

Geographic Programs Update

California State Data Center Meeting
September 10-11, 2014

Overview

Geographic Support System Initiative
Local Update of Census Addresses
Participant Statistical Areas Program
Redistricting Data Program

Geographic Support System Initiative

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



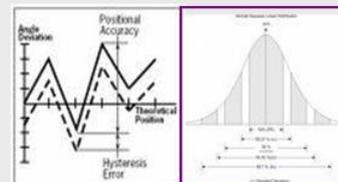
123 Testdata Road
Anytown, CA 94939

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

What is the Basic Process?

1. Acquire partner data (streets and addresses) 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, calculate spatial accuracy (CE95 method) of partner data using GPS control points
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

Last updated December 18, 2012 v.1.1

U.S. Census Bureau
Optimal Address Data Submission Guidelines – 50 States and D.C.

December 04, 2012 v1

U.S. Census Bureau
Optimal Address Data Submission Guidelines – Puerto Rico

August 30, 2012 DRAFT
v1.0 U.S. Census Bureau
Optimal and Minimal Feature Data Submission Guidelines

September 12, 2012 v0.6 DRAFT
U.S. Census Bureau
Optimal Metadata Submission Guidelines

As a part of the U.S. Census Bureau's Geographic Support System Initiative (GSS-I), the Census Bureau is committed to accepting data from our partners beginning in fiscal year 2013. The following tables list the metadata elements that are **optimal** for providing the Census Bureau with the information it needs to use partner data. The elements in the tables describe the entity responsible for the maintenance of the data, use restrictions, data lineage, known data defects and a description of the geographic area the data represents.

Note that elements for commonly used projections are shown in the table. If you use a different projection than those listed, please provide the specific parameters in accordance with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM), which can be found at: <http://www.fgdc.gov/metadata>.

The National States Geographic Information Council's (NSGIC) GIS Inventory can be used to create "starter metadata" that includes some of the Census Bureau's optimal metadata elements. The GIS Inventory can be found here: <http://www.nsgic.org/gis-inventory>. Additional metadata editors are referenced at: <http://www.fgdc.gov/metadata/development/metadata-tools>.

As a part of the address and structure data datasets.

Table 1 - Address Elements

Address Element	Complete Address Number	Complete Street Name	Complete Alternate Street Name	Complete Subaddress
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As a part of the U.S. Census Bureau's Geographic Support System Initiative (GSS-I), the Census Bureau is committed to accepting address and structure point data beginning in fiscal year 2013. This document outlines the optimal components in address and structure data.

Table 1 Address Elements: City Style Addresses

Address Element	
Complete Address Number	The identifier for the thoroughfare.
Complete Street Name	Official name of the thoroughfare.
Complete Alternate Street Name	Alternative name of the thoroughfare.
Urbanization (Urbanizacion)	Please use ALTS, EST, or EXT.

Minimal Required Metadata

Date Last Updated (with Spatial Domain (i.e. are accurate Spatial Reference All Code Values must
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Minimal Required Road

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

Partner Data Acquisition to Date

<i>Data as of Sept 3, 2014</i>	Partners Contacted	Partners Providing Files	Address List Acquired	Structure Coordinates Acquired	Street Centerlines Acquired	Partner Files Processed
TOTAL	434	304	181	648	714*	996**

* Some counties provided multiple partial-coverage street centerline datasets (i.e., cities vs. balance of county)

** Includes feature and address files processed through the MAF/TIGER system update process

GSS Initiative Participants

▨ States and tribal agreements

Data acquired

AIA, State, County Place, MCD

FY13

FY14

FY13

FY14

Entity contacted, no data acquired

County

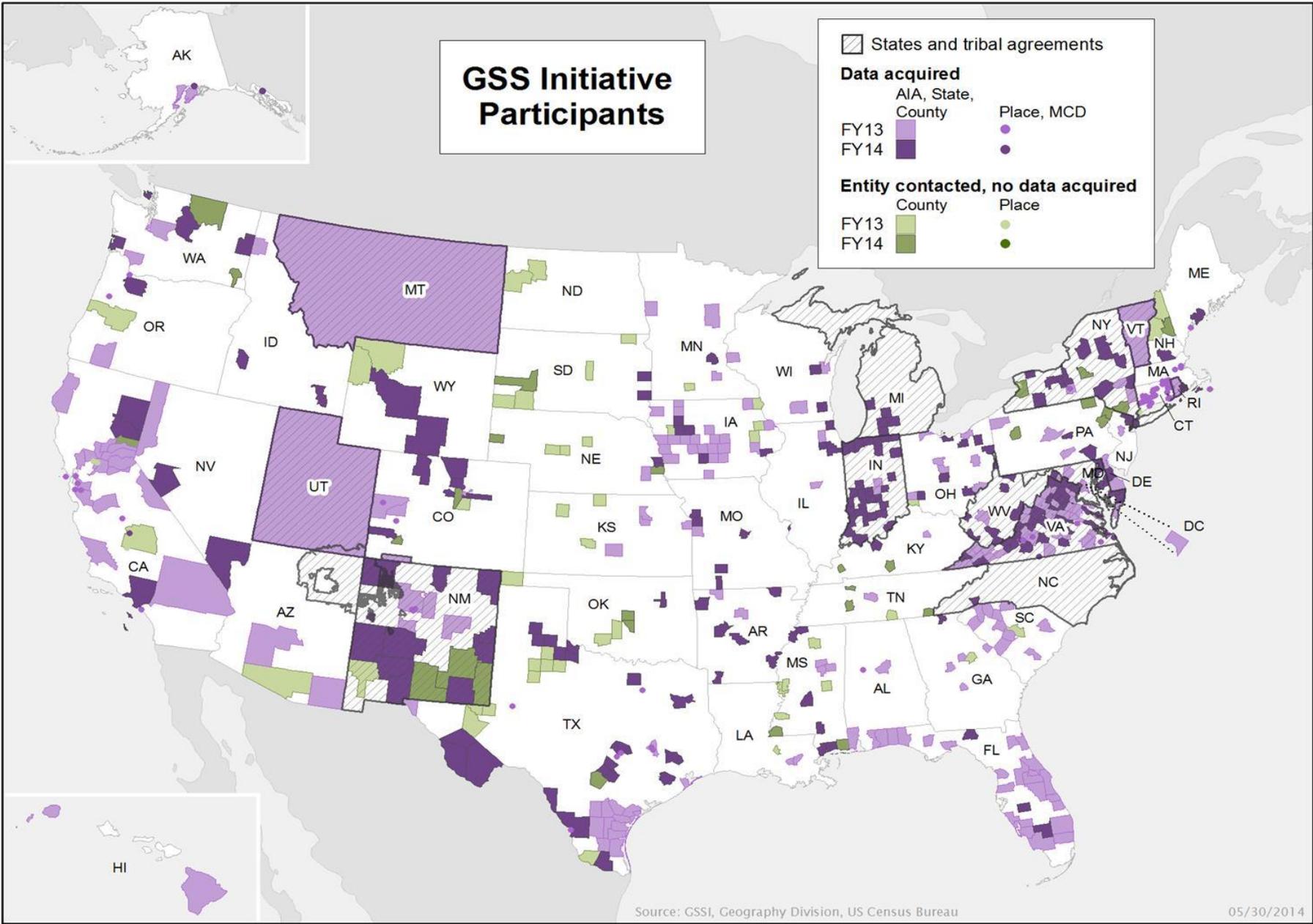
Place

FY13

FY14

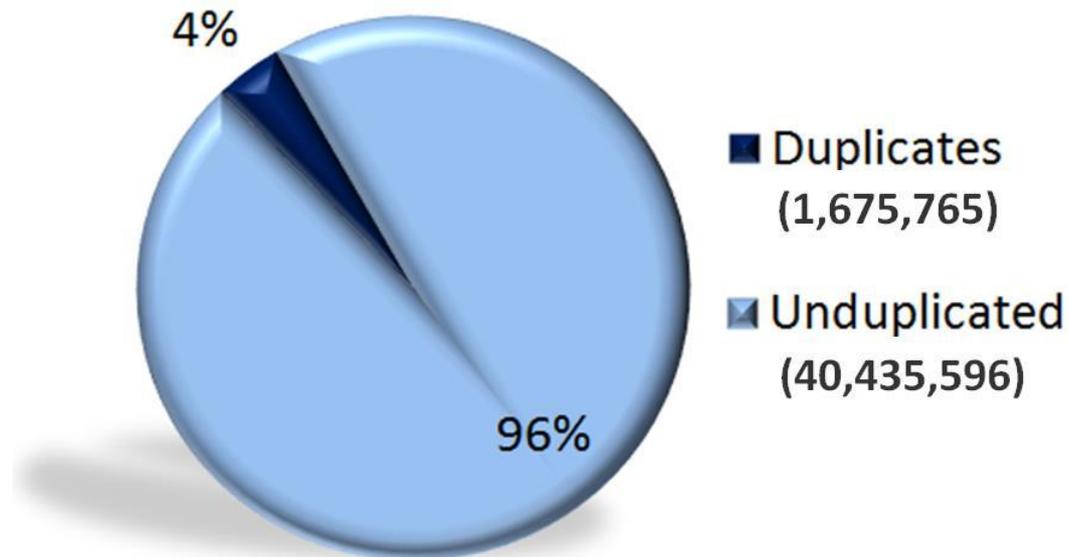
FY13

FY14

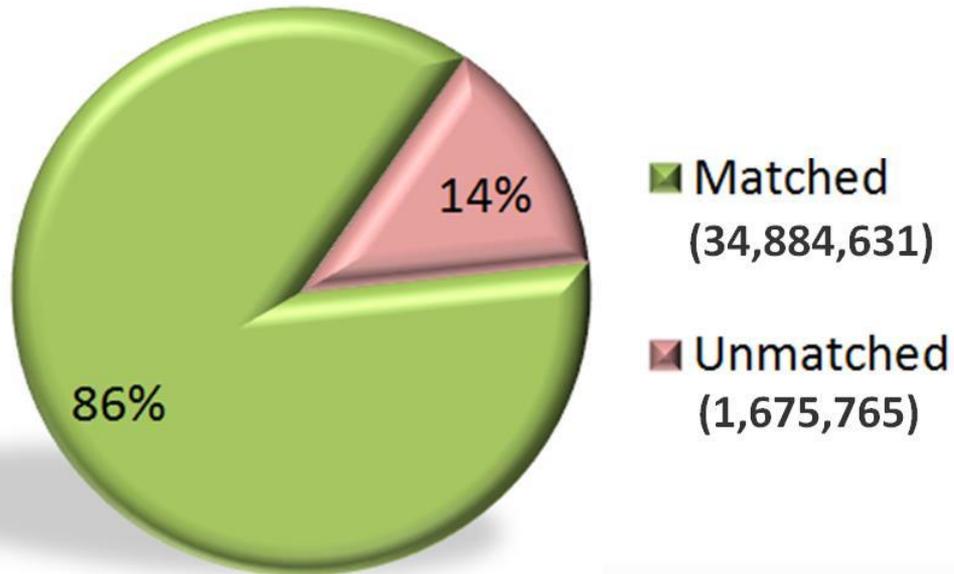


Partner Address Matching & Geocoding

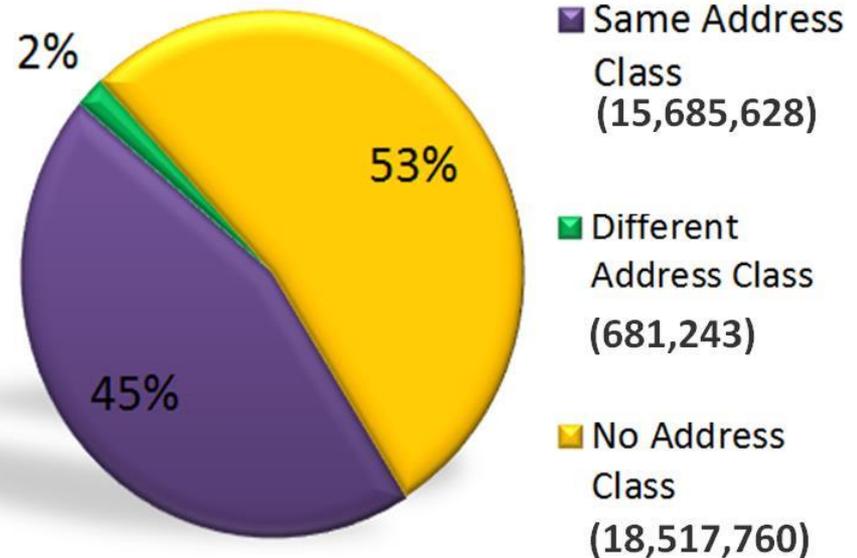
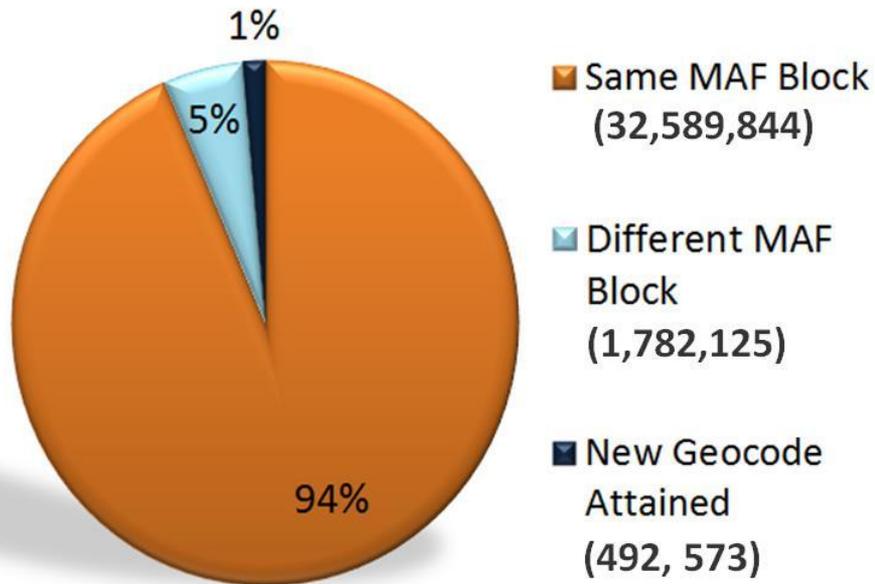
Of 42,111,361 Partner Addresses received...



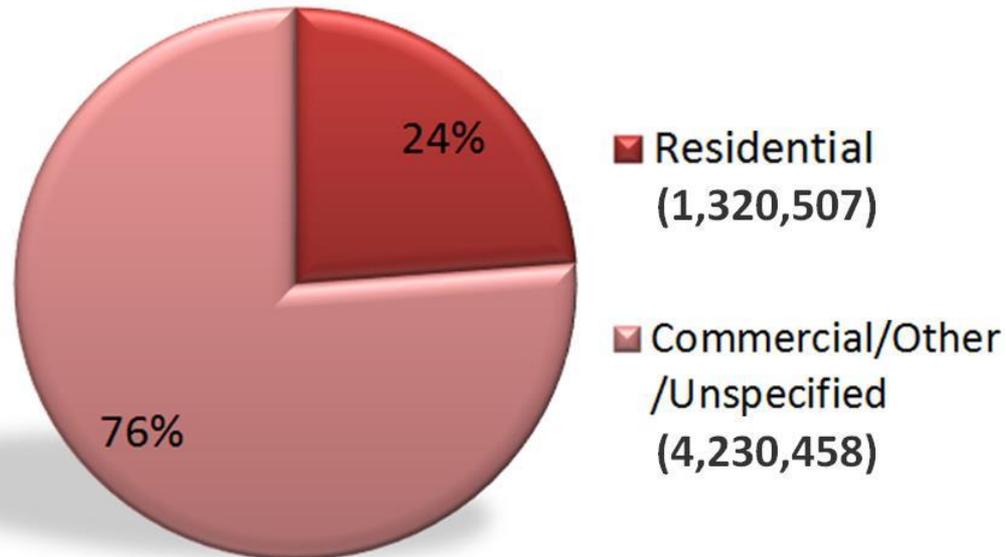
Of 40,435,596 Unduplicated Partner Addresses...



Of 34,884,631 Matched Partner Addresses...



Of 5,550,965 Unmatched Partner Addresses...



Block Level Address Feedback

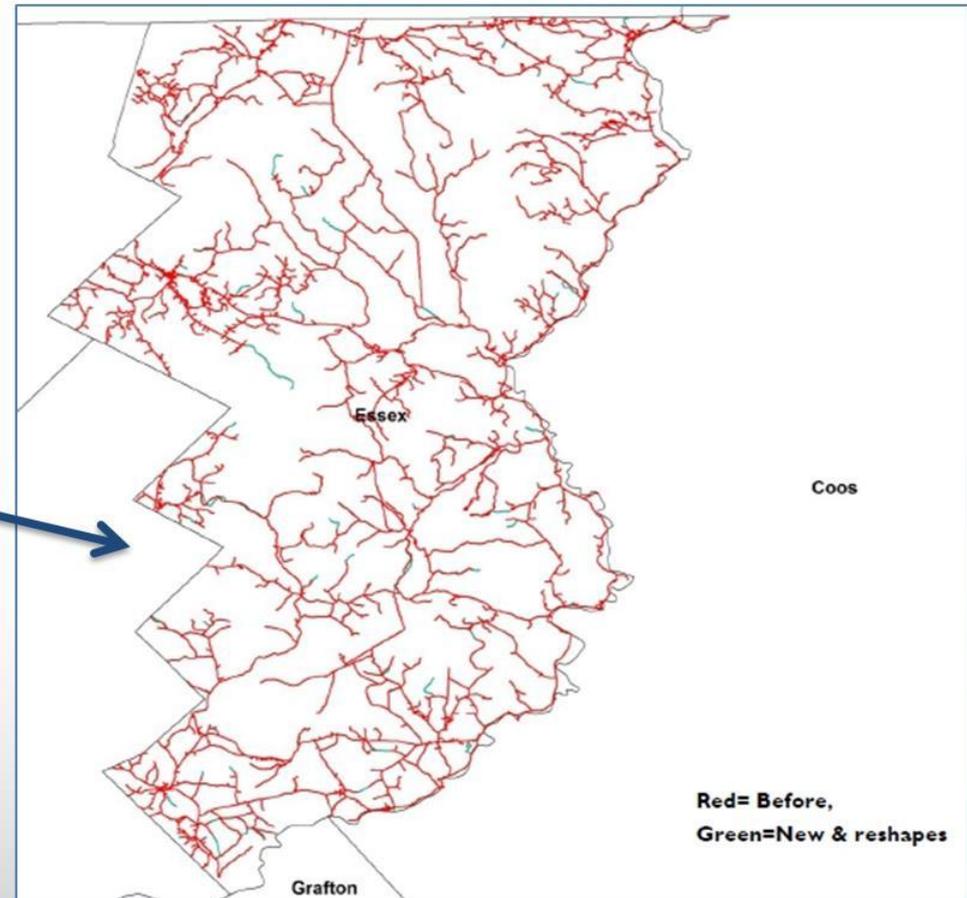
Consists of block tallies detailing:

- 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

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



Street Centerline Updates

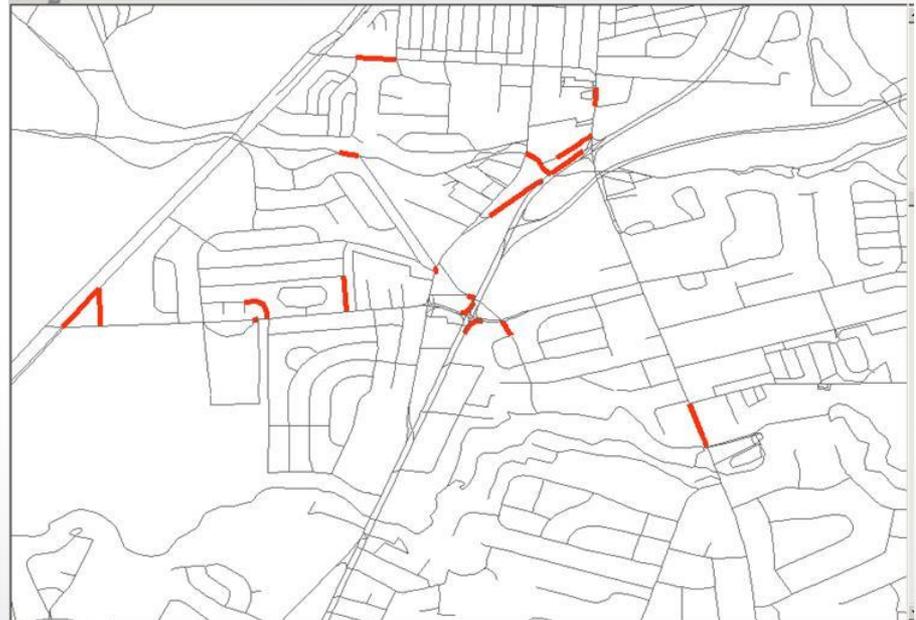
- 13,601 Miles of new roads added
- 40,385 Miles of updated roads
- 53,986 total miles of feature updates

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



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.

Community TIGER



- Proof of Concept collaborative project with ESRI
- Web (cloud) based data exchange and data management portal
- Phased and iterative project Leverages COTS technology, existing systems and proven workflows
- Utilizes and builds upon the next generation ESRI Community Maps

2015 GSSI goals

- Increase in GSSI production
- Ongoing Feedback
- Further testing/ select rollout of Community TIGER to refine tools
- Dependent on FY 15 budget

Local Update of Census Addresses (LUCA) Program

LUCA Background

The LUCA program is made possible by the [Census Address List Improvement Act of 1994 \(Public Law 103-430\)](#) which provides an opportunity for designated representatives of local, state, and tribal governments to review the addresses used to conduct the Census.

LUCA Background (continued)

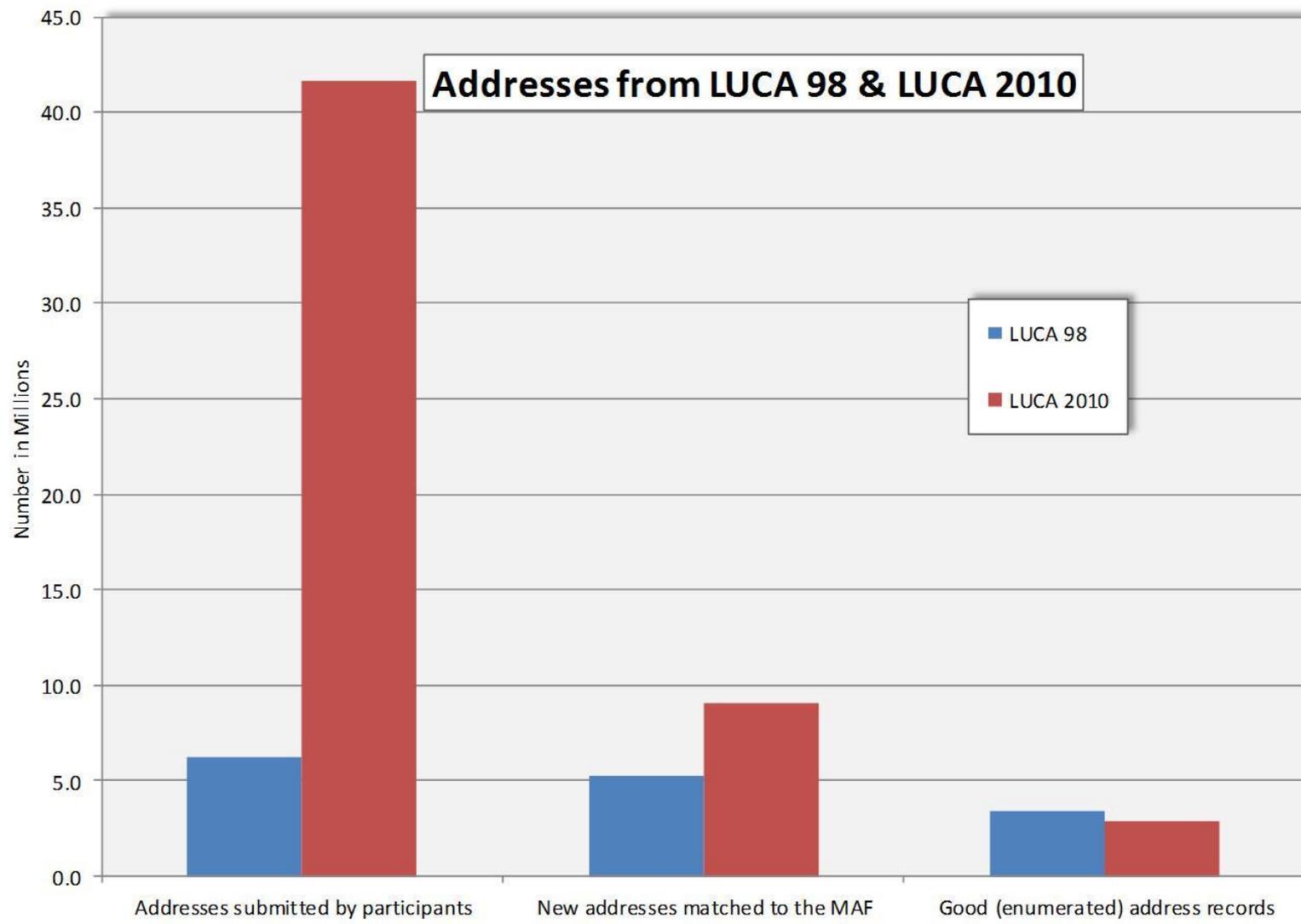
- **LUCA 1998/99:** Review and comment on our address list.
- **2010 LUCA:** Three participation options:
 - Option 1: Title-13 Full Address List Review (similar to LUCA 98)
 - Option 2: Title-13 review, full address list submission
 - Option 3: Non-Title-13, full address list submission

LUCA 1998 by the numbers

- 6.2 Million addresses submitted by 6,230 participants
- 0.9 Million matched to existing MAF records
- 5.3 Million new addresses added to the MAF
 - 3.4 Million good (enumerated) addresses
 - 63.2% Enumeration rate

LUCA 2010 by the numbers

- 41.7 Million addresses submitted by 7,641 participants
- 32.6 Million matched to existing MAF records
- 9.1 Million new addresses added to the MAF
 - 2.9 Million good (enumerated) addresses
 - 31.8% Enumeration rate



2020 LUCA Improvement Research

- To develop potential alternative designs for LUCA 2020 based on research by sub-teams
 - Looking Back at 2010 (assessments, surveys, lessons learned, etc...)
 - GSS-I's impact on LUCA (utilizing software and processes for LUCA)
 - Targeted Address Canvassing impact on LUCA (in-house validation)
 - Focus Groups

Draft LUCA Timeline

- Advanced Notice Mailing
 - Winter 2016/2017
- LUCA Invitation Mailing
 - Summer 2017
- LUCA Materials Mailing
 - Fall 2017/Spring 2018
- Census Bureau Processes and Validates LUCA Updates
 - Fall 2017 to Summer 2019
- LUCA Feedback Materials (and Appeals)
 - Late Summer/Fall 2019

How Can You Help?

- Encourage the development/use of within structure identifiers (Apt 101, Unit B etc...)
- Encourage the development and use of structure type codes in address development (residential, commercial, etc...)

Participant Statistical Areas Program

Participant Statistical Areas Program (PSAP)

- Statistical areas updated in the PSAP
 - Census tracts
 - Block groups
 - Census designated places
 - Census county divisions

Census Tracts

- Small, relatively permanent statistical subdivisions of a county
- Consistent boundaries over time allow statistical comparisons over time
- Population/housing unit thresholds:
 - Minimum: 1,200 pop/480 HUs
 - Maximum: 8,000 pop/3,200 HUs
 - Optimum: 4,000 pop/1,600 HUs

	2000 Census	2010 Census	Increase
California	7,049	8,057	12.5%
U.S.	66,438	7,3057	9%

Block Groups

- Block groups nest within census tracts
- Smallest area for ACS sample data tabulation
- Continuity and comparability from one census to another much less of a concern
- Population/housing unit thresholds:
 - Minimum: 600 pop/240 HUs – but lowest recommended for ACS is 1,200 pop/480 HUs
 - Maximum: 3,000 pop/1,200 HUs

	2000 Census	2010 Census	Increase
California	22,133	23,212	5%
U.S.	211,827	217,740	3%

Census Designated Places (CDPs)

- Represent communities that are: closely settled, unincorporated, locally and regionally recognized, identifiable by name
- Intended to be comparable with incorporated places. Not meant to represent individual “neighborhoods” or “subdivisions” if a part of a larger place
- Have some housing units, and most often mix of residential and commercial and/or community development
- Cannot overlap with incorporated places or other CDPs

	2000 Census	2010 Census	Increase
California	607	1,043	42%
U.S.	5,977	9,721	36%

2010 PSAP Successes

- Stayed on schedule
- All Digital for the first time
- Strong support/participation in CA
- MAF/TIGER Partnership Software (MTPS) standardized submissions
 - Guide through work
 - Built in edits
 - Overall improvements
- Online imagery, other digital data, and GIS helped in the review of submissions

2010 PSAP Challenges

- Many participants unable to conduct the amount/level of review desired
- New tools resulted in more debate over final delineation
- Internally too much focus on technology, not enough focus on the concepts
- Stricter enforcement of thresholds in support of the ACS
 - Difficult to persuade some participants to merge low population tracts and block groups
 - More need for education on ACS and Economic Census

Looking Towards the 2020 PSAP

- No significant criteria changes
- Continue all digital approach, but make improvements
 - Make PSAP plan communication and data sharing easier for participants among colleagues and constituent communities, e.g., creation of PSAP plan PDF maps
 - May be primarily or completely over the web
- One “phase” – not two (delineation and verification)
- Reasons for participation remain the same, primarily:
 - Statistical areas are used to qualify for government funding
 - Decennial Census, American Community Survey, and other census and survey data published for these geographies
 - Affect other geographic area delineations, including census blocks and geographies built on census blocks

Draft PSAP Schedule

- 2016 – proposed 2020 PSAP criteria published in the Federal Register and on Bureau website
- 2016/17 – final criteria published
- 2017 – outreach and determining the PSAP “primary” participants
- 2018 –PSAP participants will begin working on the PSAP and CDP programs – at the earliest
- 2020 – all geographies “locked down” for 2020 Census

Redistricting Data Program

The Redistricting Data program provides States the opportunity to specify small geographic areas for which they wish to receive 2020 decennial population totals for the purpose of reapportionment and redistricting

Title 13, Section 141c of the United States Code

Redistricting Data Program

Five Phases

- **Phase 1 - Block Boundary Suggestion Project**
 - Expected December 2015 - May 2017
- **Phase 2 - Voting District Project**
 - Expected December 2017 - May 2019
- **Phase 3 - Delivery of the 2020 Census P.L. 94-171 Redistricting Data Files and Geographic Products**
- **Phase 4 - Collection of Post-2020 Census Redistricting Plans**
- **Phase 5 - Evaluation of the 2020 Census Redistricting Data Program and Recommendations for 2030**

Redistricting Program Next Steps

- Invitation to participate in Program
 - End of September 2014
- Meetings with State Liaisons
 - All through 2015
- Invite States to Participate in BBSP
 - February 2015
- Identify the BBSP universe
 - August 2015

BAS 2015

- There will be a BAS program next year but it will be limited in scope
- Federal Register announcement soon

Thank you!

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<http://www.census.gov/geo/gssi/>

<http://www.census.gov/rdo/>

<http://www.census.gov/geo/partnerships/>