The ABC's (CBGT's) of Census Geography

Applied Population Laboratory, University of Wisconsin –Madison

WLIA – February 24, 2010

Overview

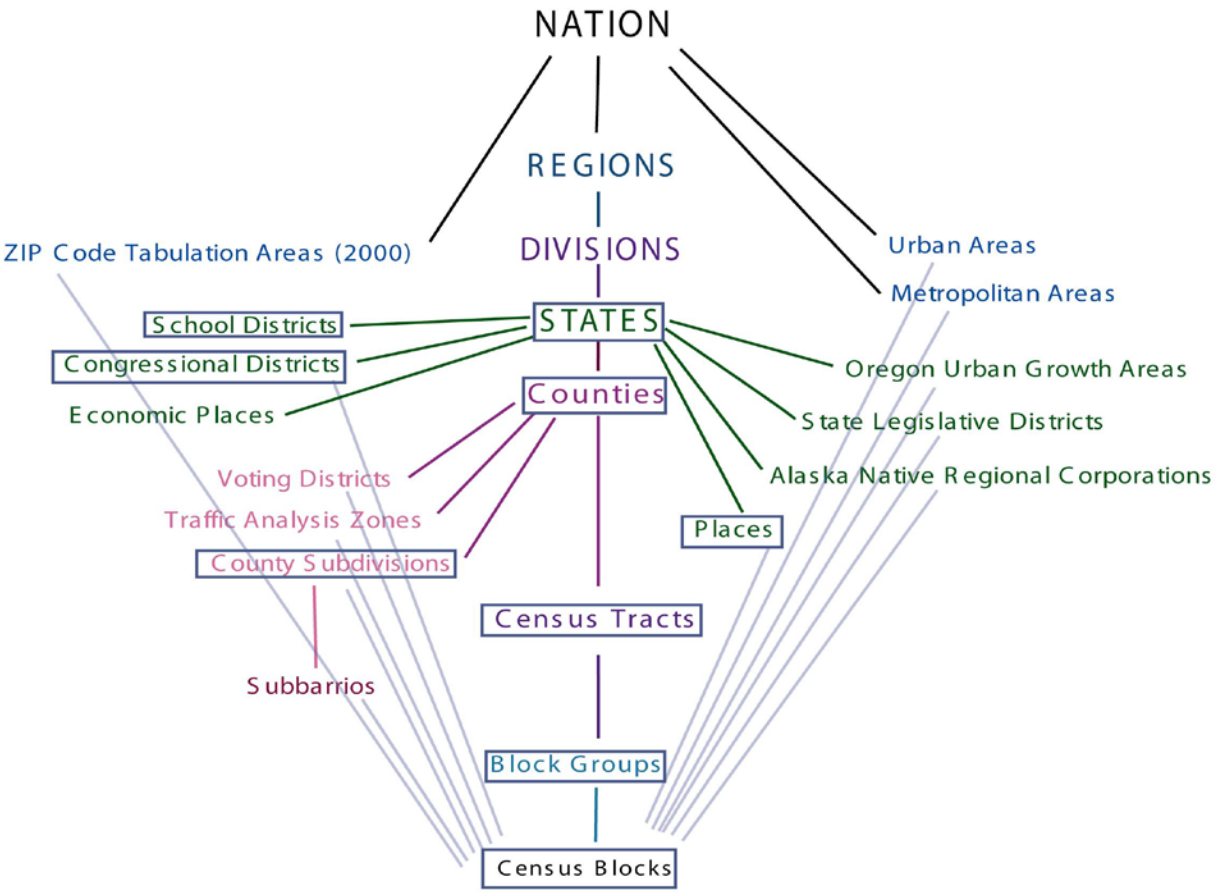
- Census Geography 101
- TIGER to Shapefiles
- Geographic Boundaries and Codes
- MAF
- Resources

Census Geographic Concepts

Legal/Administrative and Statistical Areas

Legal/Administrative Areas	Statistical Areas
Nation	Regions
States	Divisions
Counties	Census County Divisions
Minor Civil Divisions	Census Designated Places
Incorporated Places	Metropolitan and Micropolitan Statistical Areas
Congressional Districts	Urban / Rural Areas
School Districts	Census Tracts
Voting Districts	Block Groups
ZIP Code Tabulation Areas	Public Use Microdata Areas

Standard Hierarchy of Census Geographic Entities



Standard Hierarchy of Census Geographic Entities

NATION

Standard Hierarchy of Census Geographic Entities

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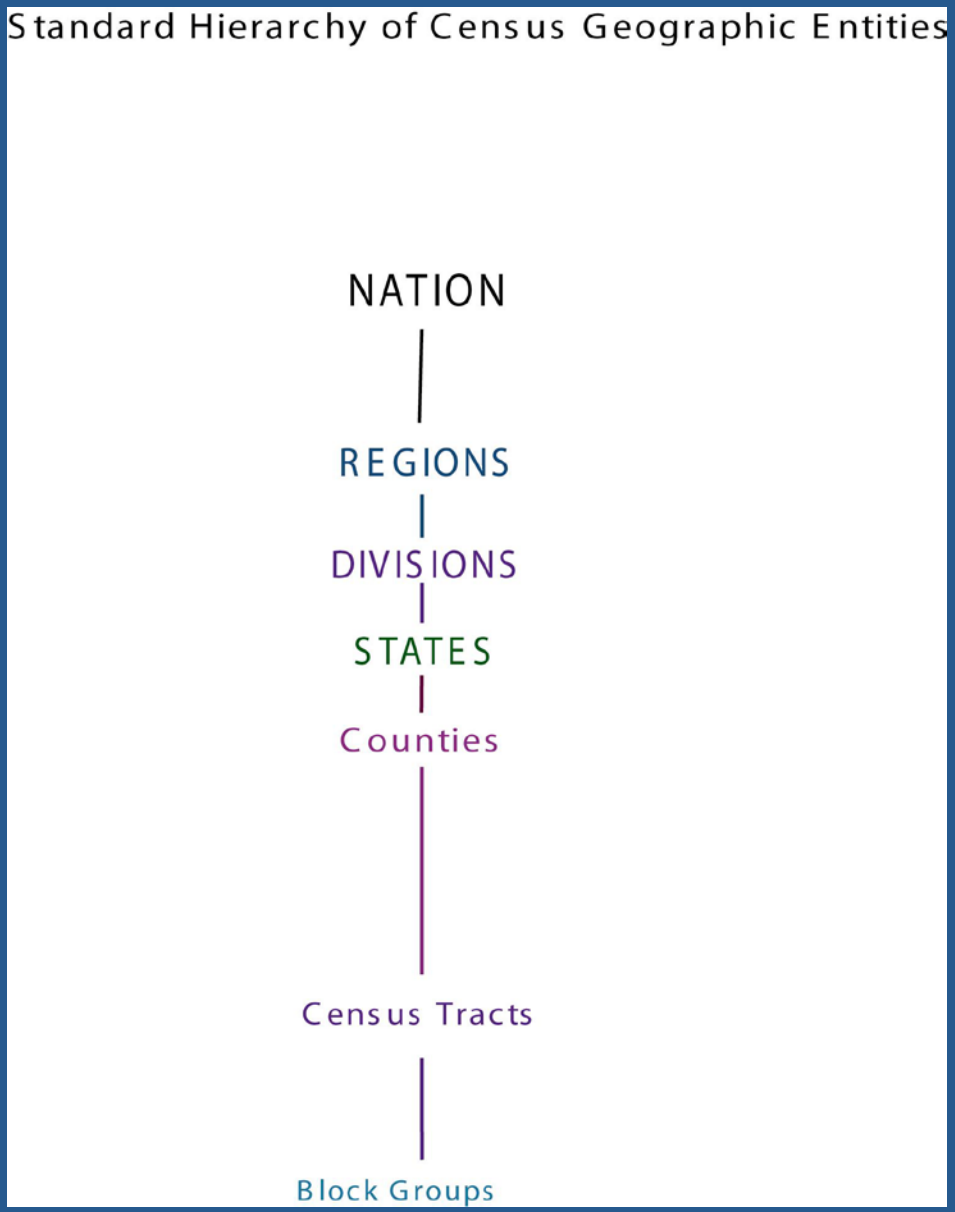
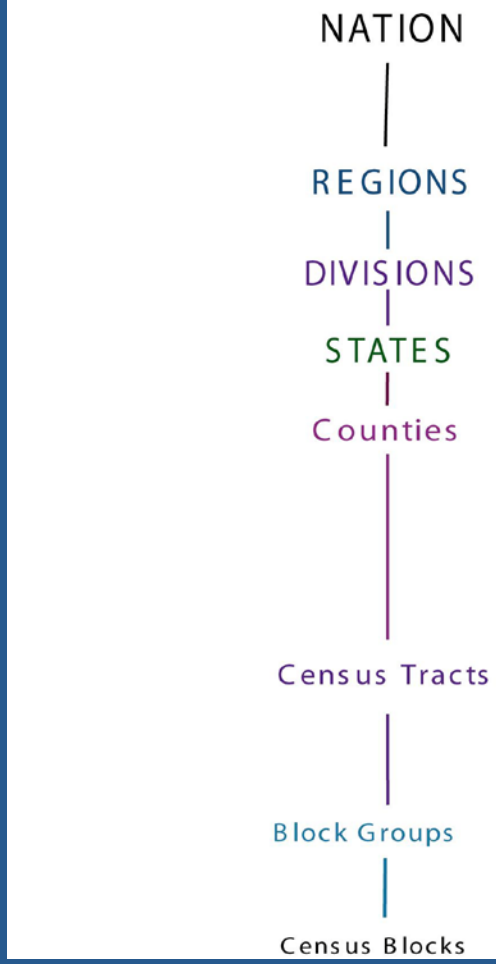
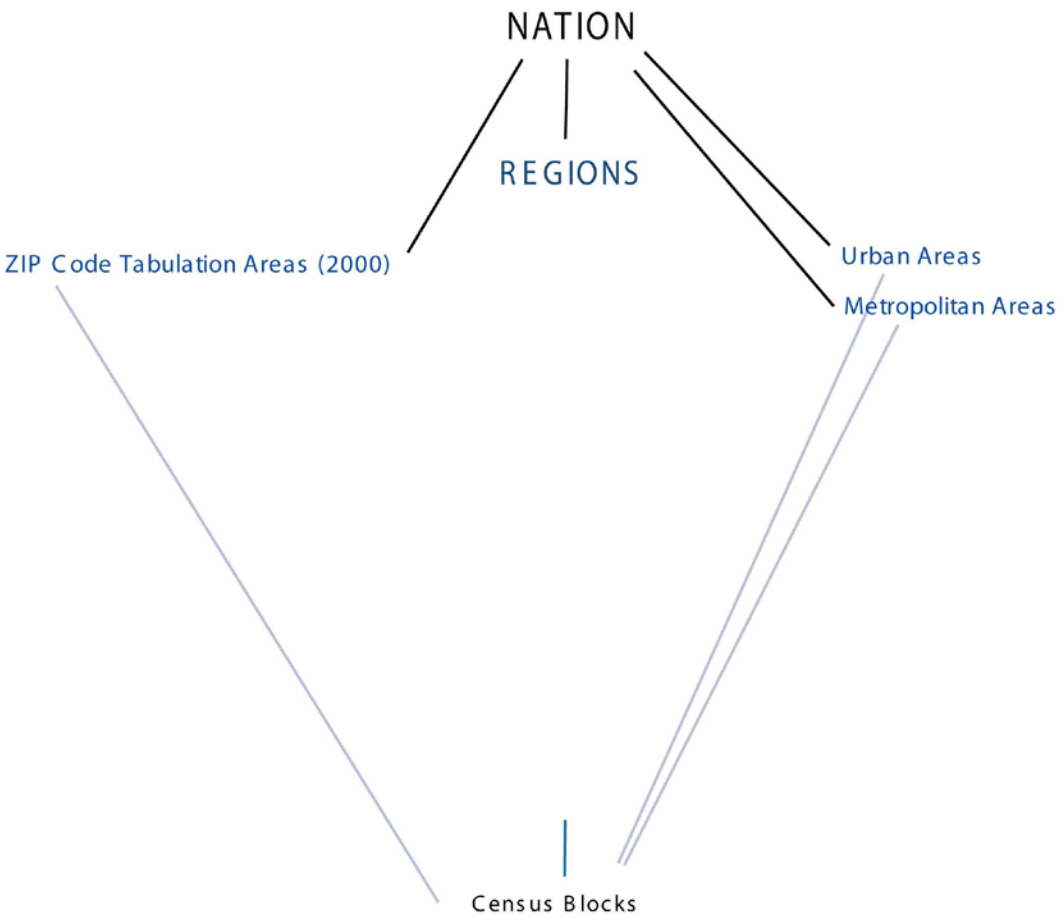
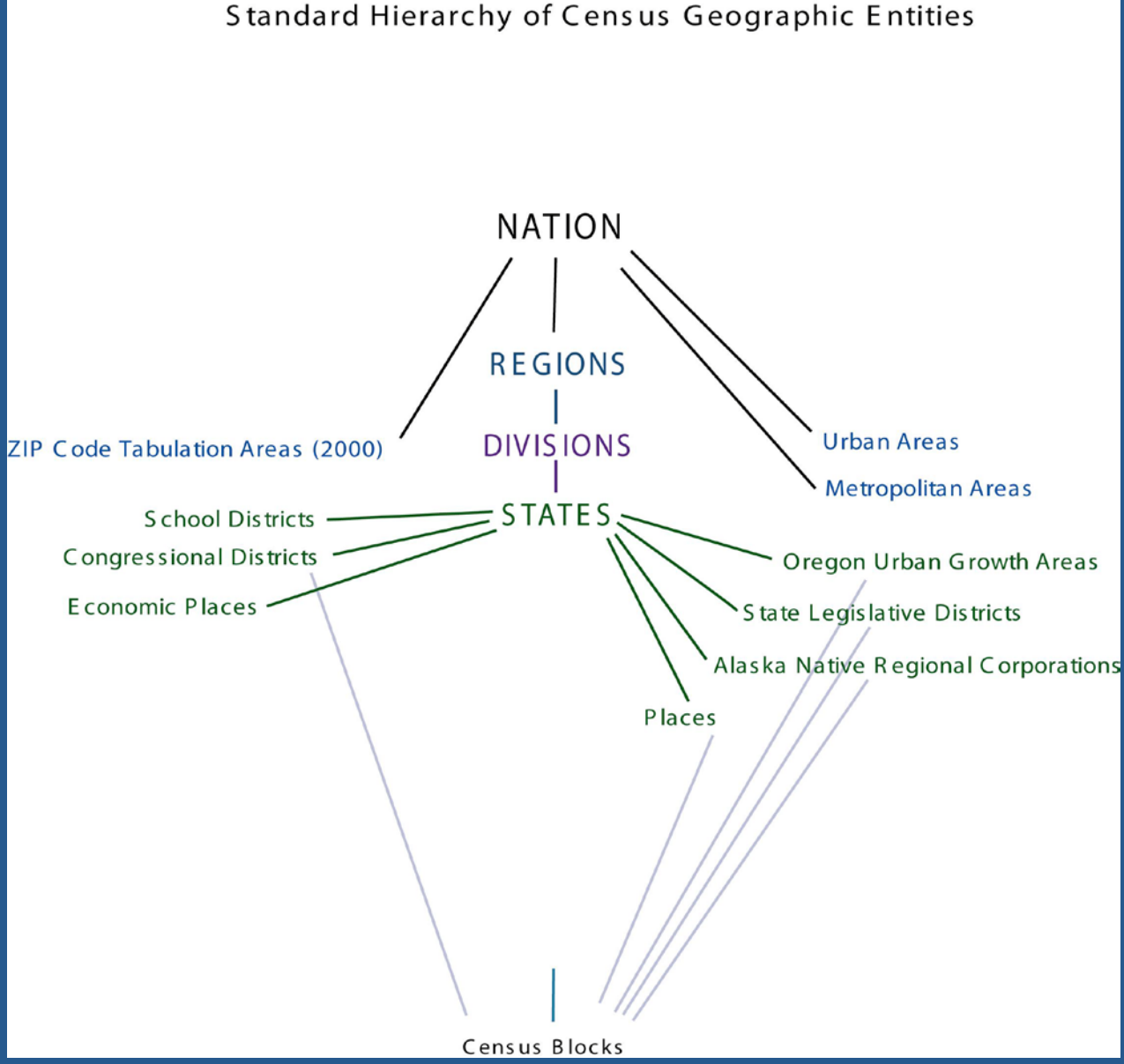


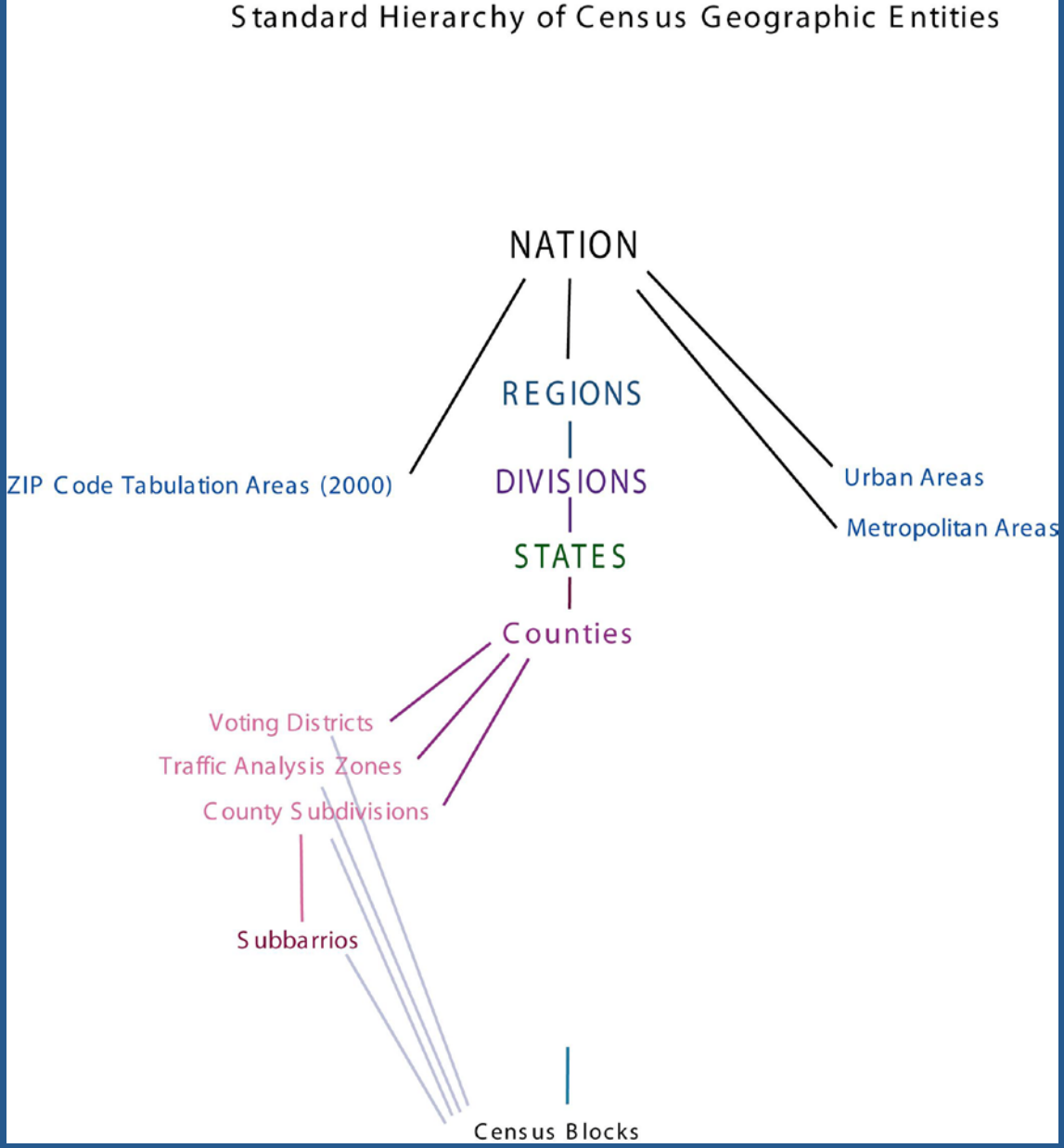
Standard Hierarchy of Census Geographic Entities



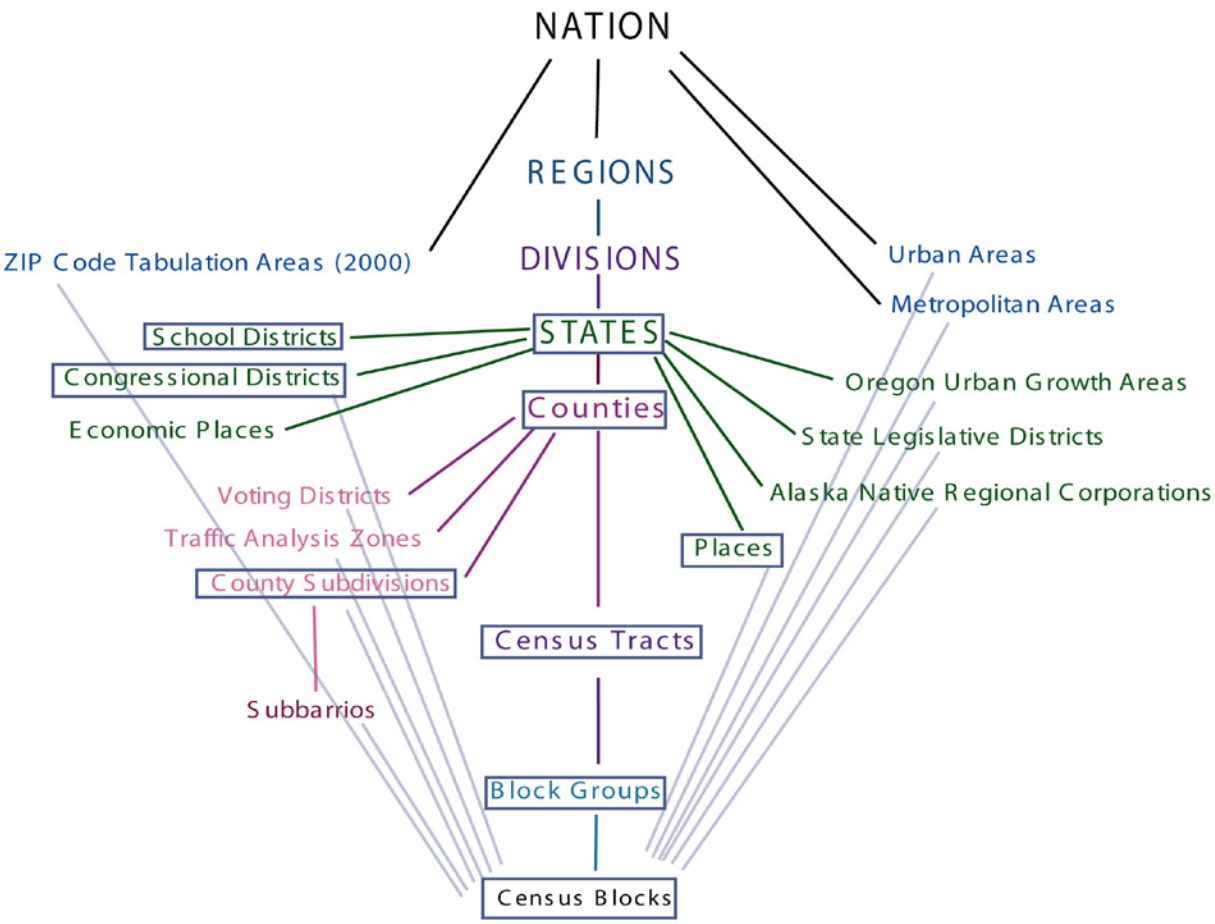
Standard Hierarchy of Census Geographic Entities




Standard Hierarchy of Census Geographic Entities
NATION
REGIONS
DIVISIONS
STATES
ZIP Code Tabulation Areas (2000)
Urban Areas
Metropolitan Areas
School Districts
Congressional Districts
Economic Places
Oregon Urban Growth Areas
State Legislative Districts
Alaska Native Regional Corporations
Places
Census Blocks


Standard Hierarchy of Census Geographic Entities
NATION
REGIONS
DIVISIONS
STATES
Counties
ZIP Code Tabulation Areas (2000)
Urban Areas
Metropolitan Areas
Voting Districts
Traffic Analysis Zones
County Subdivisions
Subbarrios
Census Blocks

Standard Hierarchy of Census Geographic Entities



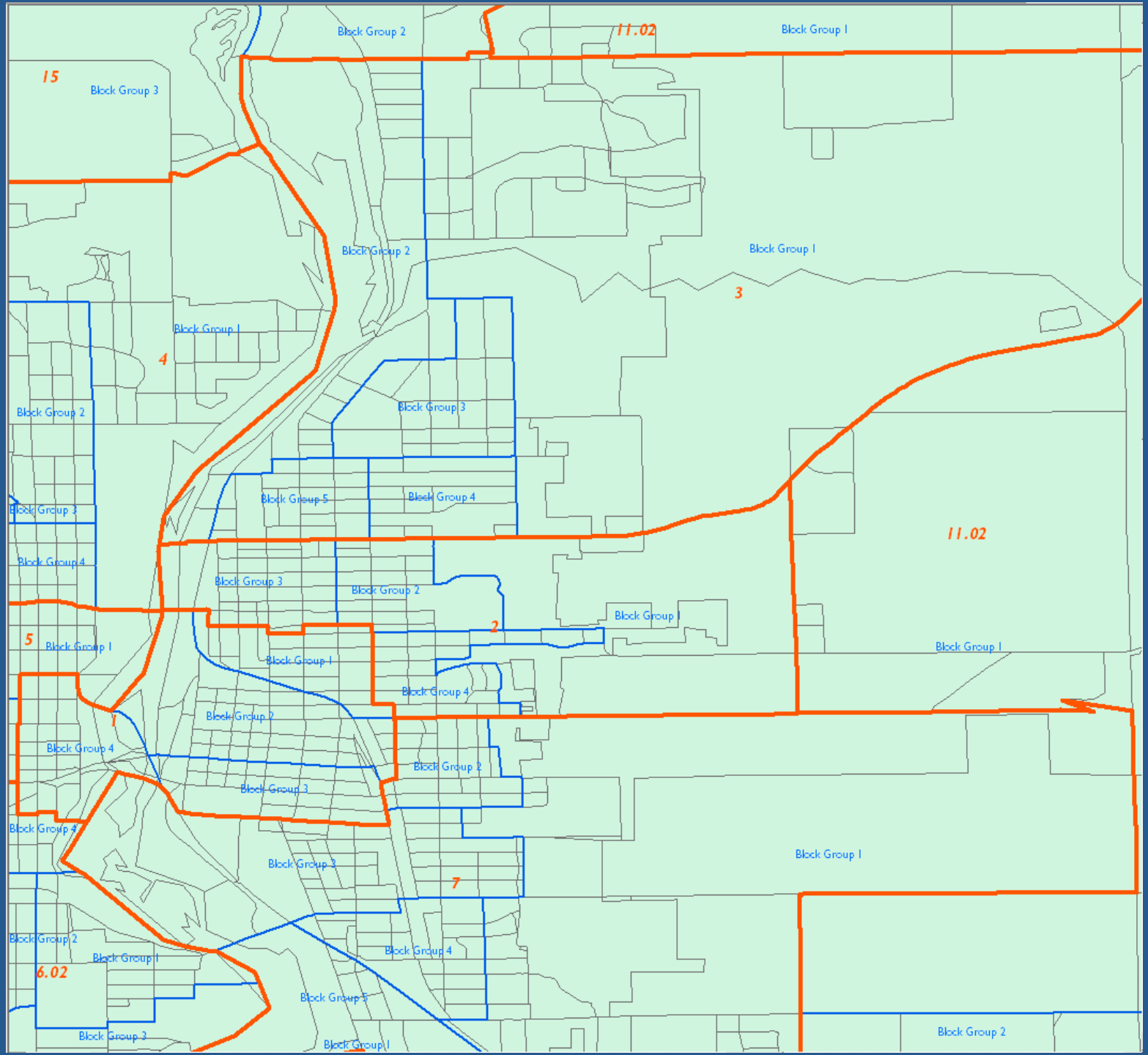
Small Geographic Areas

- ***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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Block Group 5
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11.02
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5
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6.02
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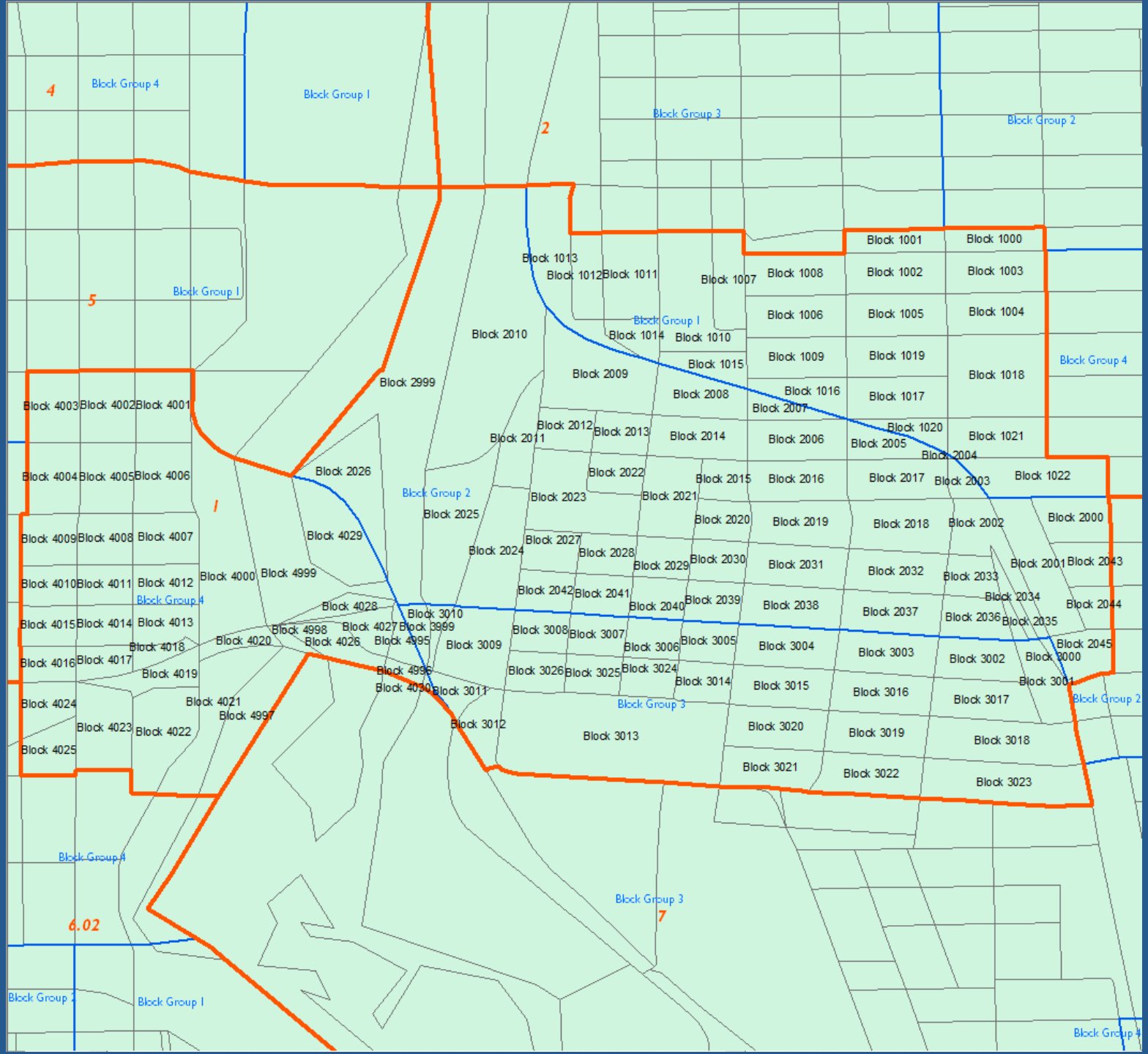
Block Group 1
Block Group 2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Block Group 1
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Block Group 3
Block Group 2
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Block Group 3
7
Block Group 1
Block Group 4

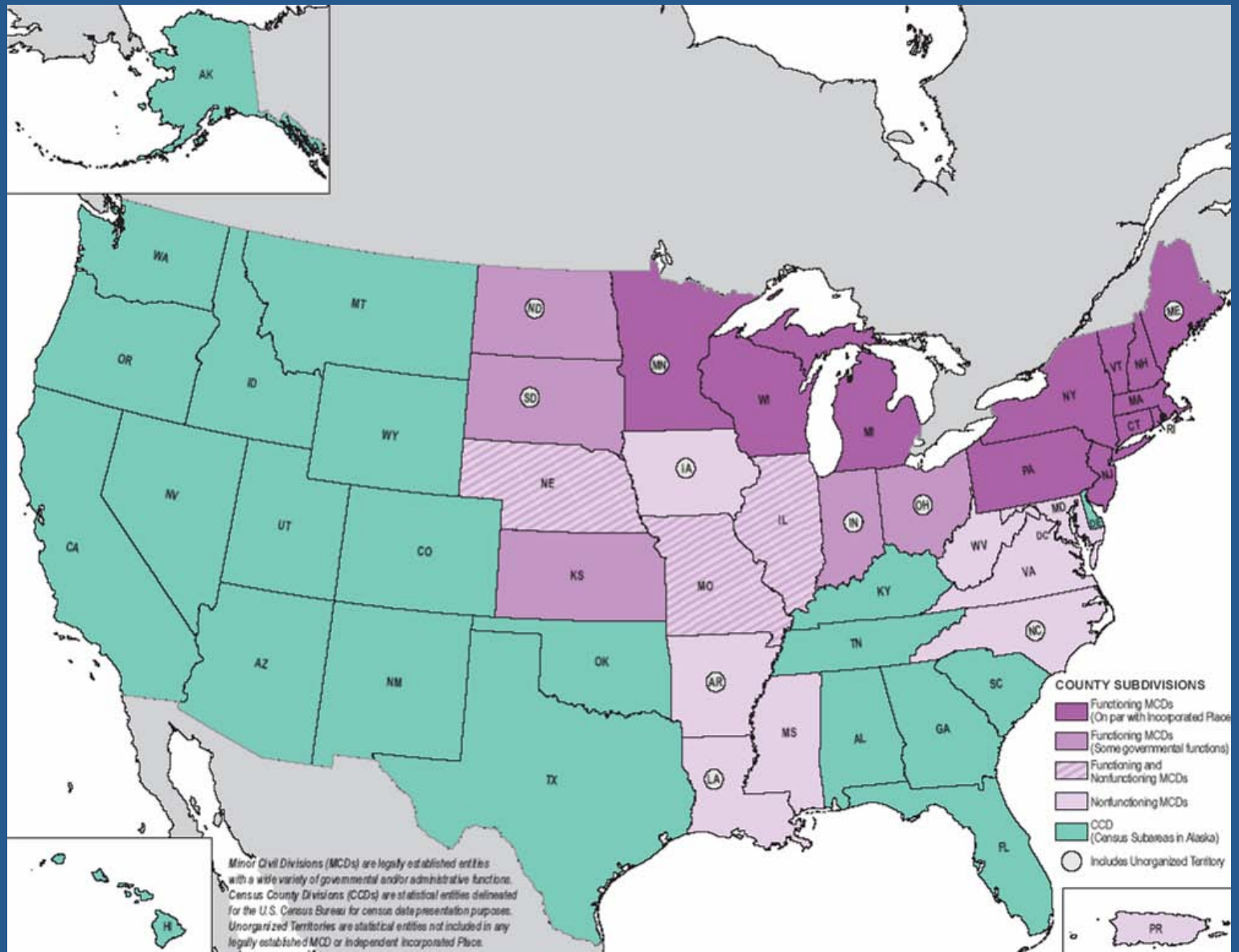
County Subdivisions

- 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

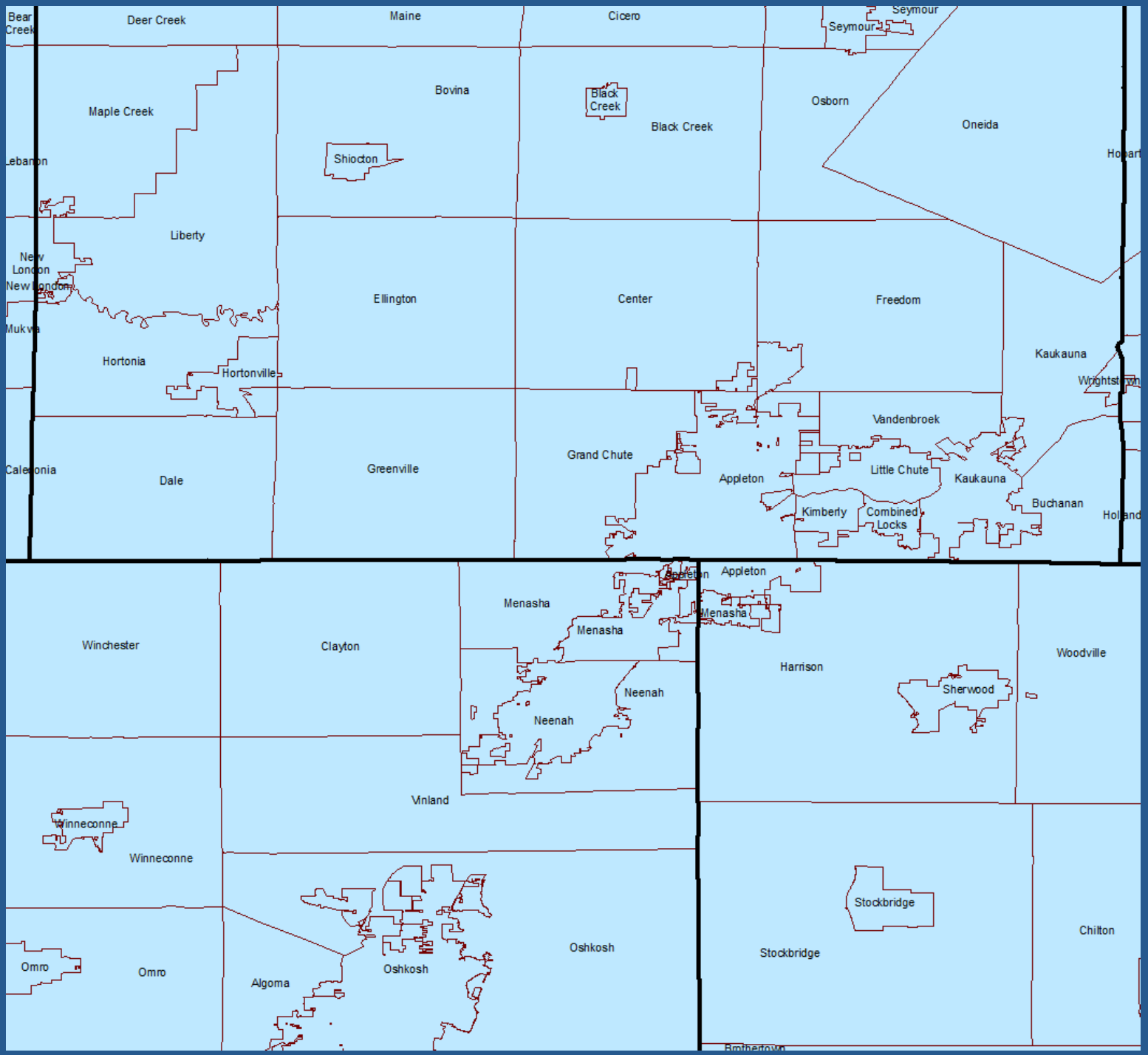
County Subdivisions

Distribution Map of MCDs and CCDs



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)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Deer Creek
Maine
Cicero
Seymour
Seymour
Maple Creek
Bovina
Black Creek
Black Creek
Osborn
Oneida
Lebanon
Shiocton
Liberty
New London
New London
Ellington
Center
Freedom
Mukwa
Hortonia
Hortonville
Kaukauna
Vandenbroek
Caledonia
Dale
Greenville
Grand Chute
Appleton
Little Chute
Kaukauna
Buchanan
Kimberly
Combined Locks
Appleton
Appleton
Menasha
Menasha
Menasha
Winchester
Clayton
Harrison
Woodville
Neenah
Neenah
Sherwood
Vinland
Winneconne
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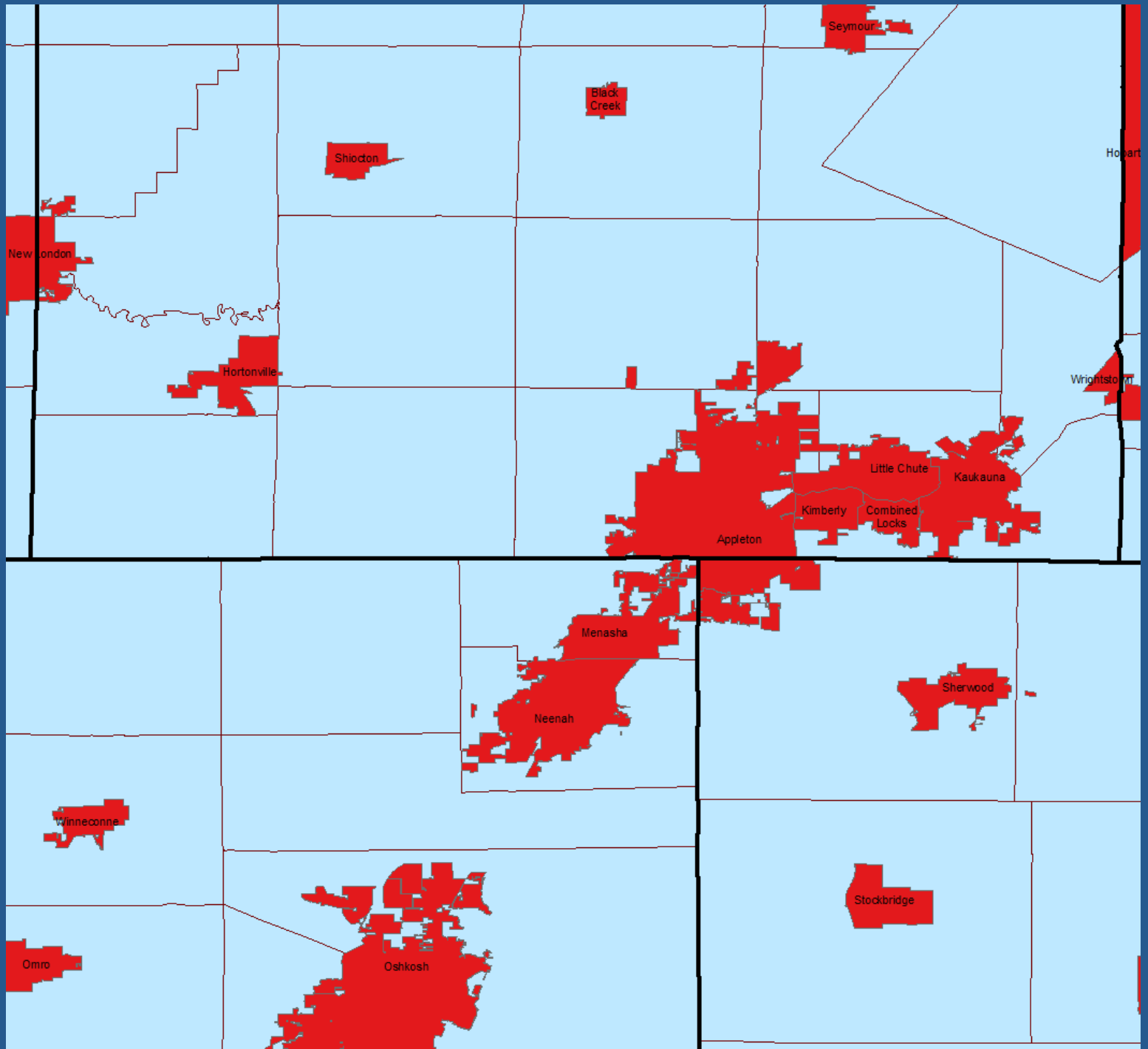
Stockbridge
Chilton
Omro
Omro
Algoma
Oshkosh
Oshkosh
Stockbridge


Seymour
Black Creek
Shiocton
New London
Hortonville
Wrightstown
Little Chute
Kaukauna
Kimberly
Combined Locks
Appleton
Menasha
Neenah
Sherwood
Winneconne
Stockbridge
Omro
Oshkosh

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

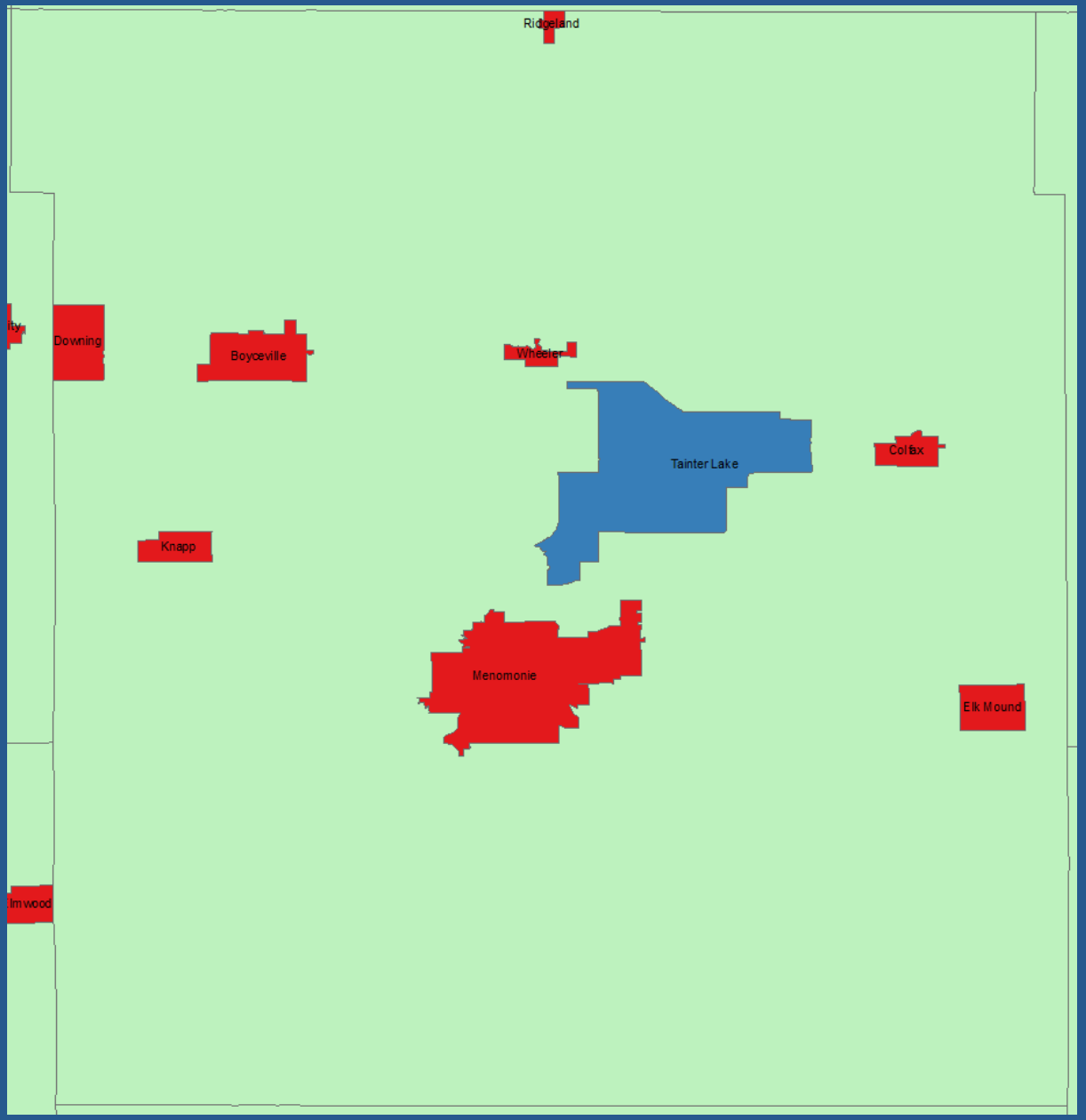
Places

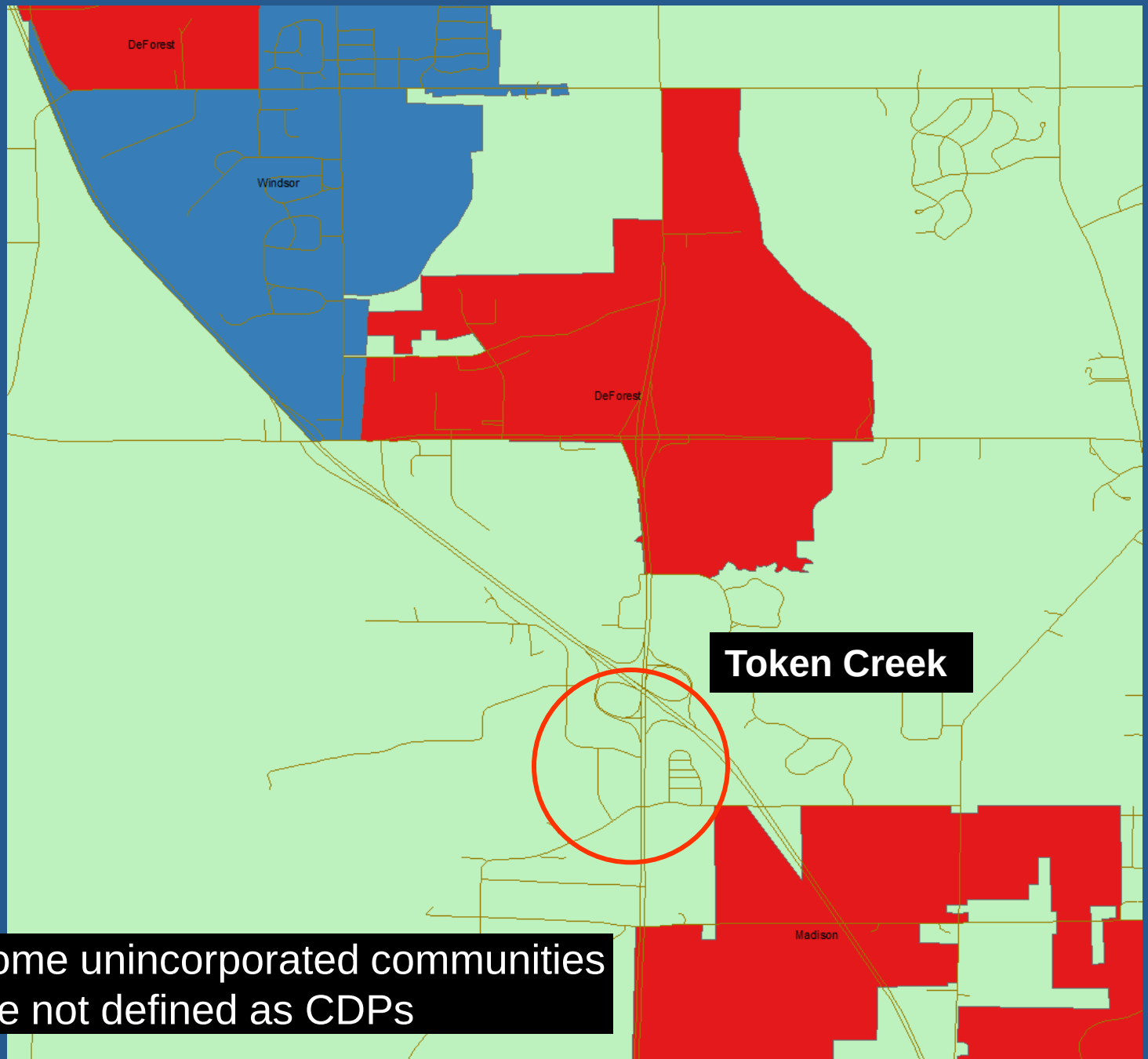
- There are four descriptors uses for places:

- 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 - **T**opologically **I**ntegrated **G**eographic **E**ncoding and **R**eferencing system
- TIGER/Line Shapefile – ESRI Shapefile format
  - TIGER – lots of specialized processing
  - Shapefile – Ready to use on download

2009 TIGER/Line® Shapefiles

TIGER Navigation

2009 TIGER/Line Shapefiles main
- Download Shapefiles
- Technical Documentation
- User Notes
- Organization of Files

Previous Versions
- 2008 TIGER/Line Shapefiles
- 2007 TIGER/Line Shapefiles
- TIGER/Line Files

Geography Main Page

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

2009 TIGER/Line® Shapefiles

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/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

Download Selected Files

Source: US Census Bureau, Geography Division

2009 TIGER/Line Shapefiles Main

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 submit

American Indian Area-based Shapefiles:

Select an area

Bois Forte Reservation submit

Documentation

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

2009 TIGER/Line® Shapefiles

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)
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- County and Equivalent (Census 2000)
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- 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)
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- Military Installation

Download Selected Files

Source: US Census Bureau, Geography Division

2009 TIGER/Line Shapefiles Main

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.

Wisconsin submit

American Indian Area-based Shapefiles:

Select an area

Bois Forte Reservation submit

Documentation

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2009 TIGER/Line® Shapefiles for: Wisconsin

Wisconsin 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)
- 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

Download Selected Files

Source: US Census Bureau, Geography Division

Return to: national files | 2009 TIGER/Line Shapefiles Main

Wisconsin County Files:

Adams County | submit

2009 TIGER/Line® Shapefiles for: Adams County, Wisconsin

Return to: national files | Wisconsin files | 2009 TIGER/Line Shapefiles Main

Files for: Adams County

Select All | Clear Selection

- 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

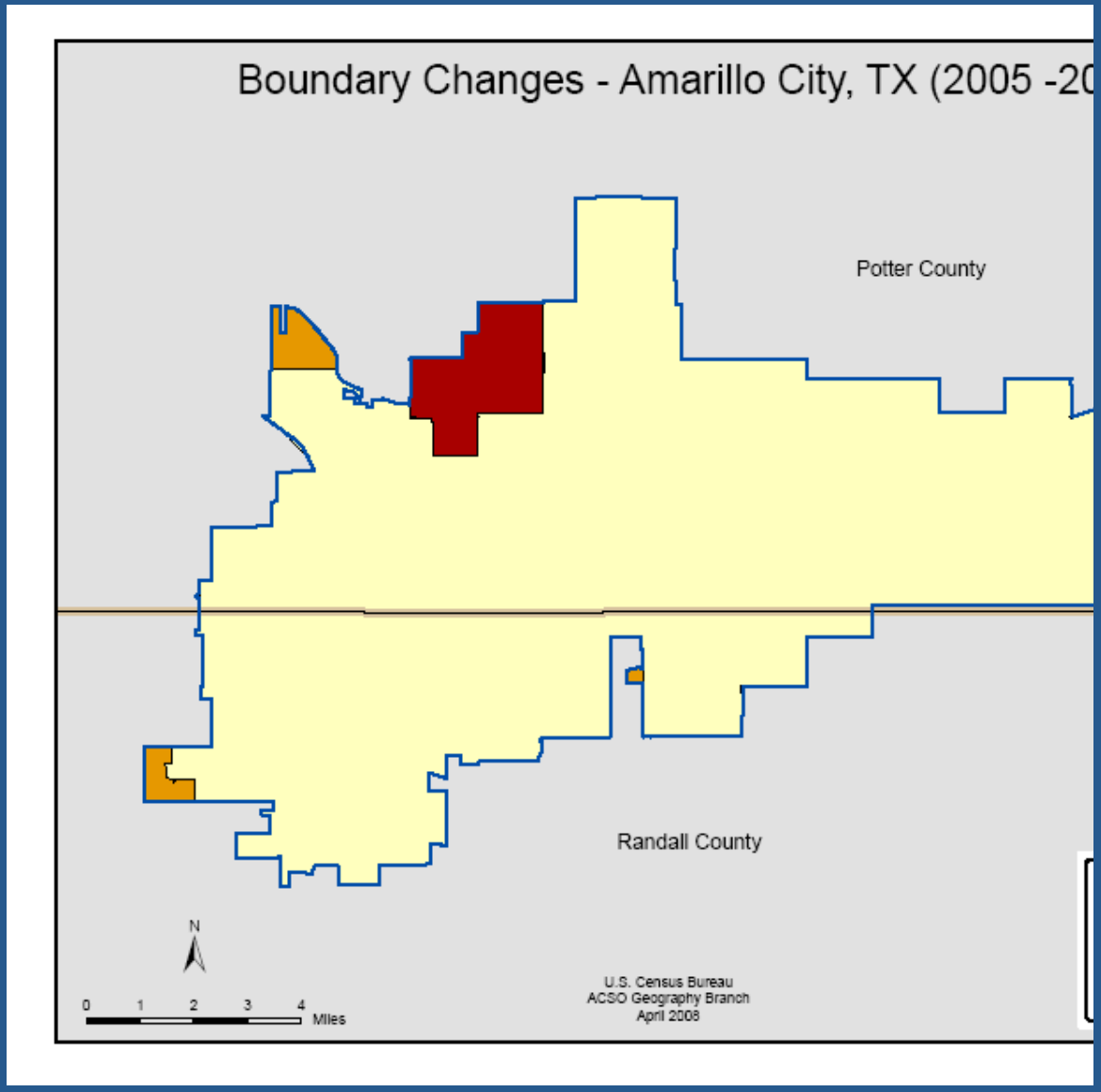
Download Selected Files

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 Boundaries



Geographic Identifiers

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

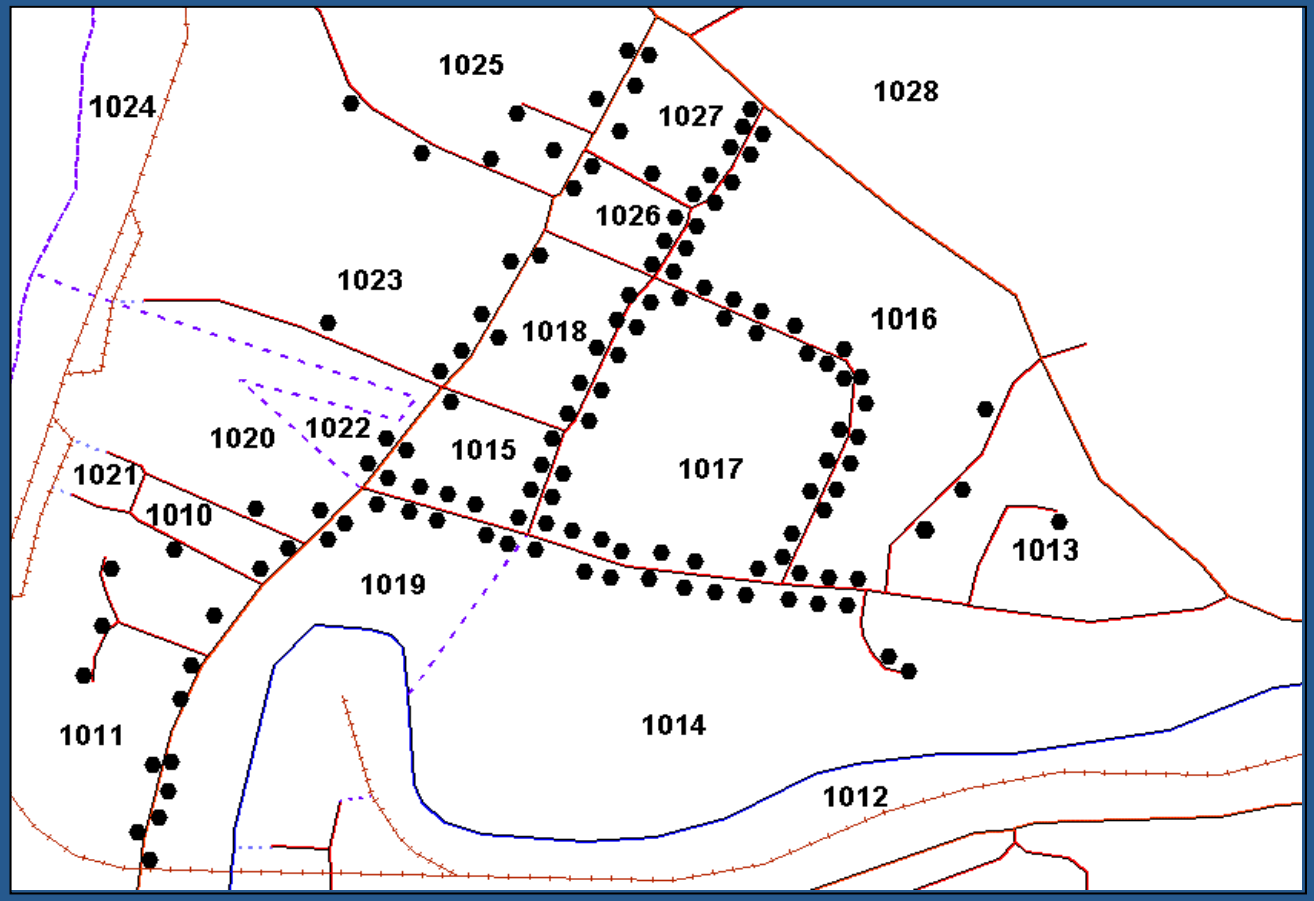
Area	Name	FIPS Code
State	Wisconsin	55
County	Dane	025
Place	Madison, City	48000

- 55025 = Dane County, WI
- 550254800 = Madison, WI

Master Address File (MAF)

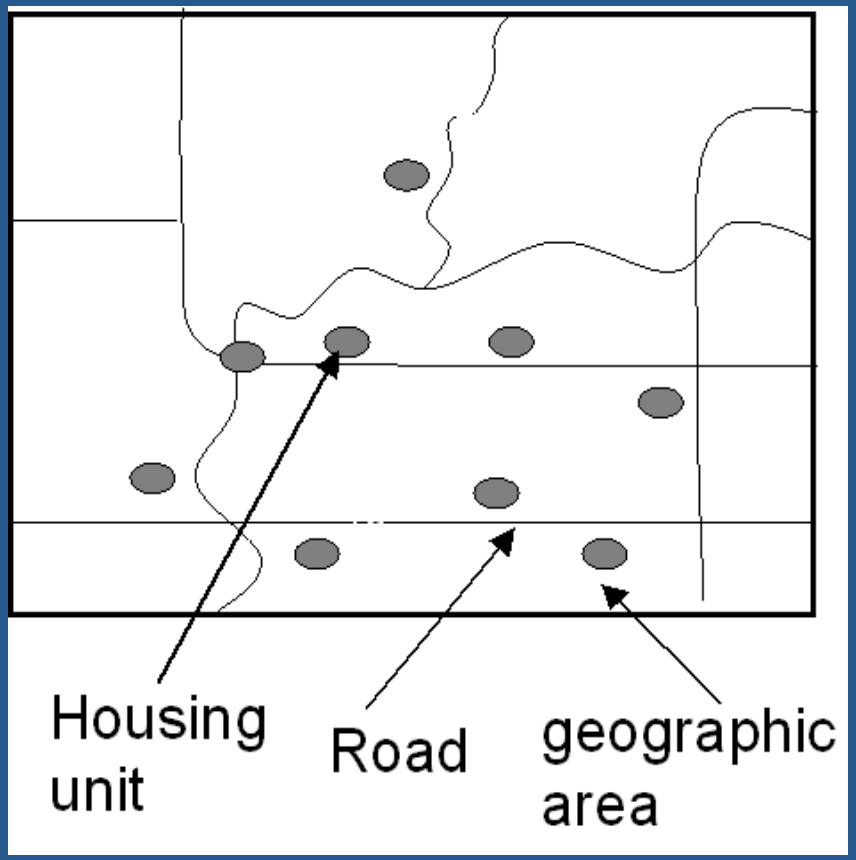
- Official inventory of all known housing units in the U.S. and Puerto Rico
- Updated using information from
  - U.S. Postal Service
  - local governments (LUCA!)
  - Census field operations
- The ACS sample is drawn from the MAF

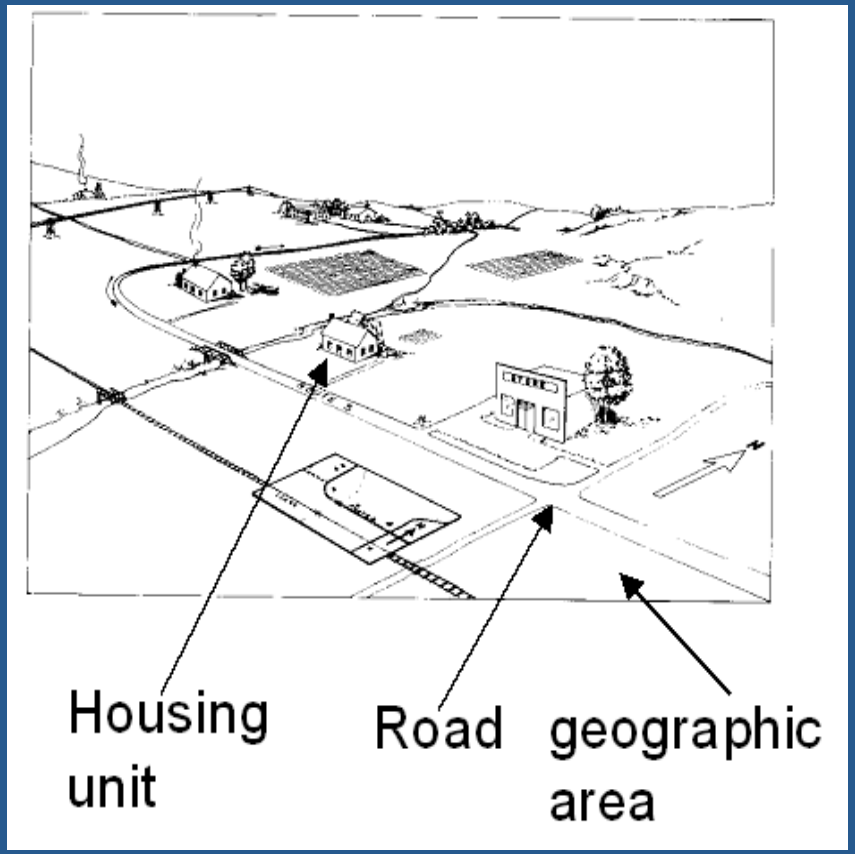
MAF/TIGER Database



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