Geographic Classifications and Boundaries:
A U.S. Perspective ¹

Prepared by
U.S. Census Bureau

¹ This document is being produced without formal editing
Geographic Classifications and Boundaries: A U.S. Perspective

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U.S. Census Bureau
2010 Collection Geography

- Regional Offices (12)
- District Offices (490)
- Supervisor 2 Districts (4,000)*
- Supervisor 1 Districts (32,000)*
- Enumeration Districts (3,800,000)*
- Collection Blocks (6,700,000)

* = number dependent on field operation
<table>
<thead>
<tr>
<th>Field Operation Supervisor District</th>
<th>Crew Leader District</th>
<th>Assignment Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address Canvassing</td>
<td>748</td>
<td>5,668</td>
</tr>
<tr>
<td>Group Quarters Validation</td>
<td>151</td>
<td>1,273</td>
</tr>
<tr>
<td>Update/Leave</td>
<td>523</td>
<td>3,323</td>
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<tr>
<td>Update/Enumerate</td>
<td>178</td>
<td>1,037</td>
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<td>Non-Response Follow Up</td>
<td>4,062</td>
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<td>Remote Update/Enumerate</td>
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<td>13</td>
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<td>Remote Alaska</td>
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<tr>
<td>Census Coverage Measurement</td>
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<tr>
<td>Group Quarters Enumeration</td>
<td>494</td>
<td>1,579</td>
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<tr>
<td>Field Verification</td>
<td>494</td>
<td>494</td>
</tr>
</tbody>
</table>
2010 Collection Geography

• Collection Blocks

Criteria:
1) Bounded by roads, shorelines, county boundaries, American Indian reservation & trust land boundaries, military installation boundaries, and/or minor civil divisions in some states.
2) Contiguous

Guidelines:
1) Compactness
2) Size of Area

– Remained consistent through all census operations.

– No housing unit count requirement for collection blocks.
2010 Collection Geography

• Assignment Areas (AAs)

Criteria:
1) Built from one or more 2010 collection blocks
2) Cannot cross county boundaries, American Indian reservation & trust land boundaries, military installation boundaries, and/or minor civil divisions in some states.
3) Contiguous

Guidelines:
1) Compactness
2) Land Area

-A small geographic area consisting of a collection block or group of blocks established by the Census Bureau as a basic unit for data collection by a single enumerator for a single operation.
2010 Collection Geography

- Assignment Areas different by field operation

Address Canvassing

Census Coverage Measurement
The Basic Collection Unit (BCU)
A Proposal for the 2020 Census

- Replaces the collection block and assignment area concepts
- Incorporates new homogeneity requirements based on research
- Creates a single, stable, nationwide set of “basic collection units” to be used for all census and survey field operations
- Updated throughout the decade leading up to the 2020 Census, but will maintain comparability (splitting, merging, small boundary corrections)
- Provides a basic framework for 2020 Census planning
- Designed to meet the needs of statistical modeling for cost management (homogeneity and stability), and the needs of different field operations (navigability and manageable size)
Dissemination Geography

**Legal**
- States (50)
- Counties (3,000)
- County subdivisions (Towns & townships) (31,000)
- Places (Incorporated) (19,000)
- Indigenous areas (Reservations and trust land) (400)

**Administrative**
- Election areas (186,000)
- School areas (13,000)
- Postal areas (33,000)

**Statistical**
- Regions (5)
- Divisions (10)
- County subdivisions (Census county divisions) (5,000)
- Places (Census designated) (10,000)
- Indigenous areas (Statistical areas) (280)
- Census tracts (74,000)
- Block groups (220,000)
- Tabulation blocks (11 million)
- Metropolitan/Micropolitan areas (1,000)
- Urban areas (3,000)
- Traffic analysis areas (228,000)
Geographic Area Update Programs

- Boundary and Annexation Survey (BAS)
- Redistricting Data Program (RDP)
- School District Review Program (SDRP)
- Participant Statistical Areas Update (PSAP)
- Tribal Statistical Areas Update (TSAP)
- Public Use Microdata Area (PUMA) Program
- Traffic Analysis Zone (TAZ) Program
Boundary and Annexation Survey (BAS)

• A voluntary survey of local, county, and tribal governments
• Conducted annually to collect information about legal geographic areas
• Primary source of information for:
  – Legal boundary
  – Names of government
  – Functional status (active or inactive)
  – Type of governmental unit
  – New government
  – Dissolved government
  – Boundary change
  – Legal geographic relationship
    • e.g., incorporated place annexes into a new county
Participant Statistical Areas Program (PSAP)

• Allows local participants, following Census Bureau criteria and guidelines, to review and suggest modifications to the boundaries and names for statistical geographic areas

• Includes:
  Census Tracts
  Block Groups
  Census Designated Places (CDPs)
  Census County Divisions (CCDs)
County Subdivisions

Minor Civil Divisions (legal)

• Legal sub-county entities in 29 states, the District of Columbia, Puerto Rico, and the Island Areas
• May have a formal government with elected officials

Census County Divisions (statistical)

• Statistical sub-county entities that have stable boundaries and recognizable names in 21 states
• No minimum or maximum population guidelines
Nationwide Classification of County Subdivisions

Minor Civil Divisions (MCDs) are legally established entities with a suite of governmental and/or administrative functions. Census County Divisions (CCDs) are statistical entities delineated for the U.S. Census Bureau for census data presentation purposes. Unorganized Territories are statistical entities not included in any legally established MCD or independent incorporated Place.

Source: U.S. Census Bureau, TIGER Shapefiles
Places

Incorporated Places (legal)
- Referred to as cities, boroughs, towns, or villages, depending on the state
- Some form of local governance (city council, mayor, etc) recognized by the state
- Boundaries maintained through annual BAS program

Census Designated Places (statistical)
- Area with a concentration of population, housing, and commercial structures identifiable by name; not within an incorporated place
Smoke Rise CDP, 2010
Census Tracts

- Small, relatively permanent statistical subdivisions of a county
- Relatively consistent boundaries over time, partner changes once per decade
- Increased importance over time for data analysis
- Optimally 4,000 people; range between 1,200 and 8,000
- About 74,000 for 2010 Census, 65,000 for Census 2000, and 50,690 for the 1990 Census
- Defined nationwide for the first time for the 1990 Census
Tabulation Blocks

- Smallest units for 100% data tabulation
- Cover entire nation
- Nest within all other types of geographic areas
- Generally bounded by visible features or boundaries
- Batch delineation algorithm
- Last geographic area delineated for the census
Census Tract

Imperial and El Centro, CA

- Census tracts
- Imperial city
- El Centro city

0 0.5 1 Miles

United States Census Bureau

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
ZIP Code Tabulation Areas (ZCTAs)

- Approximate USPS ZIP Code distribution for housing units
- Represent the most frequently occurring ZIP Code within an area
- A calculated geography
- Composed of whole blocks
- ZCTAs do not nest cleanly within other geography
- 2010 ZCTAs exclude large water bodies and unpopulated areas
Major Considerations for Geographic Areas

- 100% Counts vs. Sample
- Relationship to Other Geographic Areas
- Changing Boundaries – comparability over time
- Unintended Uses
- Products
- Schedule
- Maintenance
- Resources
Specific Considerations for Geographic Areas

- Disclosure avoidance
- Data swapping
- Data suppression
- Data reliability
- Sample size
- Response rates
- Response options
- Response quality
- Detailed characteristics / microdata
- Weighting
- Sample frame
- Density measures
- Frequency of censuses / surveys
- Frequency of data releases
- Frequency of boundary changes

- Type of boundary changes
- Field verification
- Use of non-visible boundaries
- Spatial accuracy of data
- Imagery verification
- Authoritative sources
- Nesting relationship with other geographic areas
- Sliver geography / subtraction geography
- Access to technology (GIS, GPS, etc.)
- Number of geographic areas
- Relationship to and accuracy of base data (roads, water, and buildings)
- Contiguity
- Compactness
- Cartographic considerations / generalization of boundaries
## Data availability

<table>
<thead>
<tr>
<th></th>
<th>Decennial Census</th>
<th>American Community Survey</th>
<th>Population Estimates Program</th>
<th>Economic Census (2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incorporated Places</strong></td>
<td>All</td>
<td>All in 5-year estimates, &gt;20,000 in 3-year, &gt;65,000 in 1-year</td>
<td>All</td>
<td>2,500 or more persons/jobs</td>
</tr>
<tr>
<td><strong>Census Designated Places</strong></td>
<td>All</td>
<td>All in 5-year estimates, &gt;20,000 in 3-year, &gt;65,000 in 1-year</td>
<td>Not included</td>
<td>2,500 or more persons/jobs</td>
</tr>
<tr>
<td><strong>Minor Civil Divisions (MCDs)</strong></td>
<td>All</td>
<td>All in 5-year estimates, &gt;20,000 in 3-year, &gt;65,000 in 1-year</td>
<td>20 states only</td>
<td>12 states only</td>
</tr>
<tr>
<td><strong>Census County Divisions (CCDs)</strong></td>
<td>All</td>
<td>All in 5-year estimates, &gt;20,000 in 3-year, &gt;65,000 in 1-year</td>
<td>Not included</td>
<td>Not included</td>
</tr>
</tbody>
</table>
## Geographic Stability/Maintenance

<table>
<thead>
<tr>
<th></th>
<th>Boundary</th>
<th>Update Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporated Places</td>
<td>Annual update</td>
<td>Annual Boundary and Annexation Survey (BAS)</td>
</tr>
<tr>
<td>Census Designated</td>
<td>Decennial (10 year update)</td>
<td>Participant Statistical Areas Program (PSAP)</td>
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</tbody>
</table>
Wrap up

• Diverse legal/statistical framework
• Mixed hierarchical infrastructure
• Multiple components and relationships
  • All units relate to blocks, but not all units relate to each other directly
• Flexible, multi-purpose entities
  • Tracts, blocks
• Targeted, focused purpose entities
  • School districts, election districts

• Cultivation of engaged internal and external user base
• Public/private, internal/external customers
• Various avenues pursued for consultation and exchange at all stages
• Constant, active solicitation of input
Wrap up, continued

• Interrelation between statistical and legal
  – Legal areas create basic frame
  – Statistical areas used to support and “fill in gaps” where necessary
  – Interoperation creates diverse, robust framework

• Flexible geographic architecture
  Implementation of statistical and legal entities provides opportunities to strengthen collection and dissemination capacities
  – Adapt to geographic change quickly
  – Address new dissemination requirements
  – Support unexpected collection needs
Recommendations

• For world-wide comparable statistical data:
  – Determine a set of standard geographies
  – Ensure definitions of areas are consistent

• Suggest:
  – Block
  – Tract
  – Urban/Rural