The ABC’s (CBGT’s) of Census Geography
Overview

- Census Geography 101
- TIGER to Shapefiles
- Geographic Boundaries and Codes
- MAF
- Resources
### Census Geographic Concepts

#### Legal/Administrative and Statistical Areas

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Standard Hierarchy of Census Geographic Entities

NATION
Standard Hierarchy of Census Geographic Entities

NATION

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Standard Hierarchy of Census Geographic Entities

NATION

|- REGIONS

|- DIVISIONS
Standard Hierarchy of Census Geographic Entities

NATION

| REGIONS |

| DIVISIONS |

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Standard Hierarchy of Census Geographic Entities

NATION
  └── REGIONS
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Standard Hierarchy of Census Geographic Entities

NATION
  └── REGIONS
    └── DIVISIONS
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        └── Counties
          └── Census Tracts
Standard Hierarchy of Census Geographic Entities

NATION

REGIONS

DIVISIONS

STATES

Counties

Census Tracts

Block Groups
Standard Hierarchy of Census Geographic Entities

- Nation
  - Regions
    - Divisions
      - States
        - Counties
          - Census Tracts
            - Block Groups
              - Census Blocks
Standard Hierarchy of Census Geographic Entities

- **NATION**
  - **REGIONS**
    - Urban Areas
    - Metropolitan Areas
  - Census Blocks
Standard Hierarchy of Census Geographic Entities

NATION

REGIONS

DIVISIONS

STATES

- School Districts
- Congressional Districts
- Economic Places


Places

- Oregon Urban Growth Areas
- State Legislative Districts
- Alaska Native Regional Corporations

Urban Areas

Metropolitan Areas

Census Blocks
Standard Hierarchy of Census Geographic Entities

NATION

REGIONS

DIVISIONS

STATES

Counties

ZIP Code Tabulation Areas (2000)
School Districts
Congressional Districts
Economic Places
Voting Districts
Traffic Analysis Zones
County Subdivisions

Census Tracts

Places

Urban Areas
Metropolitan Areas
Oregon Urban Growth Areas
State Legislative Districts
Alaska Native Regional Corporations

Block Groups

Census Blocks
Small Geographic Areas

- **Blocks**
  - Smallest units for decennial Census data tabulation
  - Cover entire nation
  - Nest within all other types of geographic areas
  - Generally bounded by visible features or boundaries

- **Block Groups**
  - Groups of blocks sharing first digit of block number
  - Smallest units for tabulation of American Community Survey data
  - Population ranges from 1,000 to 3,000
  - Nest within census tracts
Census Tracts

- Small, relatively permanent statistical subdivisions of a county
- Relatively consistent boundaries over time
- Size: optimally 4,000 people; range between 1,000 and 8,000
- Approximately 65,000 census tracts in U.S.
- Defined nationwide for the first time in Census 2000; however Block Numbering Areas (BNAs) and tracts covered the entirety of the nation in 1990
County Subdivisions

- Minor Civil Divisions (MCDs)
  - Legally bounded entity
  - Subcounty 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 (CCDs)
  - Statistical entity
  - Subcounty units that have stable boundaries and recognizable names in 21 states.
  - No minimum or maximum population guidelines
Minor Civil Division (MCD)

- The most common descriptor is township
- Others are:
  - Election district
  - Magisterial district
  - Parish governing authority district (Louisiana only)
  - Supervisor district (Mississippi only)
  - Election precinct (Illinois and Nebraska)
  - Gore (Maine and Vermont)
  - Grant (New Hampshire and Vermont)
  - Location (New Hampshire only)
  - Plantation (Maine only)
  - Purchase (New Hampshire only)
  - Town
  - City or Village (in Wisconsin)
Places

- Incorporated Places
  - Legally bounded entity
  - Referred to as cities, boroughs, towns, or villages, depending on the state

- Census Designated Places (CDPs)
  - Statistical entity
  - Created to present census data for an area with a concentration of population, housing, and commercial structures that is identifiable by name, but not within an incorporated place
  - Example: Windsor, WI
Places

There are four descriptors used for places:

- Borough (Connecticut, New Jersey, Pennsylvania)
- City
- Town
- Village
Places
Dunn County, WI
Some unincorporated communities are not defined as CDPs.
TIGER -> Shapefile

- 1990 – First TIGER/Line
- 2006 SE – Last TIGER/Line
- 2007 – First TIGER/SHP

- TIGER - **Topologically Integrated Geographic Encoding and Referencing** system
- TIGER/Line Shapefile – ESRI Shapefile format
  - TIGER – lots of specialized processing
  - Shapefile – Ready to use on download
# 2009 TIGER/Line® Shapefiles

## What are the TIGER/Line Shapefiles?

- May 2009 extracts containing geographic and cartographic information from the Census Bureau's MAF/TIGER® (Master Address File/Topologically Integrated Geographic Encoding and Referencing) database.
- The files provide the digital map base for a Geographic Information System or mapping software. The files do not contain any mapping software.
- Contain the boundaries for legal entities as of January 1, 2009.
- They include spatial data for geographic features such as roads, railroads, rivers, and lakes, as well as legal and statistical geographic areas that correspond to the 2009 American Community Survey, 2009 Population Estimates, 2007 Economic Census, and Census 2000.
- The geographic entity codes needed to link the Census Bureau's demographic data to the geography are included in the files. The TIGER/Line Shapefiles do not contain any demographic or economic data; data must be downloaded separately.
- Metadata in Extensible Markup Language (XML) format is included with each compressed file.

## Download

- [Download the 2009 TIGER/Line Shapefiles now.](#)

## Technical Documentation

- [Access complete technical documentation, user notes, and a description of the organizational structure of the files.](#)

## Frequently Asked Questions

- [Frequently asked questions about TIGER/Line Shapefiles.](#)

### Questions or Comments?

Email us: geo.tiger@census.gov
Call us: (301) 763-1128

Source: U.S. Census Bureau, Geography Division, Geographic Products Branch
Nation-based Shapefiles

- American Indian/Alaska Native/Native Hawaiian Area (Current)
- American Indian/Alaska Native/Native Hawaiian Area (Census 2000)
- American Indian Tribal Subdivision (Current)
- American Indian Tribal Subdivision (Census 2000)
- County and Equivalent (Current)
- County and Equivalent (Census 2000)
- Combined New England City and Town Area
- Combined Statistical Area
- Metropolitan Division
- Metropolitan/Micropolitan Statistical Area
- New England City and Town Area
- New England City and Town Area Division
- State and Equivalent (Current)
- State and Equivalent (Census 2000)
- State and Equivalent (Economic Census)
- Urban Area (Corrected Census 2000)
- Urban Area (Census 2000)
- 3-Digit ZIP Code Tabulation Area (2002)
- 3-Digit ZIP Code Tabulation Area (Census 2000)
- 5-Digit ZIP Code Tabulation Area (2002)
- 5-Digit ZIP Code Tabulation Area (Census 2000)
- Military Installation

State- and County-based Shapefiles

To download state-based shapefiles, select a state or equivalent.

To download county-based shapefiles, select a state, and then a county.

- Alabama

American Indian Area-based Shapefiles:

Select an area

- Bois Forte Reservation

Documentation

- How are the files organized?
- Technical Documentation
- User Notes
- Access our FTP site for additional downloading options

Download Selected Files

Source: US Census Bureau, Geography Division
Nation-based Shapefiles

Select All  Clear Selection
- American Indian/Alaska Native/Native Hawaiian Area (Current)
- American Indian/Alaska Native/Native Hawaiian Area (Census 2000)
- American Indian Tribal Subdivision (Current)
- American Indian Tribal Subdivision (Census 2000)
- County and Equivalent (Current)
- County and Equivalent (Census 2000)
- Combined New England City and Town Area
- Combined Statistical Area
- Metropolitan Division
- Metropolitan/Metropolitan Statistical Area
- New England City and Town Area
- New England City and Town Area Division
- State and Equivalent (Current)
- State and Equivalent (Census 2000)
- State and Equivalent (Economic Census)
- Urban Area (Corrected Census 2000)
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- 5-Digit ZIP Code Tabulation Area (Census 2000)
- Military Installation

Download Selected Files

State- and County-based Shapefiles

To download state-based shapefiles, select a state or equivalent:

Wisconsin

Submit

American Indian Area-based Shapefiles:

Select an area

Boise Forte Reservation

Submit

Documentation

- How are the files organized?
- Technical Documentation
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Source: US Census Bureau, Geography Division
Wisconsin Shapefiles

- American Indian/Alaska Native/Native Hawaiian Area (Current)
- American Indian/Alaska Native/Native Hawaiian Area (Census 2000)
- American Indian Tribal Subdivision (Current)
- American Indian Tribal Subdivision (Census 2000)
- Block (Current)
- Block (Census 2000)
- Block Group (Census 2000)
- Census Tract (Census 2000)
- Congressional District (111th)
- Congressional District (108th)
- County and Equivalent (Current)
- County and Equivalent (Census 2000)
- County and Equivalent (Economic Census)
- County Subdivision (Current)
- County Subdivision (Census 2000)
- Combined Statistical Area
- Metropolitan Division
- Metropolitan/Micropolitan Statistical Area
- Place (Current)
- Place (Census 2000)
- Place (Economic Census)
- Super Public Use Microdata Area (Census 2000)
- Public Use Microdata Area (Census 2000)
- Elementary School District (Current)
- Elementary School District (Census 2000)
- Secondary School District (Current)
- Secondary School District (Census 2000)
- Unified School District (Current)
- Unified School District (Census 2000)
- State and Equivalent (Current)
- State and Equivalent (Census 2000)
- State Legislative District (Lower Chamber) (Current)
- State Legislative District (Lower Chamber) (Census 2000)
- State Legislative District (Upper Chamber) (Current)
- State Legislative District (Upper Chamber) (Census 2000)
- 5-Digit ZIP Code Tabulation Area (2002)
- 3-Digit ZIP Code Tabulation Area (2002)
- Military Installation

Wisconsin County Files:

Adams County

Download Selected Files

Source: US Census Bureau, Geography Division
Files for: Adams County

- All Lines
- Area Hydrography
- Area Landmark
- Point Landmark
- Topological Faces (Polygons With All Geocodes)
- Block (Current)
- Block (Census 2000)
- Block Group (Census 2000)
- Census Tract (Census 2000)
- County Subdivision (Current)
- County Subdivision (Census 2000)
- Traffic Analysis Zone (Census 2000)
- Address Range-Feature Name Relationship File
- Address Ranges Relationship File
- Feature Names Relationship File
- Other Identifiers Relationship File
- Topological Faces-Area Hydrography Relationship File
- Topological Faces-Area Landmark Relationship File

Source: US Census Bureau, Geography Division
Geographic Boundaries

- Multiyear estimates are based on geographic boundaries as of January 1 of the last year in the multiyear period.

- Boundary Annexation Survey (BAS) collects boundary changes.

- Boundaries of other statistical areas will be updated every decade in conjunction with the decennial census.
Geographic Identifiers

- **Code Sets:**
  - Federal Information Processing Series (FIPS) [STFID, Geo Id]
  - American National Standard Institute (ANSI)
  - Census Specific

- **FIPS Code Example:**

<table>
<thead>
<tr>
<th>Area</th>
<th>Name</th>
<th>FIPS Code</th>
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<tbody>
<tr>
<td>State</td>
<td>Wisconsin</td>
<td>55</td>
</tr>
<tr>
<td>County</td>
<td>Dane</td>
<td>025</td>
</tr>
<tr>
<td>Place</td>
<td>Madison, City</td>
<td>48000</td>
</tr>
</tbody>
</table>

- 55025 = Dane County, WI
- 550254800 = Madison, WI
Master Address File (MAF)

- Official inventory of all known housing units in the U.S. and Puerto Rico
- Updated using information from
  - U.S. Postal Service
  - local governments (LUCA!)
  - Census field operations
- The ACS sample is drawn from the MAF
MAF/TIGER Database
MAF/TIGER Database
Digital representation of Geographic Features
GetFacts

- http://www.getfacts.wisc.edu
Geographic Areas Reference Manual

http://www.census.gov/geo/www/garm.html
Questions

- wrbuckin@wisc.edu