Geographic Programs
An Update

California State Data Center Meeting
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Linda Akers Smith
Assistant Regional Census Manager
Los Angeles Regional Census Center
Geographic Programs
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Public Use Microdata Area Criteria
Urbanized Areas
Count Question Resolution Program
2010 Geographic and Cartographic Products
2020 Geography Support System Proposed Initiative:
2011 and Beyond
What is a PUMA?

- PUMAs are statistical geographic areas that have been defined for the tabulation and dissemination of Public-Use Microdata Sample (PUMS)
  - PUMS – sample information about individual persons and households

- PUMAs are published for the decennial census as well as for the American Community Survey (ACS)

- PUMA boundaries are updated for every decennial census.
PUMA and PUMS Usage Today

- Currently, 2010 PUMAs are being used, or are planned to be used in the publication of:
  - 2010 Census PUMS files
  - ACS 1-year, 3-year, and 5-year PUMS files
  - ACS 1-year, 3-year, and 5-year estimates (i.e. Pop Estimates)

- For more information about PUMS, see *A Compass for Understanding and Using American Community Survey Data: What PUMS Data Users Need to Know* (Feb 2009)
  
  www.census.gov/acs/Downloads/handbooks/ACSPUMS.pdf
Proposed Criteria for 2010

PUMA Types

- Only one level of standard PUMAs
  (5% from Census 2000)

- Place of work PUMAs (POW PUMAs) and migration PUMAs (MIG PUMAs) are proposed to be county-based consisting of
  - a single PUMA for county-based PUMAs
  - a combination of adjacent tract based-PUMAs so that together the PUMAs compose one or more complete counties
Proposed Criteria for 2010
Population Thresholds

- Each PUMA must contain a minimum population of 100,000 and up to 200,000
- The minimum population must be met at the time of delineation and throughout the decade
  - Identify each PUMA currently experiencing or expected to experience population decline above the minimum threshold to accommodate the decline throughout the decade
  - PUMAs that fall “significantly below” the 100,000 person threshold will be combined with one or more adjacent PUMAs for ACS PUMS
- PUMAs may be named by local participants
Proposed Criteria for 2010

PUMA Composition

- All PUMA types (standard, POW, and MIG) must nest within states

- PUMAs will be based on aggregations of counties and 2010 census tracts only
  - Tract based PUMAs may cross county boundaries, provided that each PUMA county part meets a minimum population of 2,400

- Should be contiguous (with exceptions)
Review of PUMA Criteria - Feedback

- Census Bureau notified the SDCs, CICs and Regions and received comments on the proposed criteria that were published on the Census Bureau website.

- General support for the use of census tracts and counties as the only building blocks but...

- Support for the use of incorporated places in certain states.

- Desire among the transportation community to be included in the delineation process.
February 28, 2011: Comment period ended for PUMA proposed criteria

Spring 2011: Final PUMA delineation criteria and guidelines distributed
- Tutorial published to Census website
- PUMA software requirements sent to contractor

September 2011: Materials sent to SDCs for PUMA delineation

September-October 2011: PUMA delineation software training

Late December 2011/early January 2012: Return deadline for submissions

Fall 2011-Spring 2012: Review of PUMA submissions and insertion into TIGER database

Spring-Summer 2012: Creation of geographic products containing PUMAs for use in 2010 Census PUMS and ACS
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Urban and Rural Classification

- The Census Bureau has officially defined urban areas since the 1910 census.

- The Census Bureau identifies urban and rural population, housing, and territory solely for the purpose of statistical presentation and comparison.

- Urban areas are defined following each decennial census using population counts.
Urban Areas

- Urban areas represent densely developed territory, encompassing residential, commercial and other non-residential urban land uses.

- Structure has been defined on population counts and residential population density.

- Two types of urban areas:
  - Urbanized areas of 50,000 or more population
  - Urban clusters of 2,500 – 49,999

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2010 Urban Area Program

- Remain committed to an objective, equitable and consistent nationwide urban area delineation
- Retain decennial comparability by building upon 2000 criteria
- All potential modifications are refinements, or supplements to address deficiencies encountered for Census 2000
Initial Core Using Census Tracts as Analysis Units

- During initial core delineation for 2000, used BGs and blocks as the “analysis units” to initially identify territory that qualified as urban according primarily to population density and area measures.
- Retain all density requirements.
- Maximum size threshold for qualifying census tracts during initial urban area core delineation will be 3 square miles instead of 2.
- This change captures roughly the same amount of area as the 2 square mile threshold when using census tract as analysis unit.
Jump Distance Threshold

- Maximum jump distance threshold was increased for the Census 2000 to 2.5 miles to account for more restrictive definitions of what is considered "undevelopable" territory as well as changing planning practices.

- Proposed reverting the maximum jump distance threshold back to 1.5 miles to mitigate the overextension or urban area territory and creation of oddly shaped patterns.

- We likely will retain the 2.5 mile threshold to provide decennial consistency.

Hop and Jump Corridor Examples:
- Grand Junction, CO "Sawtooth"
- Grants Pass, OR "Fingers"
Splitting Large Urban Agglomerations

- The automated nature of the delineation often results in large urban “agglomerations” consisting of multiple urban areas defined separately for the Census 2000.

- We propose to use the 2000 boundaries as a guide and modify where appropriate.

- This case modifies the current boundary to retain the entire CDP or incorporated place within the same urban area.
Other Urban Area
Changes under consideration

- Use of land use/land cover information to identify:
  - Impervious surfaces
  - Wetlands
- Add airports with 2,500 or more enplanements when adjacent to urban area
- Require urban areas to have at least 1,500 persons residing outside institutional GQs
- Eliminate central place concept
Urban Areas Draft Schedule

- Spring 2011: Final Criteria published
- Spring 2011: Begin delineation of Urban Areas
- Spring 2012: Delineation Complete
- Spring-Summer 2012: Final 2010 Urban Areas published in the Federal Register
- October 2012: Block level Urban/Rural population and housing unit data released
- Fall 2012: Urban/Rural TIGER files released
- Fall 2012: Urban Area/Urban Cluster Reference Maps
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Count Question Resolution Program

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Count Question Resolution Program

- CQR is the mechanism for state, local, and tribal officials to challenge the 2010 Census counts of housing units, group quarters, and/or group quarters population counts.

- Begins June 1, 2011 through June 1, 2013.

- Research will be concluded by September 30, 2013.
Acceptable CQR Challenges

- **Boundary**
  - Inaccurate reporting or inaccurate recording of boundaries legally in effect on January 1, 2010

- **Geocoding**
  - Challenges affecting the placement of living quarters and associated population

- **Coverage**
  - Challenges resulting in the addition or deletion of specific living quarters and persons associated with them identified during the census process, but erroneously included as duplicates or excluded due to processing errors.
CQR
Investigative Process

➢ Initiation
  ➢ Highest elected official of state, local or tribal government or designated person
  ➢ Challenges sent to Census Headquarters
  ➢ Documentation Required

➢ Research
  ➢ Challenge Documentation
  ➢ Existing Census Records
Challenge Outcomes

- Reinstate a HU/GQ and associated population count
- Delete a HU/GQ and associated population count
- Update a geographic boundary
- Update a HU/GQ geocode
- No change
Challenge Results

- Successful
  - Corrections sent to all affected jurisdictions
  - Changes documented through errata on AFF
  - Corrections reflected in the base for post-census population estimates (starting Dec. 2012)
  - Changes updated in the Master Address File/TIGER database
  - No changes to 2010 Apportionment, Redistricting counts or data products
Challenge Results

- Unsuccessful
  - Census will maintain documentation for future address file update work and no changes to data or geography are made
  - If due to insufficient documentation, challenger is asked to provide more information
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What is TIGER?

Topologically Integrated Geographic Encoding and Referencing

**TIGER Content**

- Streets and their names
- Lakes, streams, and their names
- Railroads
- Geographic entity boundaries, names, and codes (for governmental units, census tracts, census blocks, etc.)
- Housing unit locations
- Key geographic locations (for airports, schools, etc.)
- ZIP Codes and address ranges

**Part of the Master Address File /TIGER Database**

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What are TIGER/Line Shapefiles?

- Extracts of selected geographic and cartographic information
- Contains no sensitive data
- Nationwide coverage
- Are designed for use with GIS software
- Contains geographic linear, areal, and point features, including attribute information
- Geographic entity boundaries
- The legal and statistical areas for which Census tabulates data
TIGER/Line Shapefiles
Release Schedule

- 2010 Census-based geography
  - State-by-State for Redistricting – **All Released**
    - Sent on DVD to state officials – available on website only
  - National in early-mid 2011
  - Urban/Rural in late 2012
  - 113th Congressional Districts in early 2013
  - New Core Based Statistical Areas in mid 2013
- Releases timed with 2010 Census data availability
- Future Releases

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New 2010 TIGER/Line Shapefiles Features

• Individual Road, Rail, and Linear Water shapefiles
  – National Primary and State Primary and Secondary Roads
  – County all Roads
  – National Rail
  – County Linear Water

• Additional state-based shapefiles

• National Congressional Districts
New 2010 TIGER/Line Shapefiles

- Results of Address Canvassing and Other Update Operations
  - Updated address ranges
  - New street features
Additional 2010 Census Geographic Products

- Public Law 94-171 Geographic Redistricting Products
- Geographic Products to Accompany Summary Data Files
- Reference Maps
- Thematic Maps
- Reports
- Other Geographic Products
County Block Maps

- PDF – available on website in mid-March
- DVD to state officials
Block Assignment Files/Name Look-up Tables

- Listings of blocks and the corresponding geographic entity codes for a specific geographic entity type

- Name Look-up Tables list all codes and names for a specific geographic entity type
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Proposed Initiative: 2011 and Beyond
What is the Proposed Geographic Support System (GSS) Initiative?

- A budget increase over our base funding for:
  - Address coverage and source improvement
  - Feature maintenance (roads and attributes)
  - Quality Improvements
Why Do We Need the GSS Initiative?

- Between 2003 – 2009 we worked with you and other partners to update and improve the positional accuracy of TIGER and update our address list.

- This was a significant investment that we want to build upon.

- Now focus is on improving our address coverage and quality and maintaining the spatial data.
GSS Initiative - Addresses

Currently, our primary sources for address updates:
- USPS Delivery Sequence File (DSF)
- Field updates from censuses and surveys

For FY 11 and beyond, additional sources will focus on best available data from partnership and commercial files
GSS Initiative - Addresses

- Beyond the annual American Community Survey, current surveys will be using the Master Address File to support their statistical frames and surveys.

- Positively impacts the address frame for sample surveys.
Continuous update of street network and attributes

Sources will focus on best available data from partnership and commercial files

Working relationships must be
- Least intrusive
- Most efficient
- Ensure complete and quality data
Supporting a Targeted Address Canvassing

- There will be a shift in focus
  - from canvassing each street to a targeted canvassing
  - establishing an acceptable address list for each level of government
- What defines “acceptable” will be a partnership collaboration between governments and the Census Bureau
- Data quality will be an important component
Where are we now?

- Status of FY 11 budget
- Working groups formed to address specific aspects of the GSS
  - Address coverage
  - Address and spatial data sources
  - Policy
  - Partnerships
  - Quality assessment and evaluation
  - Research and Development
  - Technology
For the Geographic Support System Initiative to be Successful

- Partners are important
  - SDC/FSCPE/CIC
  - Federal, state, local, and tribal governments
- Educate your stakeholders as to the importance of updated TIGER and Census address file
  - Stress the importance of address and spatial standards
  - Encourage the update of the GIS Inventory
    - http://gisinventory.net
- Recommend government officials to participate in our initial fact finding discussions
Thank You!
For More Information

PUMA and UA questions
Geography Division, Geographic Standards and Criteria Branch

UA: Geo.geography@census.gov
www.census.gov/geo/www/ua/2010urbanruralclass.html

PUMA: geo.puma@census.gov
www.census.gov/geo/puma/puma2010.html

Count Question Resolution Program
Decennial Management Division
U.S. Census Bureau
Washington, DC 20233
CQR Branch number: 301-763-9329
CQR FAX number: 301-763-9321
CQR Email: dmd.cqr@census.gov
2010census.gov/about/cqr

Geographic Products
www.census.gov/geo/www/2010census

Everything else…
Los Angeles Regional Census Center
Geography Dept
818-717-6701