

The Geographic Support System Initiative (GSS-I): Working with Partners for Enhanced Data Management

Census Bureau
Community Address Conference
Leesburg, VA

April 18, 2013



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



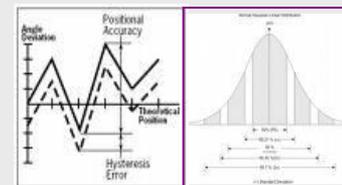
123 Testdata Road
Anytown, CA 94939

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

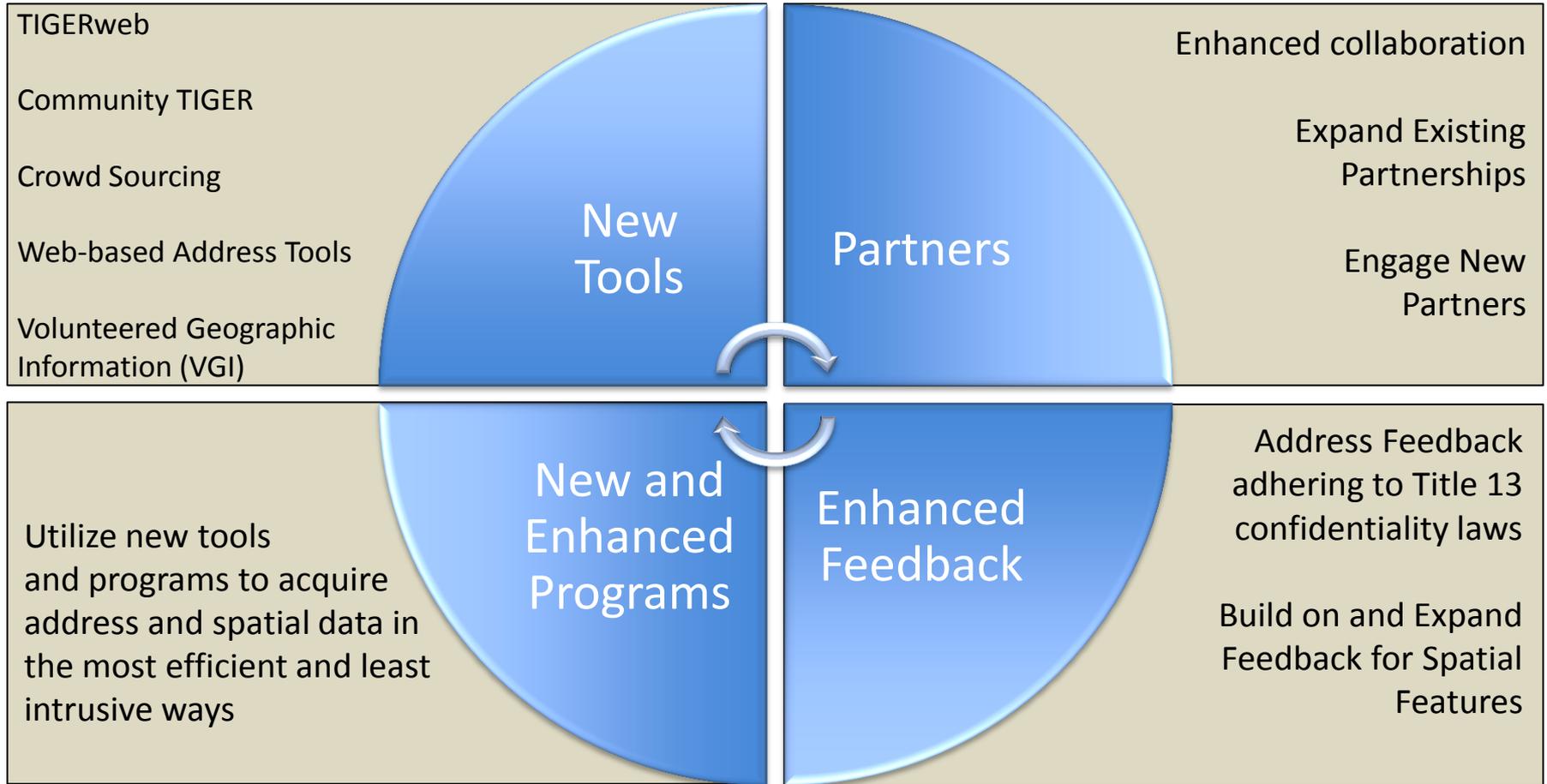
Street/Feature Updates



Quality Measurement



Improved Partnerships



The GSS-I Partnership Program

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



Highlights of the Program

- Expanding participation in FY14
- Provide detailed feedback on how partner data was used, as allowed by law
- Promote data standards and best practices from national organizations and federal agencies
- Provide assistance with ensuring data format and content usability



Impact on the 2020 Census

- Partner-provided geospatial data will increase the overall quality and coverage of the MAF/TIGER System leading up to the 2020 Census
- GEO is introducing new processes to measure and report on data quality
- These efforts will contribute to informed, data-driven decisions about areas of the country that could be candidates for Targeted Address Canvassing



Data Content Guidelines

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 feature data from our partners beginning in the second quarter of fiscal year 2013. These documents outline the data elements and metadata that the Census Bureau identifies as optimal components in address and feature datasets.

Address Data Content Guidelines

- [Census Address Ontology](#) [PDF]
- [Address Data Submission Guidelines - 50 States and D.C.](#) [PDF]
- [Address Data Submission Guidelines - Puerto Rico](#) [PDF]
- [Census Address to FGDC Address Standard Crosswalk](#) [PDF]

Feature Data Content Guidelines

- [Feature Data Submission Guidelines](#) [PDF]

Metadata Content Guidelines

- [Metadata Content Guidelines](#) [PDF]



What Kind of Address Data?

- City-style addresses
and/or
- Non city-style addresses (i.e., P.O. Box #, Rural Route #)
that *'ideally'* meet:
 1. USPS minimum delivery requirements, and
 2. the 'FGDC Address Standard' (U.S. Thoroughfare, Landmark, and Postal Address Data Standard)

Potential Sources:

- Partner government data (i.e., GIS, parcel, E-911, etc.)
- Administrative Records data
- Commercial data



What Kind of Street Feature Data?

- Street **centerline geometry**
- Street **attributes** – names, address ranges, etc.

Why?

- Expand Census centerline and attribute coverage
- Spatially-correct misaligned streets in conjunction with high-quality imagery

Potential Sources

- Government-provided data (i.e., GIS, parcel, E-911, etc.)
- Commercial data
- Crowdsourcing (to identify issues)
- Volunteered Geographic Information (to resolve issues)



Implementation Phase 1: October 2012 – March 2013

- Launched the GSS-I Partnership Program in October 2012
- Identified 56 initial partners to participate in Phase 1 by providing their addresses, structure points, and street centerlines
- Goal was to acquire and use partner data for a production test of our process and software in first half FY13



Selecting the Phase 1 Partners

- Phase 1 universe included a mix of Address Pilot participants, existing state agreements, targets identified by change detection, and numerous substitutions
- Substitutions were typically made when:
 - Data use or licensing agreement required
 - Data unavailable
 - Partner requested to delay participation

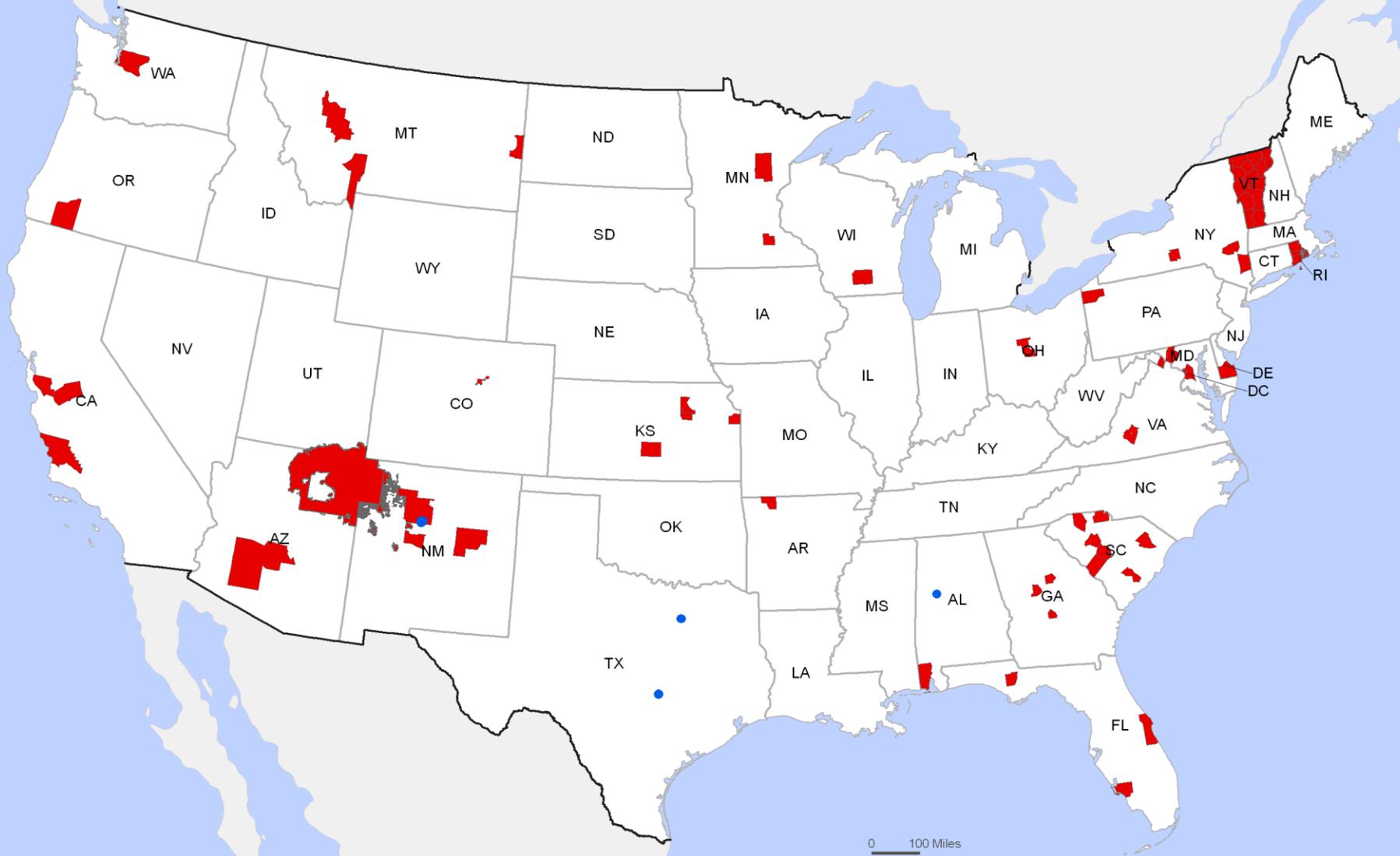


Identifying the Right Contact

Census Bureau staff are identifying Address and Spatial Authorities for local governments using these and other factors:

- Census Bureau's Geographic Program Participants (GPP) database
- Available Data.gov and Geospatial Platform/GeoCloud datasets
- National States Geographic Information Council (NSGIC) GIS Inventory
- NSGIC Geospatial Maturity Assessment results
- State GIO recommendations
- NSGIC/State Data Center liaison recommendations
- DOT schedule for state submissions (i.e., FY13)
- Outreach to specific non-state partner
- Web search for specific non-state partner datasets
- Outreach to state
- Web search for state datasets

Phase 1 Participants



0 100 Miles

The GSS-I Partner Data 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 MAF/TIGER Database
3. Match street centerline data to TIGER 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



Experiences from Phase 1

Content Verification

- Incomplete metadata (i.e., projection, datum, data dictionaries, etc.)
- Coverage gaps (i.e., counties that excluded data for incorporated cities within their legal jurisdiction)
- Frequent call-backs for explanations and missing data items/layers (i.e., missing Interstate Highway layer, cryptic building use codes, etc.)
- Street centerline datasets that failed to meet minimum Feature Data Guidelines = 21/58 (36%)
 - Failure to meet Guidelines limits the uses for partner-provided data (i.e., street matching, attribute harvesting, coordinate enhancement)
 - Feedback reports will outline how centerline data was used
- Substitutions due to usability or completeness concerns



Phase 1 Feedback

- Conducting a Focus Group with Phase 1 participants to jointly define feedback
- Proposed Address Feedback (*to be informed by Address Pilots*)
 - Analysis of compliance with Address Content Guidelines
 - Crosswalk of partner data elements to MAF/TIGER System elements
 - Tallies for matched, unmatched, and newly geocoded addresses – we are testing what level of resolution we can provide
- Proposed Street Centerline Feedback
 - Results of CE95 spatial accuracy calculation (where performed)
 - Topology Validation Results (Gaps, Floaters)
 - Street Change Detection and Completeness Check
 - Address Range Checks
 - Summary of usage (realignment, adds, change detection, etc.)

Realities and Challenges

- Some partners have challenges or concerns providing data to the Census Bureau (i.e., fees, legal requirements, hesitation to submit to evaluation)
- Data evaluation process is labor intensive
- We are working to integrate the goals of the GSS-I with existing investments in boundaries (BAS) and structure points (2010 Census)
- Impact of unresolved policy questions on the GSS-I feedback process for Phase 1



Plans for Phase 2: April 2013 – September 2013

- Planning for @ 300-500 'Phase 2' partners
- Phase 2 universe will be criteria-driven
(Targeted Address Canvassing research, data quality issues in MAF/TIGER, whole states)
- Integrate Community TIGER into workflow
- Phase 2 contacts began in April 2013
- Phase 2 feedback expected to be available on a flow starting in Summer 2013



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

Thank you!

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