

Updating the Census Bureau's MAF & TIGER: GSS-I, BAS, etc.

NJ State Data Center

New Brunswick, NJ

David Kraiker

18-June-2014

Updating Census TIGER:

Addresses - > GSS-I

Street Features -> GSS-I

Boundaries - > BAS

Key Components of the GSS-I

An integrated program that utilizes a partnership program for:

- Improved address coverage
- Annual, transaction-based address and spatial feature updates
- Enhanced quality assessment and measurement

Address Updates



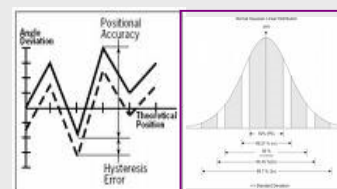
123 Testdata Road
Anytown, CA 94939

Lat 37 degrees, 9.6 minutes N
Lon 119 degrees, 45.1 minutes W

Street/Feature Updates



Quality Measurement



The GSS-I Partnership Program

- Launched in October 2012
- Opportunity for tribal, state, county, and local governments to continually exchange address & spatial data with the Census Bureau
- Recognizes local governments as a definitive authority for quality address and street data within their communities
- Leverages the Census Bureau's broad partner network to encourage participation

Benefits of Participation

1. Expanded ROI – encourages re-use of local government geospatial data investment
2. Reduces redundant federal data collection efforts
3. Increases usage of high-quality local government data for multiple federal programs, including the 2020 Census and the USGS National Map
4. Provide maximum input into the American Community Survey and closes the gap between partner addresses and Census addresses for Local Update of Census Addresses (LUCA) program in 2020.

What is the Basic Process?

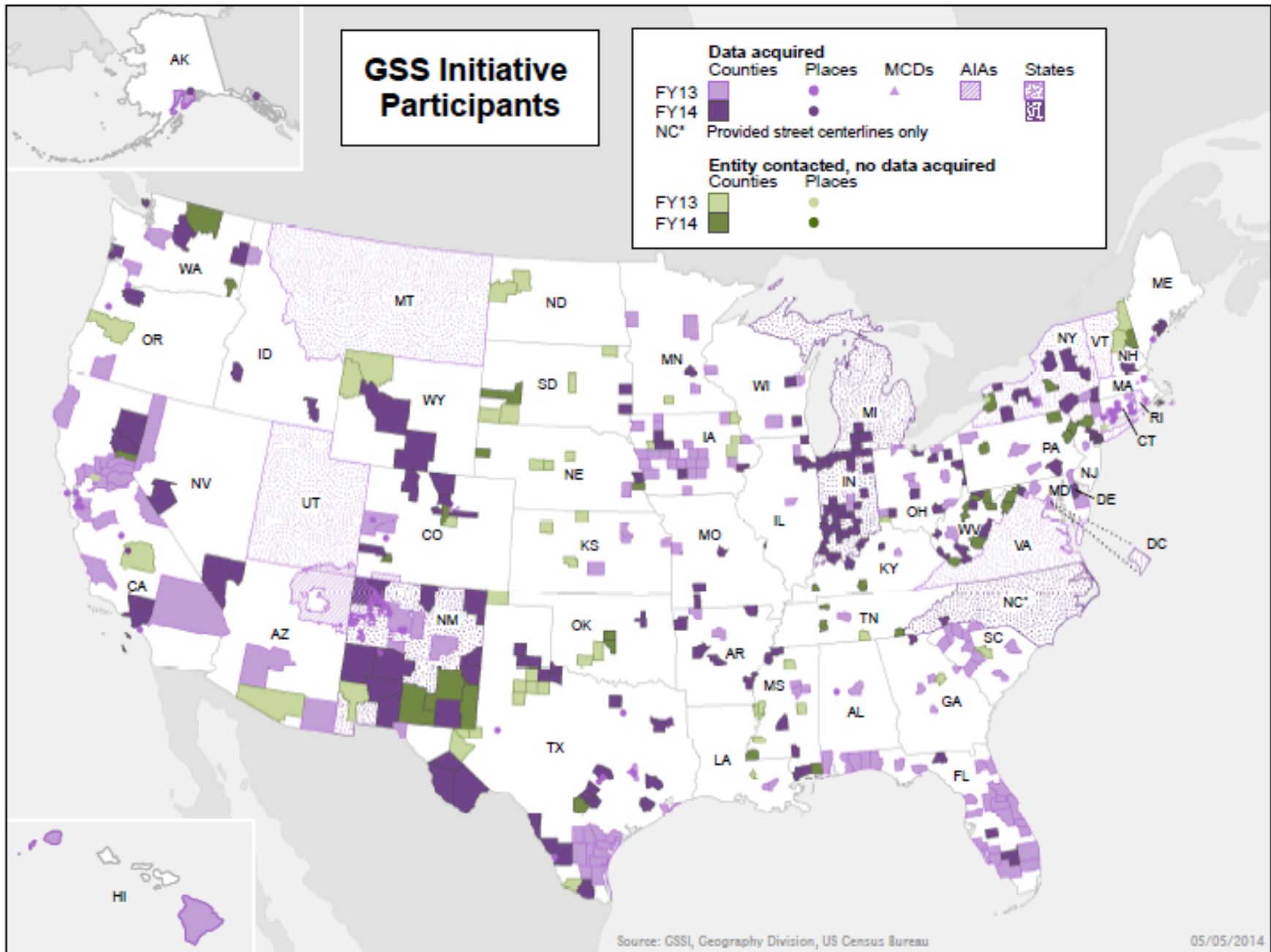
1. Acquire partner data and perform Content Verification to determine general usability
2. Crosswalk, standardize, match, and geocode partner addresses and structure points using the Master Address File (MAF)
3. Match street centerline data to identify differences.
4. Ideal Scenario: new addresses are added to the MAF, new streets are added to TIGER, address and spatial inconsistencies are submitted for resolution

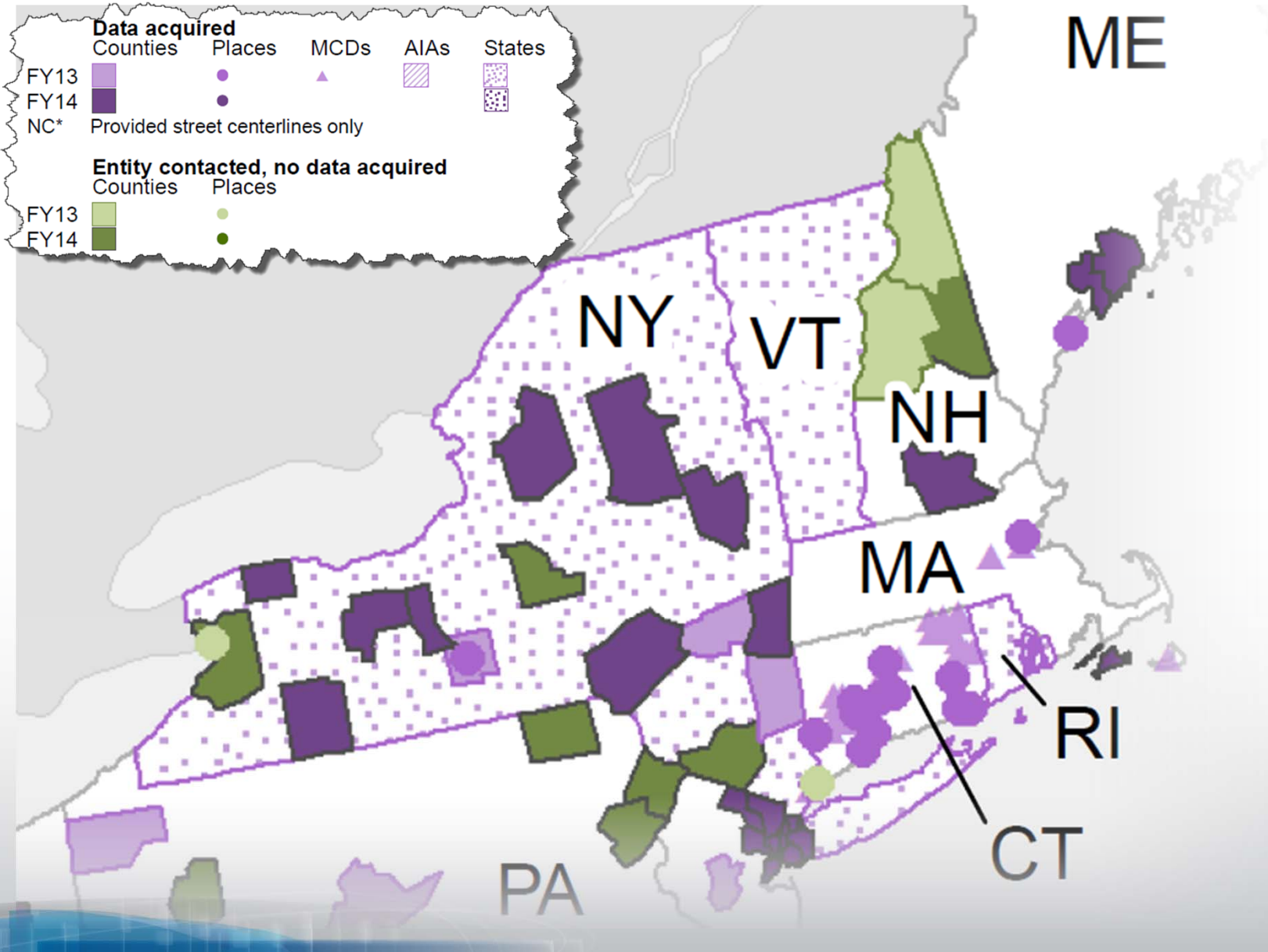
Data Content Guidelines

- The Census Bureau has released Data Content Guidelines to describe the minimal and optimal information required for Addresses (including structure points), Street Centerlines, and Metadata provided by partners for the GSS-I
- Data Content Guidelines are located at:

<http://www.census.gov/geo/www/gss/gdlns/addgdln.html>

Partner Data Acquisition and Content Verification





NJ Counties submitted to GSS-I (as of May 21, 2014)

Bergen
Passaic
Essex
Hudson

Observations from Content Verification

- Incomplete metadata – projection, datum, data dictionaries, etc.
- Coverage gaps – some counties excluded data for incorporated cities within their legal jurisdiction
- Frequent call-backs for explanations and missing data – i.e., missing Interstate Highway layer, cryptic building use codes, etc.
- Failure to meet minimum Street Feature Guidelines – limits the uses for partner-provided data (i.e., street matching, attribute harvesting, coordinate enhancement)

Partner Address Matching & Geocoding

Minimum Address Guidelines - MATCHING

To successfully match to the MAF, a partner address must include:

- Complete Address Number
- Complete Street Name

and AT LEAST ONE OF THE FOLLOWING:

- Address Coordinate (latitude, longitude)
- ZIP Code
- Postal City and State
- Census 2010 Tabulation State, County, Tract and Block Code

This minimum information allows the Census Bureau to update the source data for an existing MAF address record, adding to our confidence that the address is valid.

Block Level Address Feedback

Consists of block tallies detailing:

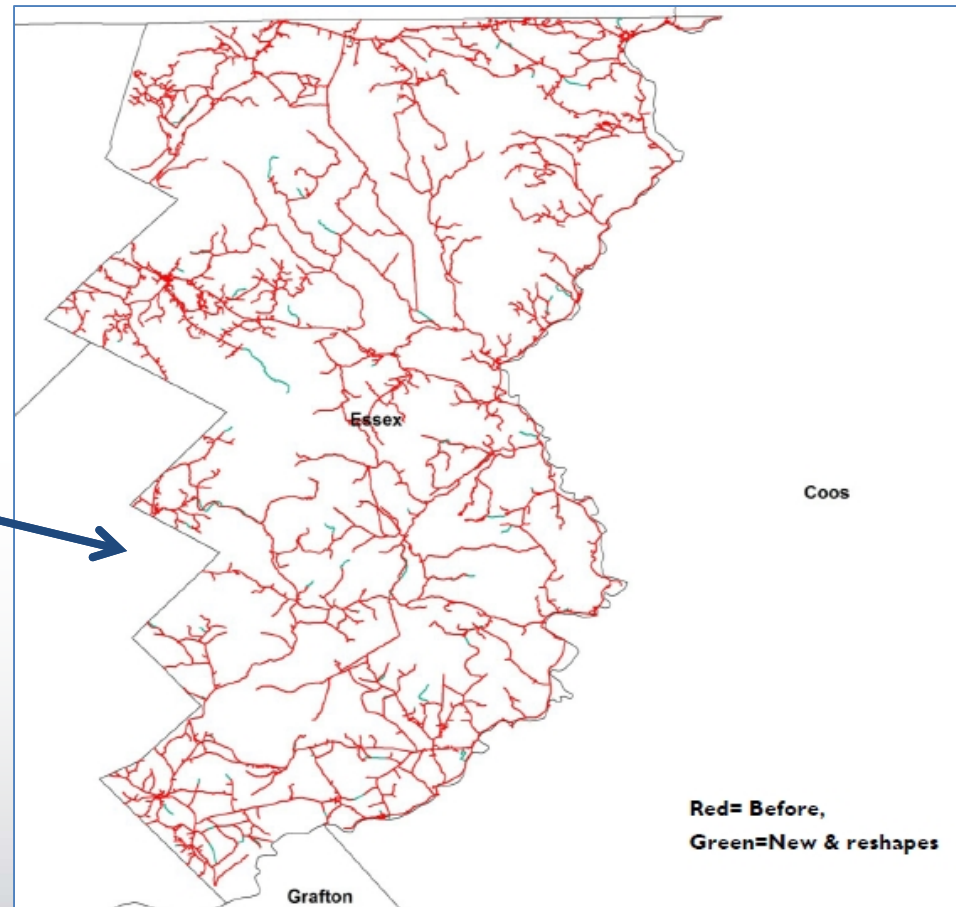
- What the partner provided
- Number of records matched or added to the Census address list
- Number of records not accepted
- Total number of records currently in the MAF

Block	Total Addresses	Total Residential	Total Nonresidential	Total Other	Total Matched	Total Added	Total Coordinates Added	Total Not Accepted	Total Not Accepted Duplicate	Total Not Accepted Incomplete	Total Not Accepted Other	Total Currently in MAF
1000	0	0	0	0	0	0	0	0	0	0	0	1
1001	1	1	0	0	1	0	1	0	0	0	0	1
1002	4	4	0	0	4	0	3	0	0	0	0	4
1006	5	5	0	0	4	1	3	0	0	0	0	5
1008	2	2	0	0	2	0	2	0	0	0	0	5
1010	4	4	0	0	0	0	0	2	1	1	1	3

Street Centerline Evaluation and Update

Interactive Review and Update

- Digitizers interactively review the potential new and misaligned streets using the partner data and current imagery
- In this example, the **green-blue** lines indicate street updates made by the Census Bureau based on the partner data
- The Census Bureau added 39 miles of new streets and modified 115 miles of misaligned streets based on this partner's street centerline data

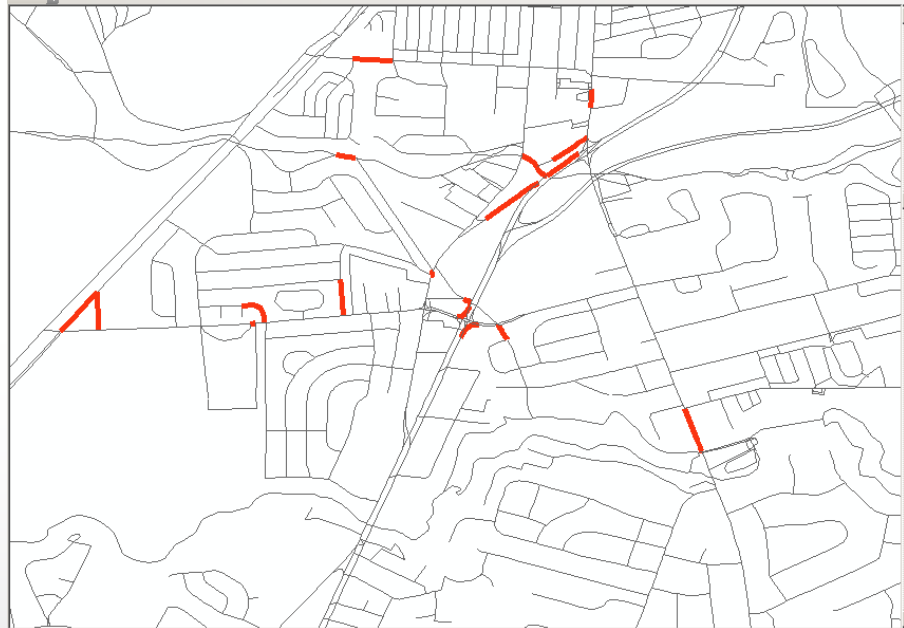


Feature Feedback

Adding a date of last update field to the partnership shapefiles:

live_2014_edges_10001

	MTFCC	FIDELITY	FULLNAME	SMID	MTUPDATE
	S1200	Y	Rd 4	4379	1/2/2013
	H3010	Y	Hudson Br	5364	1/2/2013
	H3010	Y	Meredith Br	5364	1/2/2013
	S1400	Y	Dupont Hwy	4379	1/2/2013
	H3010	Y	St Jones Riv	5364	1/2/2013
	S1200	Y	E Lebanon Rd	0	1/2/2013
	S1400	Y	Green Acres Dr	4379	1/2/2013
	S1200	Y	E Lebanon Rd	4379	1/2/2013
	S1400	Y	Court St	4379	1/2/2013
	S1630	Y		0	1/2/2013
	S1630	Y		0	1/2/2013
	S1200	Y	Korean Veterans Memori	4379	1/2/2013
	H3010	Y		5364	1/2/2013
	H3010	Y		5364	1/2/2013
	R1011	Y	Conrail RR	0	1/2/2013
	S1400	Y		0	1/2/2013
	R1011	Y	Conrail RR	0	1/2/2013



How Can You Help?

- Encourage the use of 'Address Type Indicators' (residential, commercial, utility etc..)– Needed to add new addresses to the MAF
- Encourage the acquisition of 'Within Structure Identifiers' for residential addresses with multiple units (i.e., apartments, condos, etc.)
 - Apartment #, unit #, etc. to distinguish each unit from other units at the same Basic Street Address
- Keep Street centerline files up to date.

For more information, please visit:
<http://www.census.gov/geo/www/gss/>

Thank you!

David Kraiker

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Better Boundary Quality: Consolidating the Boundary & Annexation Survey

The Boundary & Annexation Survey (BAS)

Background

Consolidation

Why Participate?

Consolidation Status

How Do I Participate?

Background

Boundary & Annexation Survey (BAS)

Census collects boundaries as of January 1 each year
annexations, de-annexations, incorporations, mergers

Survey counties, MCDs (townships) & places (cities, towns, villages) and AIAs:

New Jersey: 324 Places	Nation: 19,519 Places
242 Townships (MCDs)	Townships: 16,360
21 Counties	Counties: 3,031

2 “parts” to BAS: 1) provide geospatial changes (change polygons in BAS TIGER file, not just submitting your file)
2) provide legal documentation for changes

Can also provide boundary corrections, not just the legal changes (more on this shortly)

Background

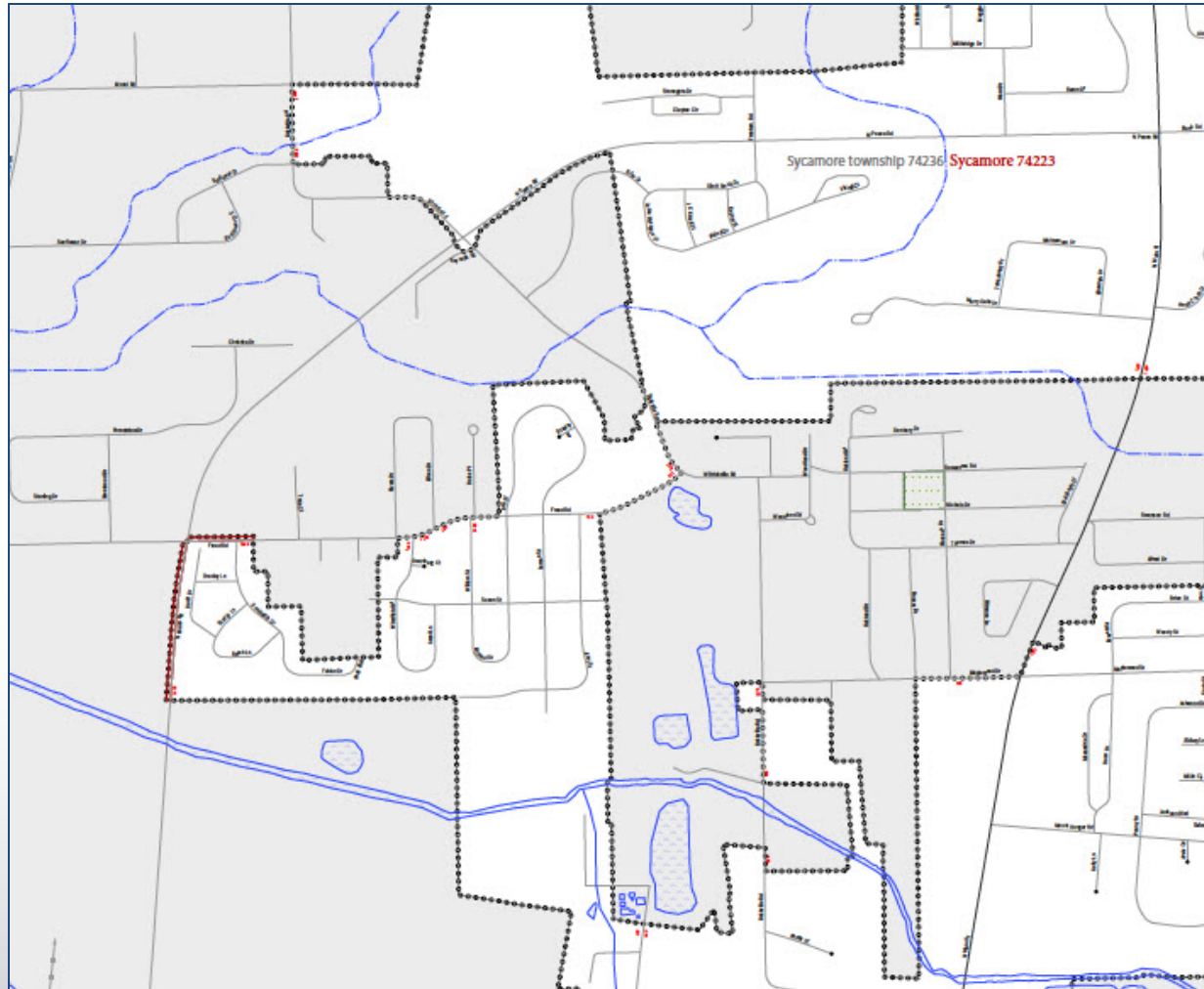
Boundary & Annexation Survey (Con't)

Can participate digitally, although significant number of governments, especially smaller ones, participate on paper

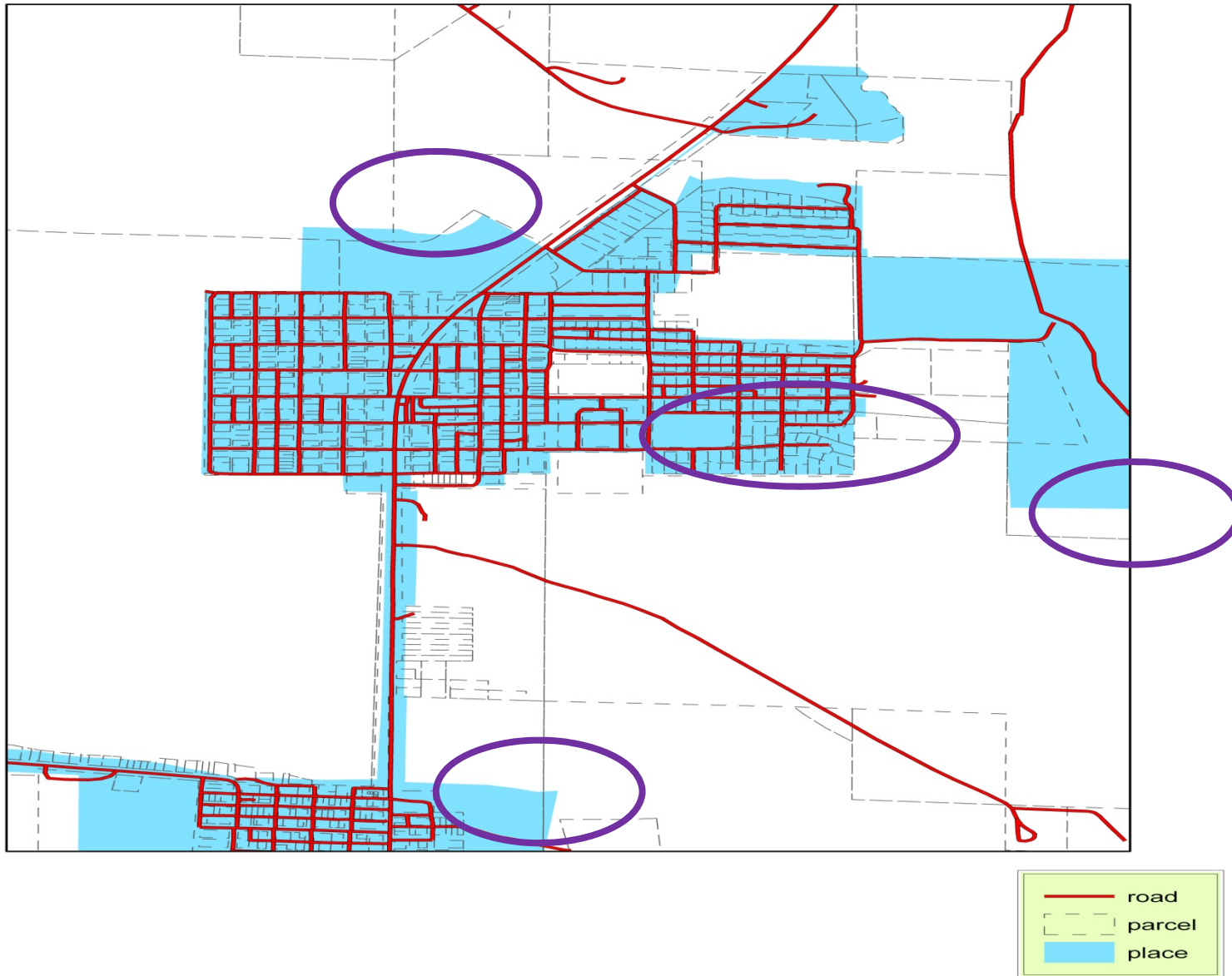
Paper = *Relative* accuracy?

Many do not participate at all (no annexations = no boundary review?)

Paper BAS Map



Inaccuracies: Visible vs. Non-Visible Boundaries



**HOW CAN WE
(THE COLLECTIVE “WE”)
IMPROVE THE BOUNDARIES
IN TIGER?**

**State Consolidated BAS
County Consolidated BAS**

What is a State Consolidated Boundary & Annexation Survey?

State responds to BAS for all governments within the state.

- This is appropriate where state law dictates that all governments within the state must provide legal changes to a state office.
- Census Bureau and State enter into a Memorandum of Understanding for consolidation.

State Boundary and Annexation Survey

MOU

The state has 2 options for enacting a State-Level BAS:

- 1) Can provide the Census Bureau a list of governments in the State that enacted legal changes in the BAS year;
- 2) Can provide the Bureau the geospatial changes for the legal changes (transaction file) and the legal documentation.

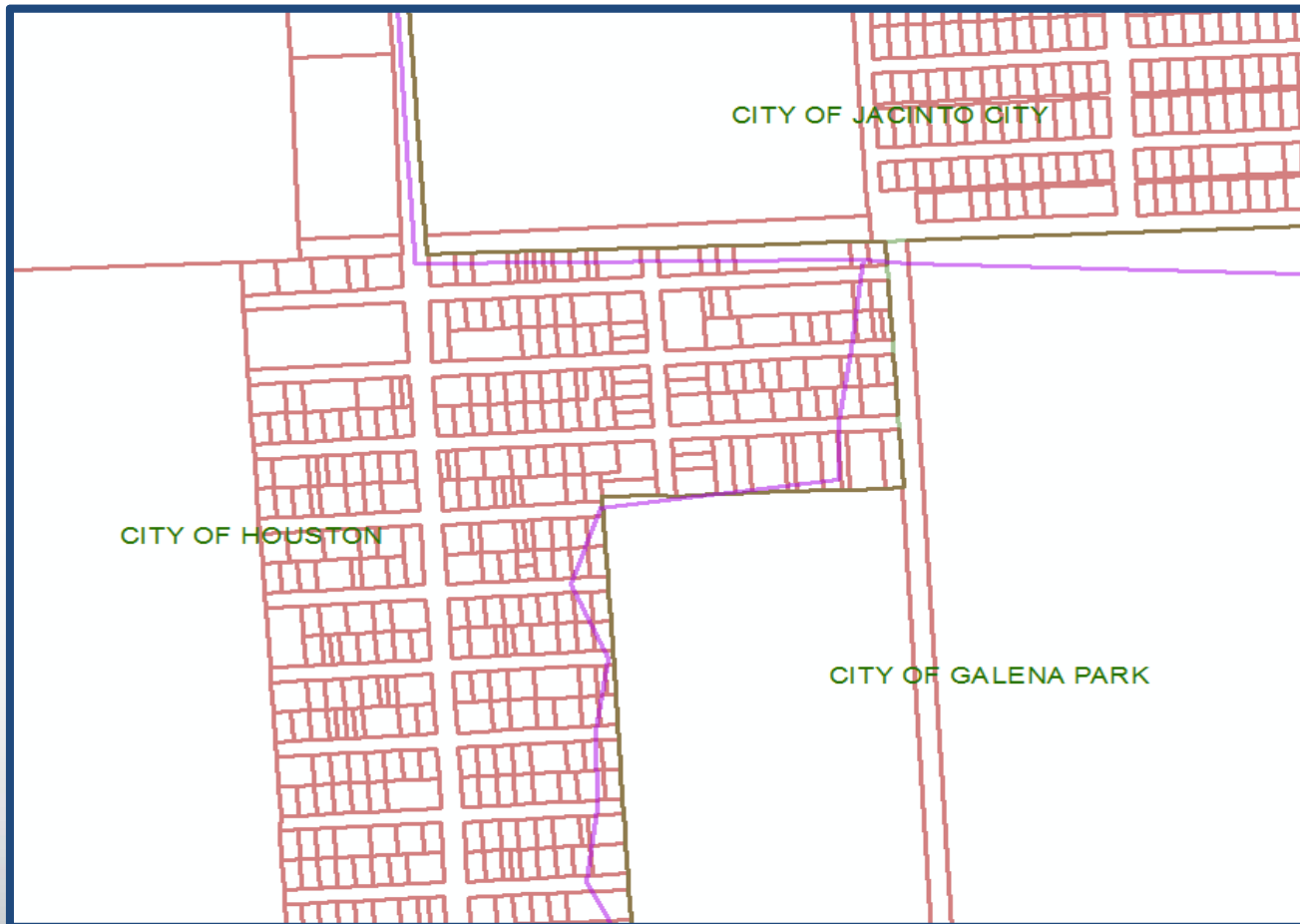
Consolidated BAS Benefits

- State can participate digitally (boundary accuracy!)
- If the state is responding , this provides an incentive to governments to ensure that the state receives their legal changes, and on a timely basis
- State is providing a service to the gov'ts in the state
- Provides continuity of BAS contact and response at the state level (as opposed the numerous gov'ts within the state, especially as administrations, staff change in local governments
- State level BAS contact(s) know BAS program, requirements, what to do and when!

Consolidated BAS Benefits (con't)

- Reduces duplication of effort (with no C-BAS agreement in place, Bureau still surveys all entities, must rectify discrepancies, follow up with non-responders)
- Saves \$\$\$ (i.e., taxpayer \$) because Bureau has to engage fewer entities
- Provides “Roll-Up” of boundaries to State and then to Federal Government
- Contributes to more accurate NSDI (Under OMB Circular A-16, Census Bureau is boundary steward for the Nation)
- Can reduce inaccuracies (you can make boundary corrections), which should impact REDISTRICTING

Inaccuracies: BAS TIGER Place Boundary Compared to Local Parcel Data



Light Purple:
Census Boundary

Green:
City Boundaries

Pink: Parcel

Census clearly leaves out parcels that include Housing Units:
Housing Units=pop

Additional Datasets desired with BAS submission (new!)

Parcel Dataset

PLSS Dataset

Both these data sets can help the Bureau improve the overall boundary quality in TIGER

Note: used as reference for boundary alignment; parcel and PLSS data not inserted in TIGER; not released in public Census products

County Consolidated BAS

What if the State can't engage in CBAS?

COUNTY Consolidated BAS

Implementation is different than State Consolidation

(entities in county must agree to consolidation, county solicits their participation)

How Does County Sign up for C-BAS?

Step 1: Complete BAS-6 (C-BAS) Form

FORM **BAS-6**
(10-12-2011)

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

BOUNDARY AND ANNEXATION SURVEY (BAS) CONSOLIDATED BAS

GENERAL INSTRUCTIONS	To sign up for the Consolidated BAS (C-BAS) program, please complete this form. <ul style="list-style-type: none">It is important that all questions on the form are answered completely.Return the completed form(s) by August 1st for your county to be consolidated for next year's BAS.For further information, please contact the Legal Areas Team by calling (301) 763-1099 or emailing geo.bas@census.gov.				
Name of county, parish, borough or equivalent area			State		
BAS ID	STATE CODE	COUNTY CODE			
Section 1 CONSOLIDATED BAS MAILING ADDRESS (Address where Consolidated BAS materials should be sent) – Please fill in contact information below.					
Name:	Address:				
Position:	City:				
Department:	State:		ZIP code		
Telephone: () -	Ext:				
Fax: ()	E-mail:				
Instructions for filling out this form: 1) Contacting each of the entities listed below, enter a Y (Yes) or N (No) in the "Agreed" column to note each entity's response to participating in the Consolidated BAS program. 2) Enter the name, position and telephone number of the contact person you spoke with from each entity. Please provide this information for all entities listed below. 3) Enter the date that you spoke with each entity contact in the "Date of Contact" column.					
Section 2 PARTICIPATION ROSTER					
BAS ID	Entity Name	Agreed? Y/N	Contact Name	Position	Telephone Number

County's Information

Participating Entities Info: Census will pre-populate for your county!



How Does County Sign up for C-BAS?

Step 2: Contact entities for participation agreement

FORM **BAS-6**
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U.S. DEPARTMENT OF COMMERCE
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Name of county, parish, borough or equivalent area _____ State _____

BAS ID _____ STATE CODE _____

Section 1 CONSOLIDATED BAS MAILING ADDRESS (Address where Consolidated BAS contact information below.)

Name: _____ Address: _____
Position: _____ City: _____
Department: _____ City: _____
Telephone: () - _____ ZIP code _____
Fax: () - _____

Agree? Y/N

Participating Entities Info

Date of Contact

Instructions for filling out this form:

- After contacting each of the entities listed below, enter a **Y** (Yes) or **N** (No) in the "Agreed" column to note each entity's response to participating in the Consolidated BAS program.
- Fill in the name, position and phone number of the contact person you spoke with from each entity. Please provide this information for all entities listed below.
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Section 2 PARTICIPATION ROSTER

BAS ID	Entity Name	Agreed? Y/N	Contact Name	Position	Telephone Number	Date of Contact

County Consolidated BAS

Step 2: Contact entities for participation agreement (con't)

TIPS and TRICKS

- We will provide text county can use in email or letter to solicit participation
- Blast email or .pdf letter sent via email to constituents has been successful in other states
- County BAS “consolidator” has requested presentation time at county-wide municipal clerks’ meeting, made the pitch and signed on entities at the meeting conclusion

County Consolidated BAS

Step 3: Return Agreement to GEO BAS TEAM via email

Once completed, scan form and send as .pdf to
geo.bas@census.gov

Due Date: *August 1, 2014*
(to be in effect for BAS 2015)

County Consolidated BAS

What happens next?

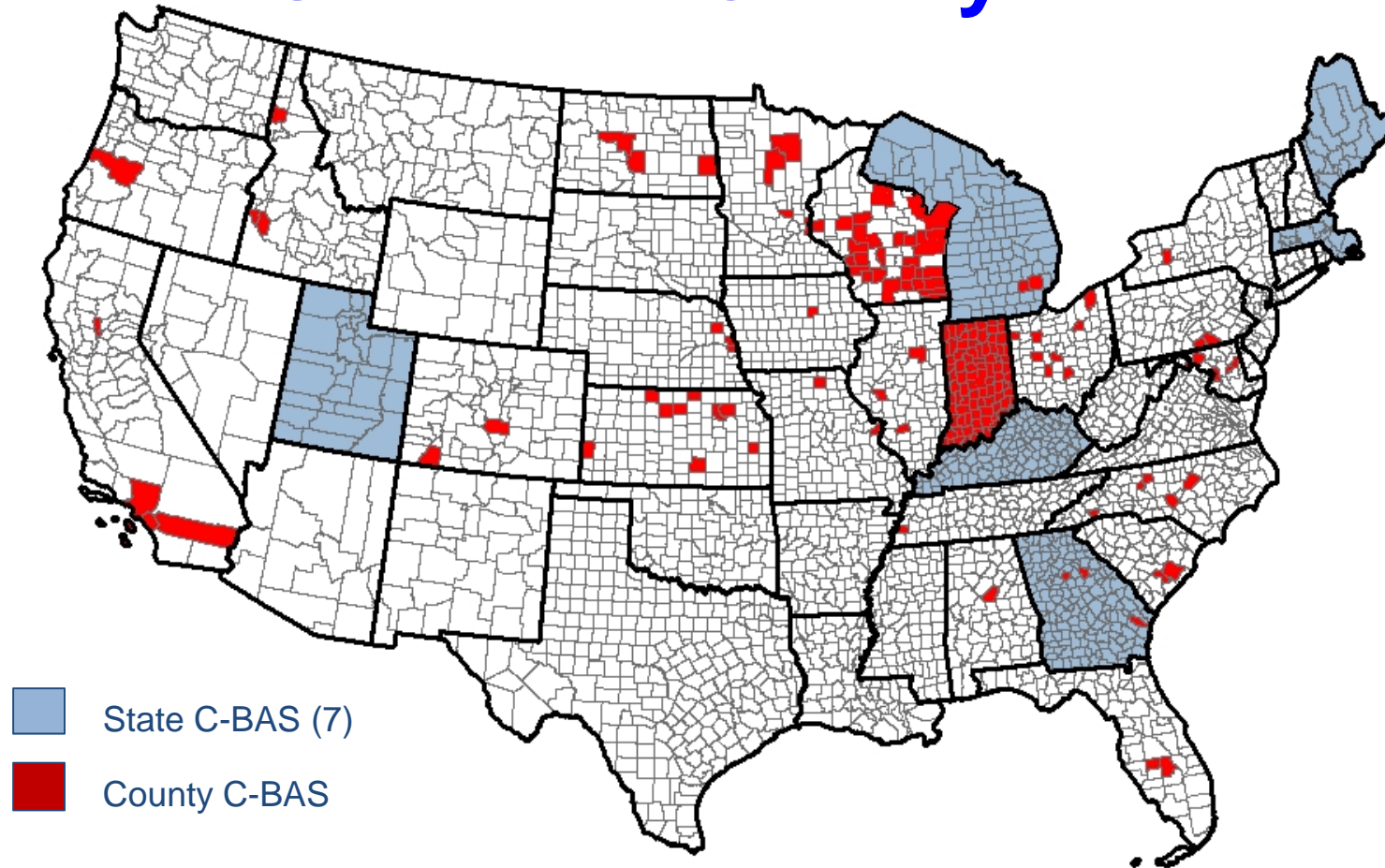
Entities within the county participating in County Consolidated BAS will receive a postcard for the (2015) BAS, indicating that their governmental unit has elected to have the county respond for them
(important because staff/elected officials change)

The counties in C-BAS will receive instructions for completing the BAS

Consolidated BAS More Benefits?

- Redistricting Data Program (State level participation)
Starts FY 2015? with Block Boundary Suggestion Program
- Geographic Support System Initiative (GSS-I)
(collecting address point data, features, and other data layers from locals, ongoing effort)
- LUCA (Local Update of Census Addresses)
- Targeted Address Canvassing? Decision by 2015

National C-BAS Participation State and County Level



(Alaska is State Participant, too)

Questions?

David Kraiker

U.S. Census Bureau

New York Regional Office

david.j.kraiker@census.gov

(212) 584-3413

Ready to Get Started?

For States, Contact:

Monica Smith

Geographic Areas Branch

U.S. Census Bureau

monica.smith@census.gov

(301) 763-9168

For Counties, Contact:

Gail A. Krmeneč

Geographic Areas Branch

U.S. Census Bureau

gail.a.krmeneč@census.gov

(630) 288-9258

FAQs

What if a place is located in 2 or more counties? Does that place have to get both counties to respond for county C-BAS? Yes and No.

As a COUNTY participating in C-BAS, can we rescind a Consolidated BAS agreement?

Yes. We will then survey all the entities in the county.

As a PLACE participating in County C-BAS, can we drop out of the county agreement?

YES, notify the BAS team (and the participating county).

FAQs

If I provide the parcel dataset to the Census Bureau as part of BAS (or the GSS-I), will these data be released in public TIGER products?

No, the Bureau uses parcels for reference. Parcel data may be used to update the Master Address File, but Title 13 of the U.S. Code restricts the Bureau from sharing individual addresses with the public.

If PLSS data are provided, will these data be included in public TIGER products?

No, PLSS data will be used for reference. But if boundaries follow PLSS lines, edges in TIGER will be “locked”.