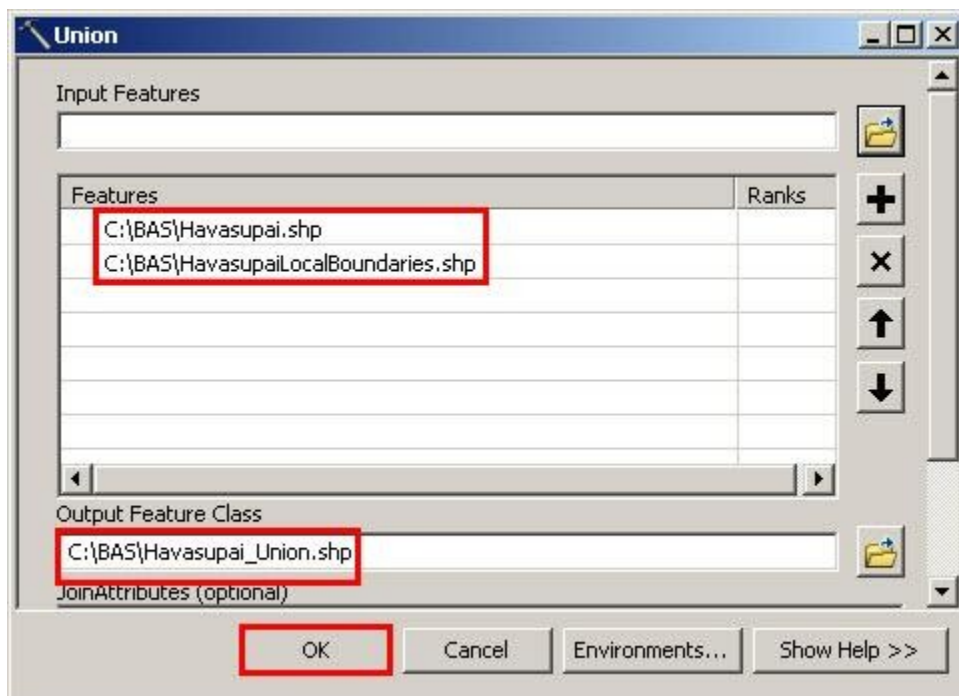
The created layer shows individual change polygons representing the differences between the Census Bureau and tribal entity boundaries. These differences need to be reviewed and coded appropriately.

Skip to Section 6, **Reviewing and Attributing Change Polygons**.

5. Creating Change Polygons Using Union

Note: This method should be used by AIAs reporting for tribal subdivisions or by participants who do not have an ArcInfo license.

1. In **ArcToolbox**, double-click **Analysis Tools**, then double-click **Overlay**, and then double-click **Union**.
2. In the **Union** window:
 - In the **Input Features** field, click the arrow (or browse) and select **bas_2013_aial_<ssccc>**, and the tribe's own layer.
 - In the **Output Feature Class**, browse to and select a location to save the shapefile.
 - o Name the shapefile **Export_Output_union**, or **Union**, or anything easy to find/remember.
 - Click **OK**.



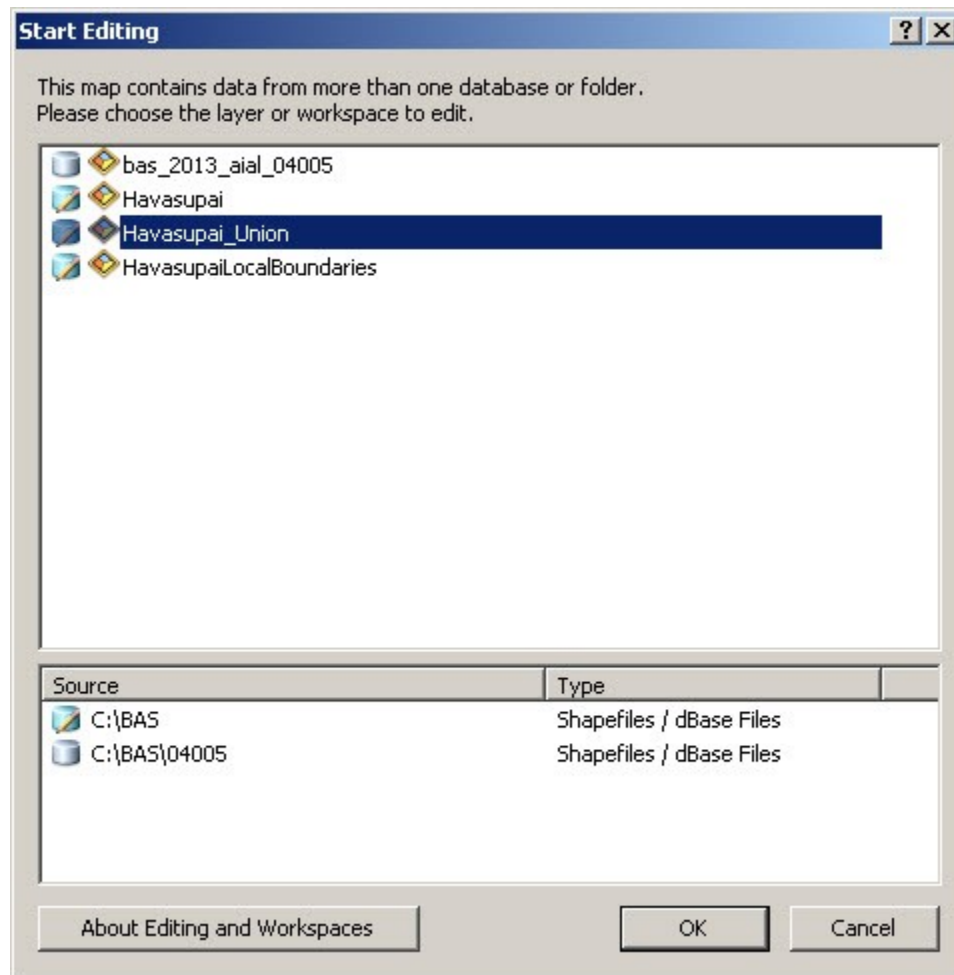
Example A5A.5.1: Finalizing the Union process.

The union operation will create records that contain differences as well as areas that are in common between the Census Bureau and local tribal boundary layers.


The next step is selecting and deleting the areas in common between the Census Bureau and local tribal boundary layers.


3. On the **Editor** toolbar, click **Editor**, and then click **Start Editing**.

4. If a **Start Editing** window opens, in the top pane, click to highlight the union shapefile, and then click **OK**.



Example A5A.5.2: Locating the union shapefile.

5. In **ArcMap**, in the **Tools** toolbar, click the **Select Features**  button.
 - Locate features on the map that the Census Bureau and the local tribal layers have in common.
 - Select each feature individually, or click and hold the left mouse button and drag a box to highlight the common features.
 - Press **Delete**.
 - Repeat these steps until only the features that have changed are left in the map.
6. Once all of the areas in common have been removed from the union shapefile, on the **Editor** toolbar, click **Editor**, and then click **Save Edits**.
7. Select all of the remaining records in the layer that was created in the Union step.

8. On the **Advanced Editing** toolbar, click the **Explode** tool . The layer will now contain a separate record for each change.

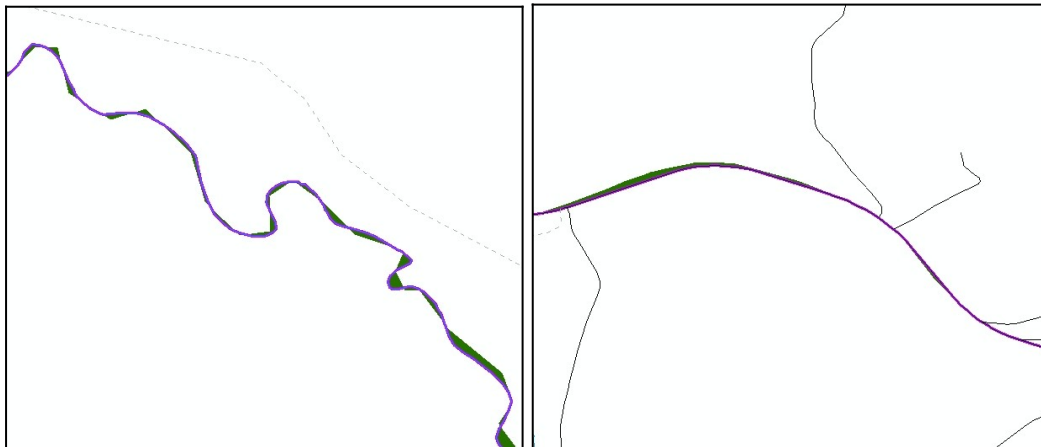
The new layer shows individual change polygons representing the differences between the Census Bureau and the tribal government’s representation of the boundaries. These differences need to be reviewed and coded appropriately. Continue to the next section.

6. Reviewing and Attributing Change Polygons

After the individual change polygons have been created, each must be reviewed and appropriately coded. When reviewing the polygons, be sure to frequently refer to Section 5.7 in the main part of this guide to look for polygons that should be deleted from your submission as well as those that should be snapped to nearby visible features to maintain boundary-to-feature relationships.

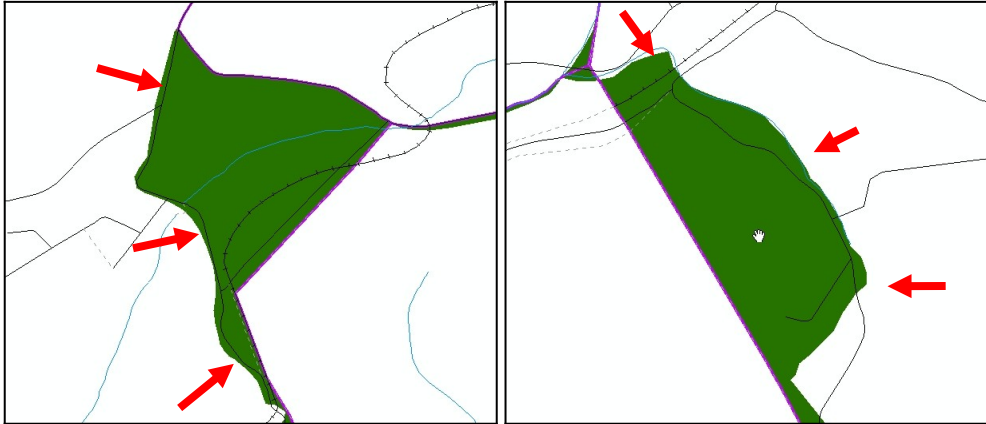
6.1 Examples

- These examples show very small sliver polygons that should be deleted during review as they eliminate boundary-to-feature relationships with a river (left) and a road (right). Furthermore, these boundary corrections also are not located near legal changes or corridor/offset changes (type ‘A’, ‘D’, ‘C’, ‘F’), so they should be removed from consideration.



Example A5A.6.1.1: Small slivers that should be deleted.

- These examples show polygons that should be snapped to roads (left) or rivers (right).



Example A5A.6.1.2: Polygons that should be snapped to roads or rivers.



6.2 Attribute Information

Note: All updates MUST be attributed.



To begin updating attributes

- On the **Editor Toolbar**, click **Editor**, and then click **Start Editing**.



Additions

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the addition polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for an addition.
 - o **NAME**, **CHNG_TYPE**, **DOCU** and **EFF_DATE**.
 - o The **CHNG_TYPE** for an addition is **A**.



Deletions

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the deletion polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for a deletion.
 - o **NAME**, **CHNG_TYPE**, **DOCU** and **EFF_DATE**.
 - o The **CHNG_TYPE** for a deletion is **D**.



Corridors

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the corridor polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for a corridor.
 - **NAME**, **CHNG_TYPE**, **RELATE**.
 - The **CHNG_TYPE** for a corridor changes is **C**.
 - In the **RELATE** field, enter **IN** if the change is adding corridor area to the place or **OUT** if the change is removing corridor area.

Offsets

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the offset polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for an offset.
 - **NAME**, **CHNG_TYPE**, **RELATE**.
 - The **CHNG_TYPE** for an offset change is **F**.
 - In the **RELATE** field, enter **IN** if the change is adding offset area to the place or **OUT** if the change is removing offset area.

Boundary Corrections

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the boundary correction polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for a boundary correction:
 - **NAME**, **CHNG_TYPE**, **RELATE**.
 - The **CHNG_TYPE** for a boundary correction is **B**.
 - In the **RELATE** field, enter **IN** if the boundary correction is adding area or **OUT** if the boundary correction is removing area.

Note: If an AIA is reporting for tribal subdivisions, and a boundary correction to one tribal subdivision affects another, use **RELATE = IN** and **NAME = <entity being added to>**. This is due to the fact that **RELATE = OUT** leaves a question as to whether or not there should be a gap between the two entities.

To finish updating attributes

- Once all of the attribute changes have been made, in the **ArcMap** menu, click **Editor**, and then click **Stop Editing**. (In the **Save** window, click **Yes**.)

7. Renaming and Finalizing Change Polygons

Renaming the shapefile

After creating and coding all change polygons, rename the change polygon layer that will be submitted to the Census Bureau. This process will need to be completed for each level of geography (AIA, tribal subdivision) that has changes.



1. In **ArcMap**, open the **ArcCatalog** tab.
2. In **ArcCatalog**, navigate to shapefile, right-click and select **Rename**.
3. Save the output shapefile in the proper naming convention:
bas13_<basID>_changes_aiannh.

Note: The **basID** numbers can be found on the Census Data disc or BAS form.

See section 5.8.4 for instructions on zipping updates.

Submitting the shapefile

It is requested that BAS zip files be submitted using the Census Bureau's **Send a File Utility** site. Submit only the zip file. The **Send a File Utility** is located at:

<https://secure.census.gov/cgi-bin/sendfile>

1. In a web browser, navigate to <https://secure.census.gov/cgi-bin/sendfile>.
2. In the password window:
 - o In the **User name** field, enter: **geobas**
 - o In the **Password** field, enter: **GEO1upload2010!**
 - o Click **OK**
3. In the **Send a File Utility** window, in the **Source Information** section; next to the **File to Send** field, click **Browse**.
4. In the **Choose File** window, navigate to the appropriate folder, select the zip file, and then click **Open**.
5. In the **Notify by E-mail** section:
 - o In the **Sender's Email Address** field, enter your email address
 - o In the **Census Bureau Employee's E-Mail Address** field, enter 'geo.bas@census.gov'
 - o Click **Upload**

Note: Filling out the **Notify by E-mail** section will allow Census to send notice that the return zip file has been received. If there are any questions contact the Census Bureau at 301-763-1099, 800-972-5651 or geo.aiana@census.gov.

Appendix 5B: 2013 Digital BAS – Example Process 2

Note: This example uses an AIA. An AIA reporting for tribal subdivisions may use the same process.

1. Required Files:

A. Census Bureau Shapefiles

- If Digital BAS materials were sent on CD, a zip file with all of the necessary shapefiles should be on the CD. Use these materials to create the Digital BAS submission for 2013.
- If Digital BAS materials were downloaded from the Census website, the file names will be slightly different. The prefix will begin with **PVS** (e.g., **PVS_12_v2_edges_<ssccc>.shp**). Throughout this guide, Census uses the prefix of **bas_2013**, but the **PVS files** are exactly the same.

Note: Contact the Census Bureau at 301-763-1099, 800-972-5651 or **geo.aiana@census.gov** with any questions.

Copy the data to a hard drive/server, and unzip the data to ensure that the correct data has been sent. For an AIA, these layers are critical:

- **bas_2013_aial_<ssccc>.shp**
- **bas_2013_edges_<ssccc>.shp**

Note: <ssccc> represents the two-digit state code and three-digit county code.

The shapefiles should include the home county/counties for all of your reservation and trust land as well as all adjacent counties.

Note: Census suggests that participants make an extra copy of the data in case an emergency backup is needed.

B. Local Data

The minimum data necessary is a shapefile showing your jurisdiction boundary or additions and deletions. Other local data layers which may be helpful if available include centerline data, hydrological, railroad, or other linear feature data, and imagery.

2. Symbolizing layers in ArcGIS

The following are suggestions for symbolizing Census data in ArcGIS.

For the Edges layer, symbolize the linear features by grouping like MTFCC codes (codes sharing the same first character). See Table A4B.2.1:





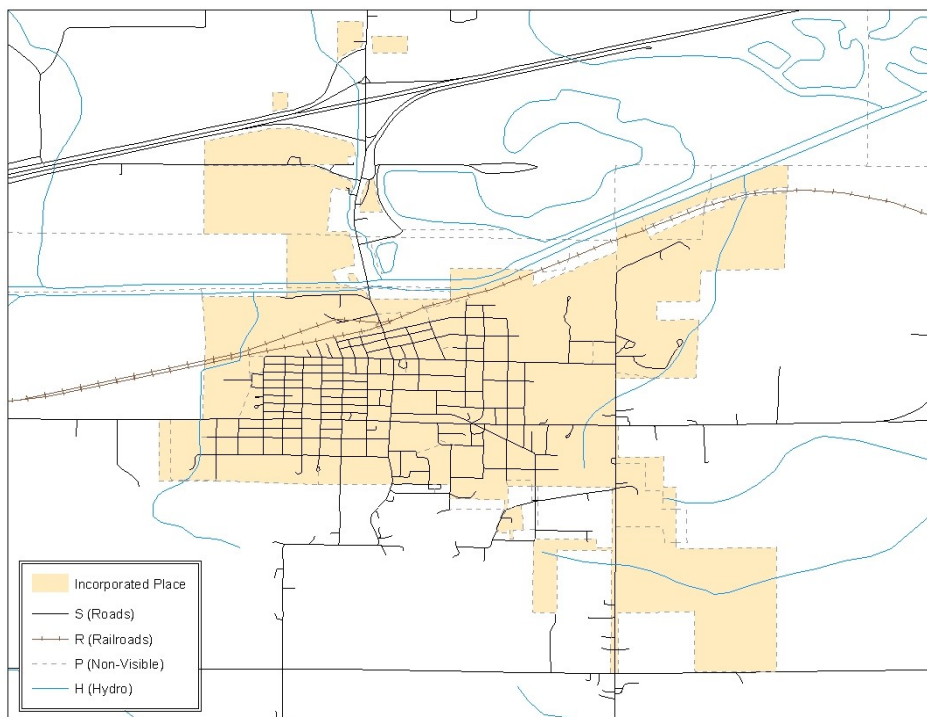
MTFCC 1 st Character...	Linear Feature Type	Symbol
H	Hydrology	
P	Non-Visible Feature (boundary)	
R	Railroad	
S	Road	

Table A4B.2.1: MTFCC types and suggested symbolization.

Symbolizing geographic areas:

Symbolize the AIA layer using Fill Color of RGB (255,235,190) with no outline.

Note: AIA participants reporting for tribal subdivisions may want to use different colors to distinguish one from another.



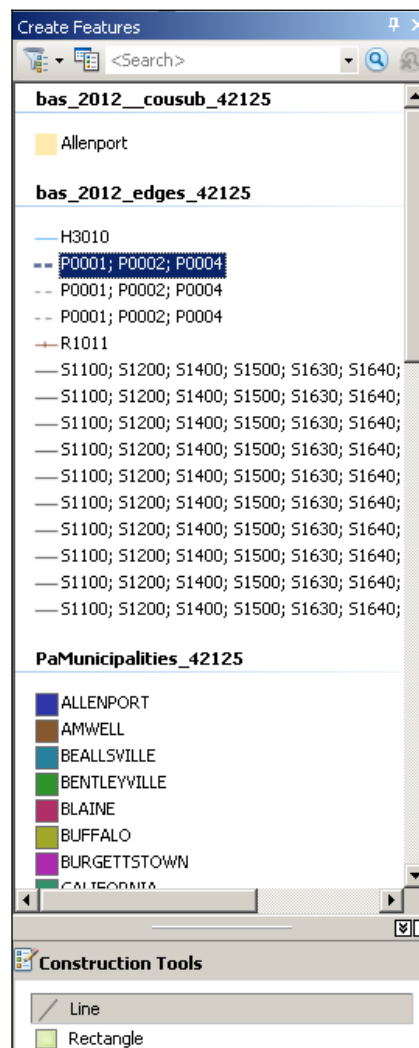
Example A5B.2.2: Suggested map symbolization.

3. Creating and Splitting Linear features

3.1 Creating new linear features

Some of the linear features that are needed to create change polygons may not exist in the MAF/TIGER database. Therefore it may be necessary to create and split lines when forming changes. The existing and newly created linear features will then be selected to define the boundary changes.

1. In **ArcMap**, right click the edges layer in the **Table of Contents**, click **Selection**, and then click **Make This The Only Selectable Layer**, so that the edges layer is the only one which can be selected while editing.
2. In the **Editor** toolbar, click **Editor** and then click **Start Editing**.
3. In the **Create Features** window, highlight a non-visible boundary symbolization under the edges layer: **bas_2013_edges_<ssccc>**.




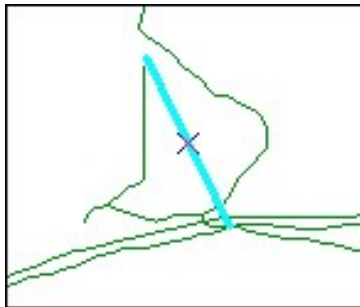
Example A5B.3.1.1: Create Features window.

4. In the **Editor** toolbar, click **Editor** and then click **Snapping**, then **Snapping Toolbar**.
5. On the snapping toolbar, ensure that **Point**, **Vertex**, **Edge**, and **End Snapping** are all enabled. Drop down the Snapping menu, and ensure that **Use Snapping** is checked. Snapping will ensure that newly created lines will follow existing MAF/TIGER linear features.



Example A5B.3.1.2: Snapping toolbar


6. For any new boundary lines that do not follow existing edges, ensure that **Line** is suggested in the **Construction Tools** pane (see Example A4B.3.1.1), and in the **Editor** toolbar, click the **Straight Segment Tool**  button and draw new features on the map by clicking to create a line. Single clicking will add vertexes to the line, and double-clicking will end the line and create the new feature. Any new feature(s) will be highlighted.



Example A5B.3.1.3: A newly created linear feature

Adding attribute data to new linear features

After creating new linear features:



7. In the **Editor** toolbar, click the **Attributes**  button.
8. In the **Attributes** window, in the **MTFCC** field, add the appropriate MTFCC code (it should default to **P0001**, but can be changed if necessary).
 - Use **P0001** if the feature is a non-visible political boundary.
 - If the feature is visible, see **Appendix 6** for the appropriate codes.

Note: An MTFCC code must be added for each new feature. If larger scale linear feature changes are going to be submitted, it is best to create those in a separate layer. It is not necessary to submit linear feature changes for non-visible boundaries.

Click on **Editor** and then click **Save Edits** often so that work is not lost.

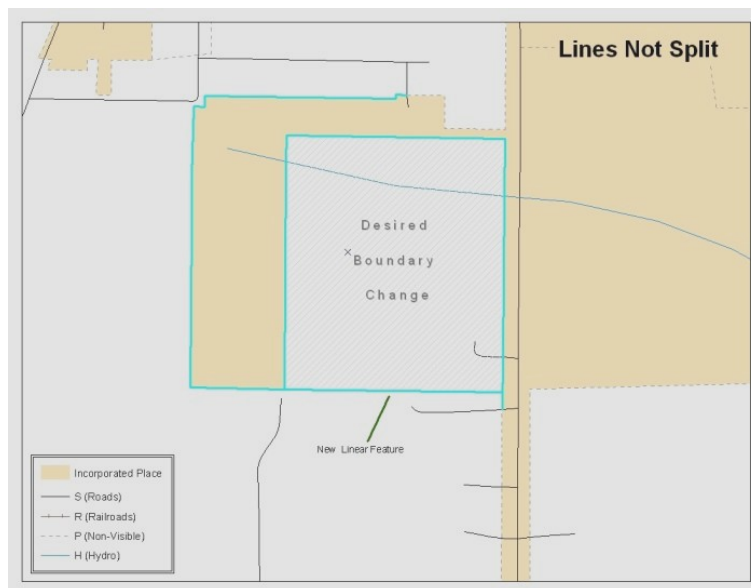
9. Once all lines are added, in the **Editor** toolbar, click **Editor** and then click **Stop Editing** (In the **Save** window, click **Yes**.)

3.2 Splitting linear features

1. In the **Editor** toolbar, click **Editor** and then click **Start Editing**.
2. In the **Editor** toolbar, click the **Edit Tool**  button and select a linear feature that needs to be split. The line will be highlighted when it is selected.
3. In the **Editor** toolbar, click the **Split Tool**  button. Click the line where it needs to be split.

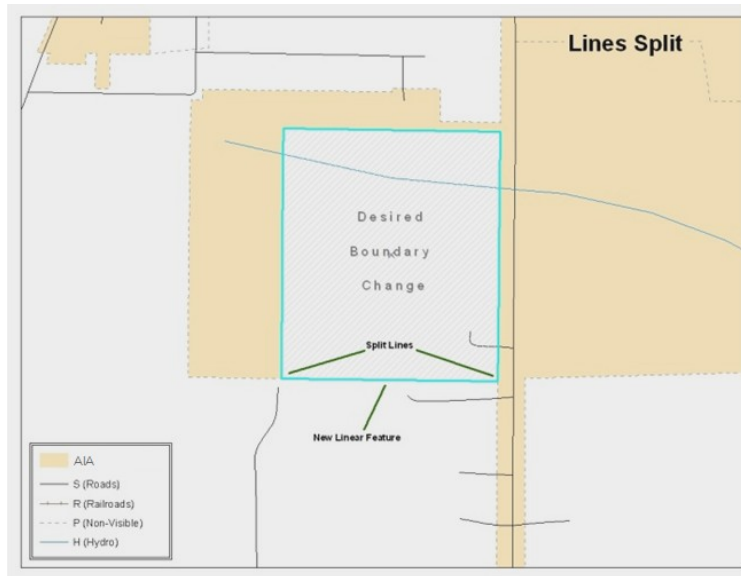
The following examples display why it may be necessary to split lines when creating change polygons.

The desired boundary change is indicated below. When selecting the lines to form the boundary change, sections of the linear features that are not a part of the boundary update are included (highlighted in blue).



Example A5B.3.2.1: Linear feature selection before being split

The existing linear features can be split to prevent unwanted line segments from being selected as part of the boundary update.




Example A5B.3.2.2: Linear feature selection after being split

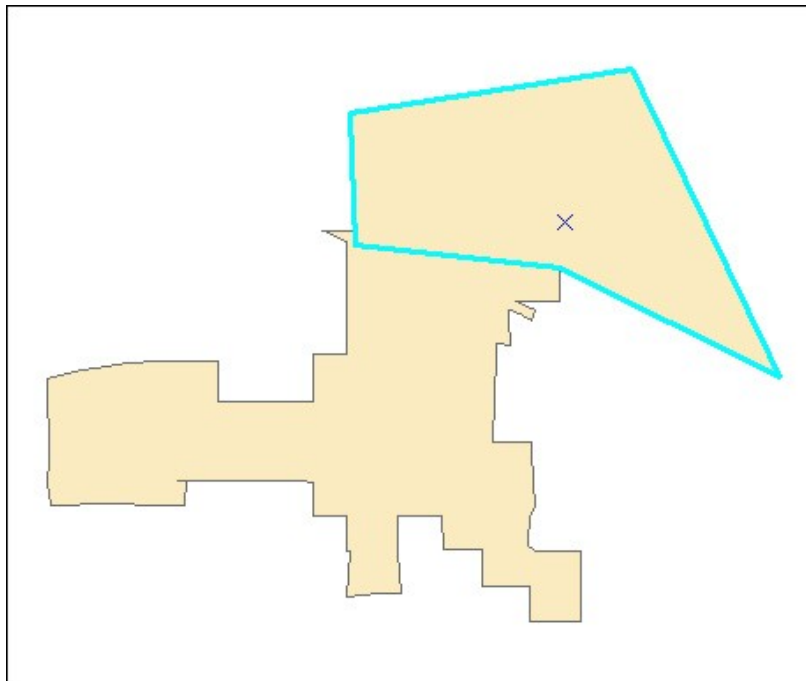
4. Once all necessary splits are made, in the **Editor** toolbar, click **Editor** and then click **Save Edits**.

3.3 Selecting Lines and Creating Change Polygons


After creating and/ or splitting any necessary linear features, they must be selected to form change polygons. Each change polygon must be created and coded separately.

Creating change polygons

1. If the **Topology** toolbar is not active, click the **Customize** menu, select **Toolbars**, and then select **Topology** to activate it.
2. In the **Editor** toolbar, click **Editor** and then click **Start Editing**.
3. In the **Create Features** window, switch the highlighted feature to the **aia** layer: **bas_2013_aial_<ssccc>**.
4. In the **Editor** toolbar, click the **Edit Tool**  button and select the linear features that comprise the boundary of a change polygon (i.e. an addition, deletion, or incorrect area) by holding the **Shift** key while clicking each linear feature segment.



Example A5B.3.3.1: Selecting the linear features of a change polygon.

5. On the **Topology** toolbar, click the **Construct Features**  button.
 - In the **Construct Features** dialog box, click **OK**. (The default **Cluster Tolerance** is acceptable.)

The polygon is now part of the AIA layer; however, it will not have any associated attribute values (see the next section).



Example A5B.3.3.2: Newly created AIA feature.

3.4 Attributing Change Polygons



After each change polygon has been created, it must be correctly attributed so that the boundaries can be appropriately updated in the MAF/TIGER database. Another option is to update the attributes for each change polygon after creating all boundary changes. The following steps will explain which attributes are mandated for each type of boundary change.

Note: All updates MUST be attributed.

To begin updating attributes



- In **ArcMap**, right click the AIA layer in the **Table of Contents**, click **Selection**, and then click **Make This The Only Selectable Layer**, so that the AIA layer is the only one which can be selected while editing
- On the **Editor Toolbar**, click **Editor**, and then click **Start Editing**.

Additions



- On the **Editor Toolbar**, click the **Edit Tool**  button and select the addition polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for an addition.
 - o **NAME**, **CHNG_TYPE**, **DOCU** and **EFF_DATE**.

- o The **CHNG_TYPE** for an addition is **A**.



Deletions

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the deletion polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for a deletion.
 - o **NAME, CHNG_TYPE, DOCU** and **EFF_DATE**.
 - o The **CHNG_TYPE** for an addition is **D**.



Corridors

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the corridor polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for a corridor.
 - o **NAME, CHNG_TYPE, RELATE**.
 - o The **CHNG_TYPE** for a corridor changes is **C**.
 - o In the **RELATE** field, enter **IN** if the change is adding corridor area to the place or **OUT** if the change is removing corridor area.

Offsets

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the offset polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for an offset.
 - o **NAME, CHNG_TYPE, RELATE**.
 - o The **CHNG_TYPE** for an offset change is **F**.
 - o In the **RELATE** field, enter **IN** if the change is adding offset area to the place or **OUT** if the change is removing offset area.

Boundary Corrections

- On the **Editor Toolbar**, click the **Edit Tool**  button and select the boundary correction polygon.
- On the **Editor Toolbar**, click the **Attributes**  button.
- In the **Attributes** window, fill out the mandatory fields required for a boundary correction:
 - o **NAME, CHNG_TYPE, RELATE**.
 - o The **CHNG_TYPE** for a boundary correction is **B**.
 - o In the **RELATE** field, enter **IN** if the boundary correction is adding area or **OUT** if the boundary correction is removing area.

Note: If an AIA is reporting for tribal subdivisions, and a boundary correction to one tribal subdivision affects another, use **RELATE = IN** and **NAME = <entity being added to>**. This is due to the fact that **RELATE = OUT** leaves a question as to whether or not there should be a gap between the two entities.

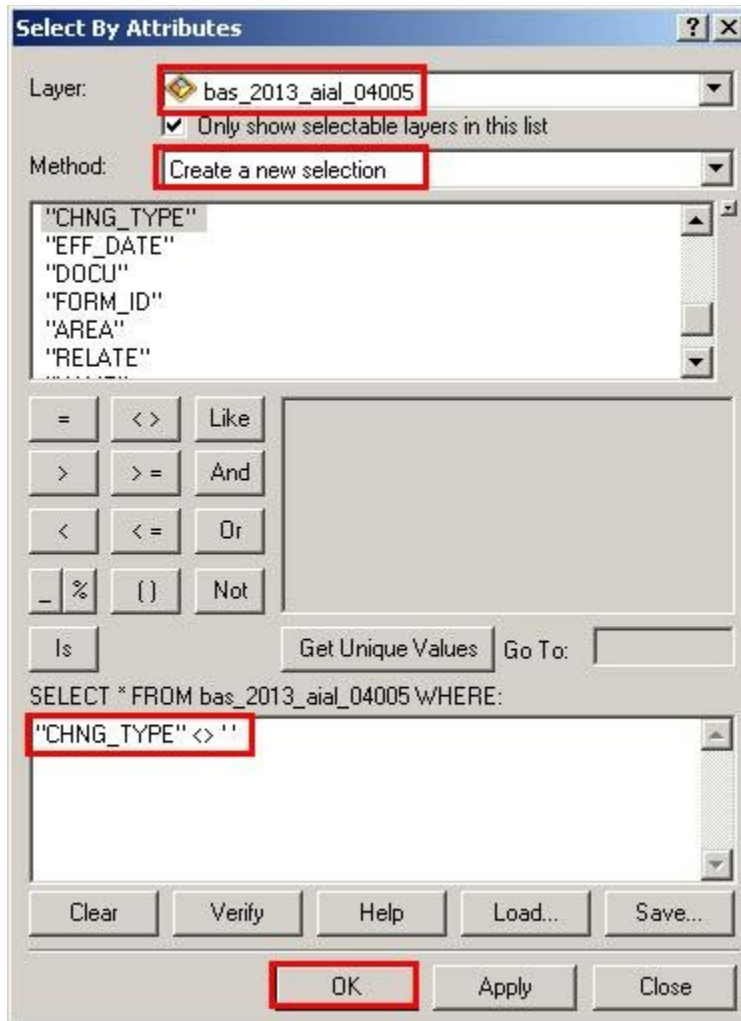
To finish updating attributes

- Once all of the attribute changes have been made, on the **Editor** toolbar, click **Editor**, and then click **Stop Editing**. (In the **Save** window, click **Yes**.)

3.5 Exporting Change Polygons

After creating and coding the change polygons, each level of geography (AIA, tribal subdivision) that has changes must be exported to a separate change polygon layer.

1. In ArcMap, click **Selection** and then click **Select by Attributes**.
2. In the **Select By Attributes** window:
 - Set the **Layer** dropdown to the AIA layer: **bas_2013_aial_<ssccc>**.
 - Set the **Method** dropdown to **Create a new selection**.
 - In the **Select * FROM** box, type one of the following formulas:
 - o **“CHNG_TYPE” < > ‘ ’** This equation would select all change polygons that have any change type which have been created and coded.
 - o **“CHNG_TYPE” = ‘A’ OR “CHNG_TYPE” = ‘B’ OR...** (etc.) This equation can be written to select a specific change type for polygons that were created and coded.
 - Click **OK**



Example A5B.3.5.1: Select all change types formula

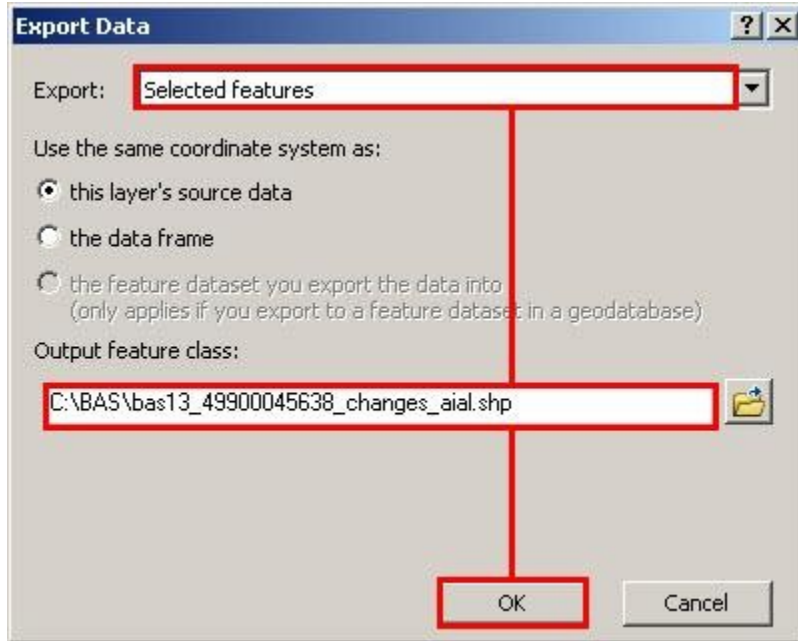
After clicking **OK**, each change polygon that that has been created and coded should be highlighted on the map and in the attribute table.

Optional: Open the attribute table and sort to verify that all change polygons with a change type code were selected.

Exporting the selected change polygons

1. In the **ArcMap Table of Contents**, right-click on the AIA layer (**bas_2013_aial_<ssccc>**), select **Data**, and then click **Export Data**.
2. In the **Export Data** window:
 - From the **Export** dropdown, choose **Selected Features**.
 - In the **Output shapefile or feature class:** field, browse to and select a location to save the shapefile.
 - o Name the shapefile **bas13_<basID>_changes_aiannh.shp**.

- Click **OK**.



Example A5B.3.5.2: Exporting Data

Note: The **basID** numbers can be found on the Census Data disc or BAS form.

See section 5.8.4 for instructions on zipping updates.

Submitting the shapefile

It is requested that BAS zip files be submitted using the Census Bureau's **Send a File Utility** site. Submit only the zip file. The **Send a File Utility** is located at:

<https://secure.census.gov/cgi-bin/sendfile>

1. In a web browser, navigate to <https://secure.census.gov/cgi-bin/sendfile>.
2. In the password window:
 - o In the **User name** field, enter: **geobas**
 - o In the **Password** field, enter: **GEO1upload2010!**
 - o Click **OK**
3. In the **Send a File Utility** window, in the **Source Information** section; next to the **File to Send** field, click **Browse**.
4. In the **Choose File** window, navigate to the appropriate folder, select the zip file, and then click **Open**.
5. In the **Notify by E-mail** section:
 - o In the **Sender's Email Address** field, enter your email address
 - o In the **Census Bureau Employee's E-Mail Address** field, enter 'geo.bas@census.gov'
 - o Click **Upload**

Note: Filling out the **Notify by E-mail** section will allow Census to send notice that the return zip file has been received. If there are any questions contact the Census Bureau at 301-763-1099, 800-972-5651 or geo.aiana@census.gov.

Appendix 6: MTFCC Codes

MTFCC Codes

MTFCC Code	MTFCC Description (Short)	MTFCC Description (Long)
C3022	Mountain Peak or Summit	Prominent elevation rising above the surrounding level of the Earth's surface
C3023	Island	Area of dry or relatively dry land surrounded by water or low wetland (archipelago, atoll, cay, hammock, hummock, isla, isle, key, moku, rock)
C3024	Levee	Natural or manmade embankment flanking a stream (bank, berm)
C3026	Quarry (not water-filled), Open Pit Mine or Mine	Place or area from which commercial minerals are or were removed from the Earth; not including oilfield
C3027	Dam	Water barrier or embankment built across the course of a stream or into a body of water to control and (or) impound the flow of water (breakwater, dike, jetty)
C3061	Cul de sac	A street that is closed at one end with a circular turnaround area and only one outlet
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
C3070	Tower/beacon	A manmade structure, higher than its diameter, generally used for observation, storage, or electronic transmission
C3071	Lookout Tower	A manmade structure, higher than its diameter used for observation
C3072	Transmission Tower including cell, radio and TV	A manmade structure, higher than its diameter used for electronic transmission
C3073	Water Tower	A manmade structure, higher than its diameter used for water storage
C3074	Lighthouse Beacon	A manmade structure, higher than its diameter used for transmission of light generally to aid in navigation
C3075	Tank/Tank Farm	A manmade structure(s), higher than its diameter used for liquid (other than water) or gas storage
C3076	Windmill Farm	A manmade structure(s) used to generate power from the wind
C3077	Solar Farm	A manmade structure(s) 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	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	Point on the ground whose position (horizontal or vertical) is known and can be used as a base for additional survey work
C3081	Locality Point	This feature represents points that identify locations and names of unbounded localities e.g., crossroads, community names, names from the Geographic Names Information System (GNIS).
C3088	Landfill	A disposal facility at which solid waste is placed on or in the land
H2025	Swamp/Marsh	A poorly drained Wetland, fresh or saltwater, wooded or grassy, possibly covered with open water (bog, cienega, marais, marsh, pocosin)
H2030	Lake/Pond	A natural body of inland water (backwater, lac, lagoon, laguna, pond, pool, resaca, waterhole)
H2040	Reservoir	An artificially impounded body of water (lake, tank)
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 (arm, bight, cove, inlet)
H2053	Ocean/Sea	Large body of salt water (gulf, ocean)
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 or stream 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 (ice field, ice patch, snow patch)
H3010	Stream/River	A linear body of water flowing on the Earth's surface (anabranch, awawa, bayou, branch, brook, creek, distributary, fork, kill, pup, rio, river, run, slough)
H3013	Braided Stream	A body of water flowing on the Earth's surface that is separated into multiple channels
H3020	Canal, Ditch or Aqueduct	A manmade waterway used by watercraft or for drainage, irrigation, mining, or water power (ditch, lateral)

K1100	Housing Unit Location	
K1121	Apartment Building or Complex	
K1122	Rooming or Boarding House	
K1223	Trailer Court or Mobile Home Park	
K1225	Crew-of-Vessel Location	
K1226	Housing Facility/Dormitory for Workers	
K1227	Hotel, Motel, Resort, Spa, Hostel, YMCA, or YWCA	
K1228	Campground	
K1229	Shelter or Mission	
K1231	Hospital/Hospice/Urgent Care Facility	One or more structures where the sick or injured may receive medical or surgical attention (infirmary)
K1232	Halfway House/Group Home	
K1233	Nursing Home, Retirement Home, or Home for the Aged	
K1234	County Home or Poor Farm	
K1235	Juvenile Institution	
K1236	Local Jail or Detention Center	
K1237	Federal Penitentiary, State Prison, or Prison Farm	
K1238	Other Correctional Institution	
K1239	Convent, Monastery, Rectory, Other Religious Group Quarters	
K1241	Sorority, Fraternity, or College Dormitory	
K1251	Military Group Quarters	
K2100	Governmental	
K2110	Military Installation	This feature represents areas owned and/or occupied by the Department of Defense for use by a branch of the armed forces, including the Army, Navy, Air Force, Marines, Coast Guard, and include state owned areas for the use of the National Guard.
K2146	Community Center	
K2165	Government Center	
K2167	Convention Center	
K2180	Park	This feature represents parklands defined and administered by Federal State and Local governments.
K2181	National Park Service Land	National Park Service Land
K2182	National Forest or Other Federal Land	National Forest or Other Federal Land
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	

K2194	Police Station	
K2195	Library	
K2196	City/Town Hall	
K2197	Mixed Use/Other Non-residential	
K2300	Commercial Workplace	
K2361	Shopping Center or Major Retail Center	
K2362	Industrial Building or Industrial Park	
K2363	Office Building or Office Park	
K2364	Farm/Vineyard/Winery/Orchard	Farm/Vineyard/Winery/Orchard
K2366	Other Employment Center	
K2400	Transportation Terminal	
K2424	Marina	
K2432	Pier/Dock	
K2451	Airport or Airfield	A manmade facility maintained for the use of aircraft (airfield, airstrip, landing field, landing strip)
K2452	Train Station, Trolley or Mass Transit Rail Station	
K2453	Bus Terminal	
K2454	Marine Terminal	
K2455	Seaplane Anchorage	
K2456	Airport - Intermodal Transportation Hub/Terminal	
K2457	Airport - Statistical Representation	
K2458	Park and Ride Facility /Parking Lot	
K2459	Runway/Taxiway	
K2460	Helicopter Landing Pad	
K2500	Other Workplace	
K2545	Museum, Visitor Center, Cultural Center, or Tourist Attraction	
K2561	Golf Course	
K2564	Amusement Center	
K2582	Cemetery	A place or area for burying the dead (burial, burying ground, grave, memorial garden)
K2586	Zoo	
L4010	Pipeline	
L4020	Powerline	
L4040	Conveyor	
L4110	Fence Line	
L4121	Ridge Line	
L4125	Cliff/Escarpment	A very steep or vertical slope (bluff, crag, head, headland, nose, palisades, precipice, promontory, rim, rimrock)
L4130	Point-to-Point Line	

L4140	Property/Parcel Line (Including PLSS)	
L4165	Ferry Crossing	
P0001	Nonvisible Linear Legal/Statistical Boundary	
P0002	Perennial Shoreline	
P0003	Intermittent Shoreline	
P0004	Other non-visible bounding Edge (e.g., Census water boundary, boundary of an areal feature)	
R1011	Railroad Feature (Main, Spur, or Yard)	Rail feature refers to a line of fixed rails or tracks that form railways or railroads, spurs, and rail yards. They are used for the transport of passengers and goods.
R1051	Carline, Streetcar Track, Monorail, Other Mass Transit Rail	Carline, Streetcar Track, Monorail, and other mass transit refer to various forms of rail transport that has one or more than one track on which monorails or streetcars run. These tracks are typically in urban areas.
R1052	Cog Rail Line, Incline Rail Line, Tram	Cog Rail Line, Incline Rail Line are railways with a special toothed rack rail or rack mounted on the railroad ties between the running rails. The trains are fitted with one or more cog wheels that mesh with this rack rail. This allows the trains to operate on steeply inclined slopes. A Tram is a cable car, especially one suspended from an overhead cable, or a wheeled vehicle that runs on rails and is propelled by electricity.
S1100	Primary Road	Primary Road
S1200	Secondary Road	Secondary Road
S1400	Local Neighborhood Road, Rural Road, City Street	Local Neighborhood Road, Rural Road, City Street
S1500	Vehicular Trail (4WD)	Vehicular Trail (4WD)
S1630	Ramp	Ramp
S1640	Service Drive usually along a limited access highway	Service Drive usually along a limited access highway
S1710	Walkway/Pedestrian Trail	Walkway/Pedestrian Trail
S1720	Stairway	Stairway
S1730	Alley	Alley
S1740	Private Road for service vehicles (logging, oil fields, ranches, etc.)	Private Road for service vehicles (logging, oil fields, ranches, etc.)
S1750	Private Driveway	Private Driveway
S1780	Parking Lot Road	Parking Lot Road
S1820	Bike Path or Trail	Bike Path or Trail
S1830	Bridle Path	Bridle Path
S2000	Road Median	Road Median

Table A6: Select MTFCC Codes