

Spatial Analysis and Dissemination

Defining Spatial Analysis

What does spatial analysis mean in the context of a national statistical organization?

- Decision support?
- Policy analysis?
- Accessibility and vulnerability studies?
- Easily discoverable demographic and economic data?

Spatial Analysis at the U.S. Census Bureau

Geographers at the U.S. Census Bureau disseminate secondary statistical data sets and reports that include descriptive statistics.

Other organizations produce further policy and inferential analysis.

- Discoverable
- Organized by geography
- Formatted for desktop analysis

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Cartographic Boundary Shapefiles

What Are They?

The cartographic boundary files are simplified representations of selected geographic areas from the Census Bureau's MAF/TIGER. Generalized boundary files are clipped to a simplified version of the U.S. outline. As a result, some off-shore areas may be excluded. For more details about these files, please see our [Cartographic Boundary File Description page](#).

Download Files

Cartographic Boundary files are available in shapefile format for the 2010 Census, Census 2000, and selected geographies for other years, but includes metadata in the ISO format.

Getting an error message while trying to download these files?

Please check your URL and change "https" to "http". Some browsers are defaulting to "https" and our ftp servers cannot connect to <http://www.census.gov>.

- Nation-based Files
 - [American Indian Areas/Alaska Native Areas/Hawaiian Home Lands](#)
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 - [Metropolitan and Micropolitan Statistical Areas and Related Statistical Areas](#)
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Vintages of Geographic Data Available Through TIGER

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TIGER Products

TIGER = Topologically Integrated Geographic Encoding and Referencing

TIGER products are spatial extracts from the Census Bureau's MAF/TIGER database, containing features such as roads, railroads, rivers, as well as legal and statistical geographic areas. The Census Bureau offers several file types and an online mapping application. Our products are:

- [TIGER/Line Shapefiles - New 2014 Shapefiles](#)
- [TIGER/Line Geodatabases](#)
- [TIGER/Line with Selected Demographic and Economic Data](#)
- [Cartographic Boundary Shapefiles](#)
- [KML - Cartographic Boundary Files](#)
- [TIGERweb](#)

25 Years and Counting

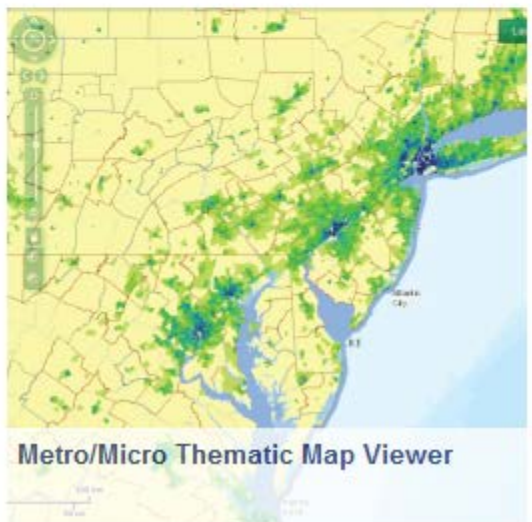
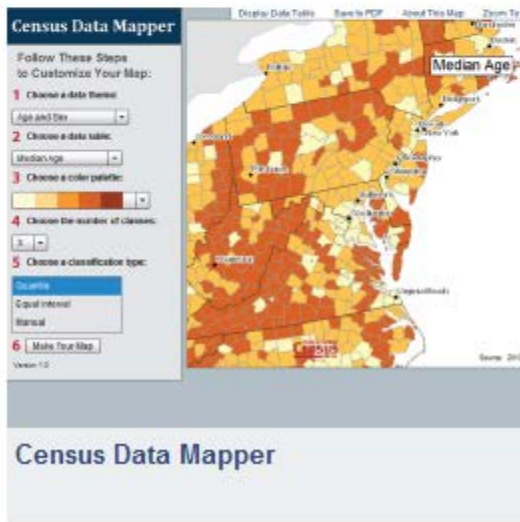
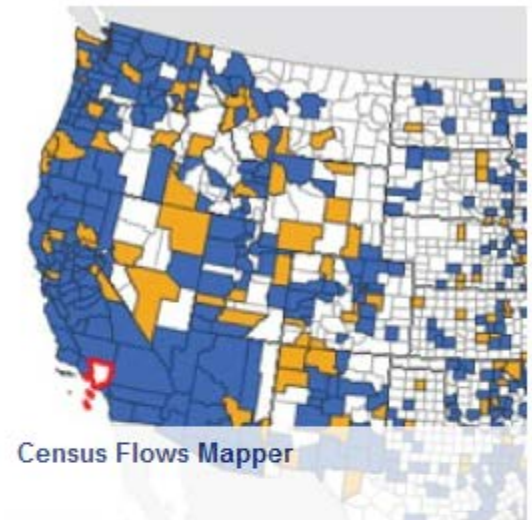
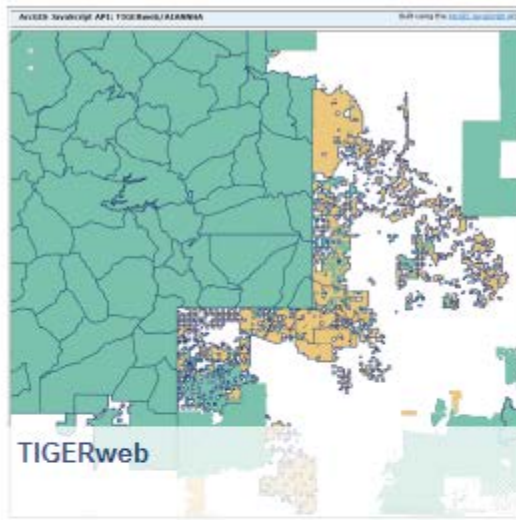
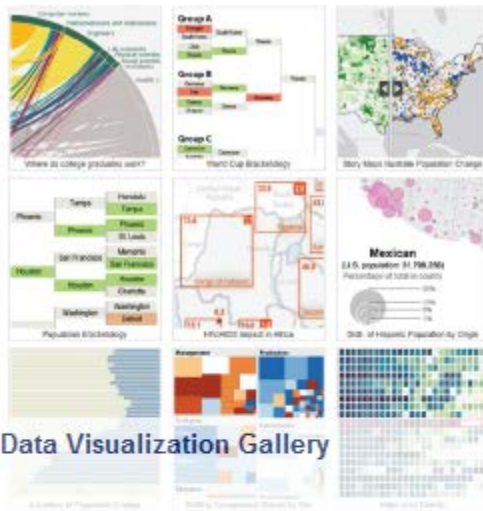
- [TIGER Story Map \(Part 1\)](#)
- [Happy 25th Anniversary, TIGER](#)

[TIGER Data and Product FAQs](#)

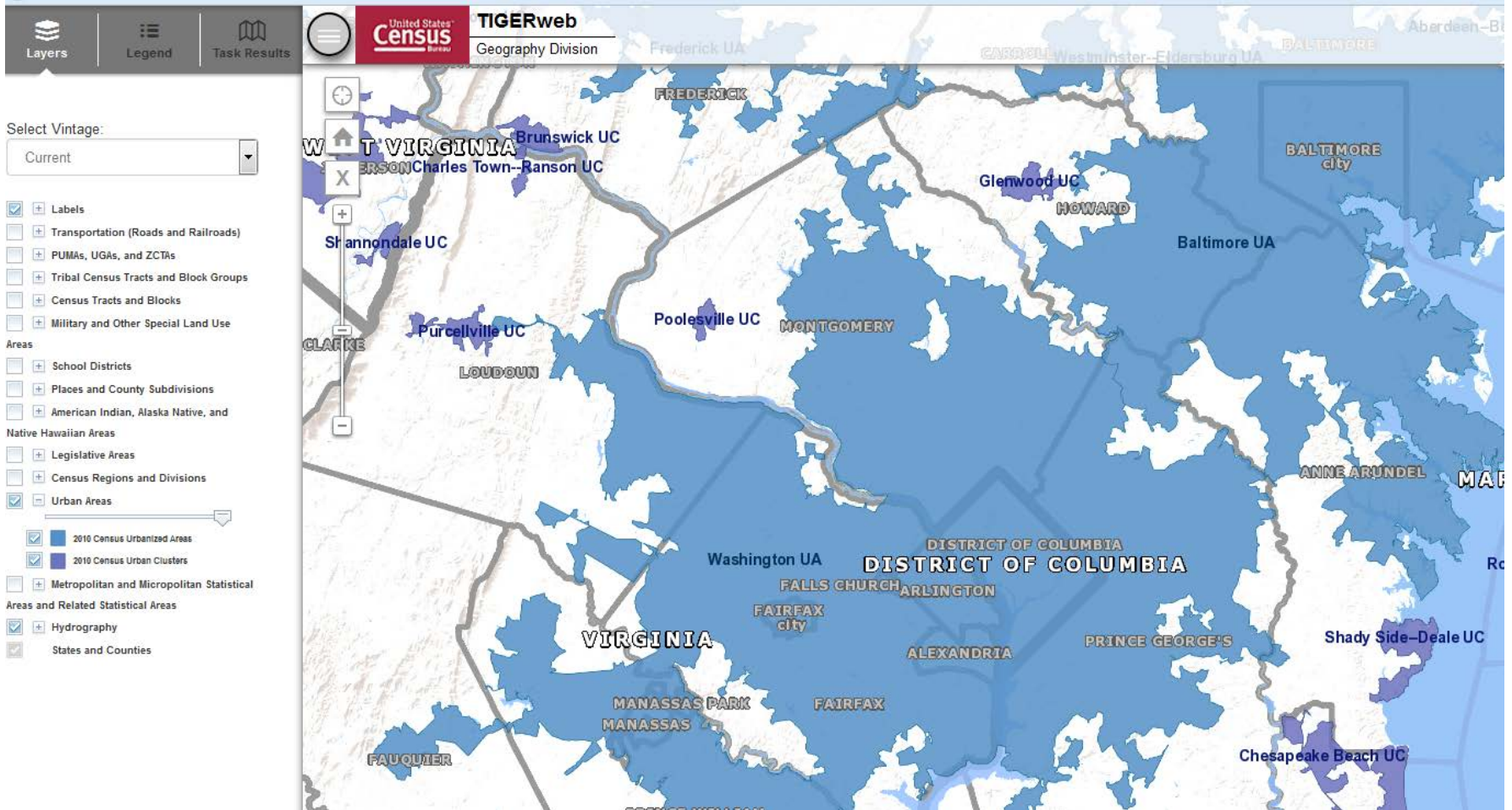
Which product should I use?

Product	Best For...	File Format	Type of Data	Level of Detail	Descriptive Attributes	Vintages Available
TIGER/Line Shapefiles	Most mapping projects--this is our <i>most comprehensive dataset</i> . Designed for use with GIS (geographic information systems).	Shapefiles (.shp) and database files (.dbf)	Boundaries, roads, address information, water features, and more	Full detail (not generalized)	Extensive	2006 - 2014, CD 113
TIGER Geodatabases	Useful for users needing national datasets or all major boundaries for by state. Designed for use in ArcGIS. Files are extremely large.	Geodatabase (.gdb)	Boundaries, roads, address information, water features, and more	Full detail (not generalized)	Limited	2013-2014
TIGER/Line with Selected Demographic and Economic Data	Data from selected attributes from the 2010 Census, 2006-2010 ACS 5-year estimates, 2007-2011 ACS 5-year estimates, 2008-2012 ACS 5-year estimates and County Business Patterns (CBP) for selected geographies. Designed for use with GIS.	Shapefiles (.shp) and Geodatabases	Boundaries, Population Counts, Housing Unit Counts, 2010 Census Demographic Profile 1 attributes, 2006-2010 ACS 5-year estimates data profiles, 2007-2011 ACS 5-year estimates data profiles, CBP data.	Full detail (not generalized)	Limited	2012 CBP, 2010, 2006-2010 ACS, 2007-2011 ACS, 2008-2012 ACS
Cartographic Boundary Shapefiles	Small scale (limited detail) mapping projects clipped to shoreline. Designed for thematic mapping using GIS.	Shapefiles (.shp)	Selected boundaries	Less detail (generalized)	Limited	2013, 2010, 2000, 1990
KML - Cartographic Boundary Files	Viewing data or creating maps using Google Earth, Google Maps, or other platforms that use KML.	KML (.kml)	Selected boundaries	Less detail (generalized)	Limited	2013

Interactive Map Gallery



TIGERweb



Migration Patterns

Census Flows Mapper

[View County Statistics](#) [View Data Table](#) [Save to PDF](#) [Export to Excel](#) [Initial Extent](#) [About This Map](#) [FAQ](#)

Search for a county or click on the map.

Providence County, Rhode Island

Choose a dataset.

- 2008-12 2006-10
 2007-11

Choose type of migration flow.

- Net Outbound Inbound

Choose a characteristic.

Total

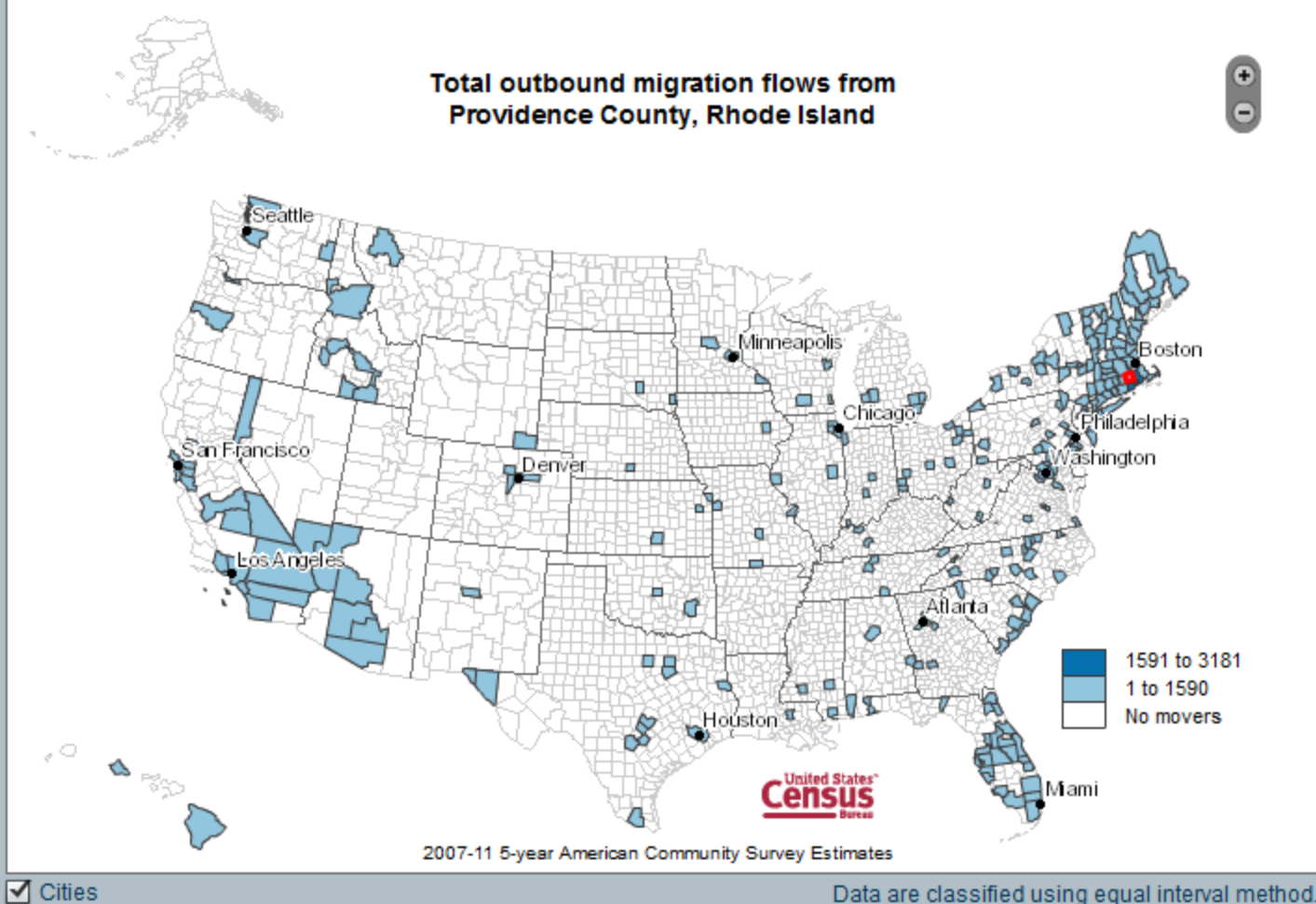
Choose colors.



Choose number of movers.



Range: 0 to 3,181



Version 1.2

Metro- and Micropolitan Population Viewer



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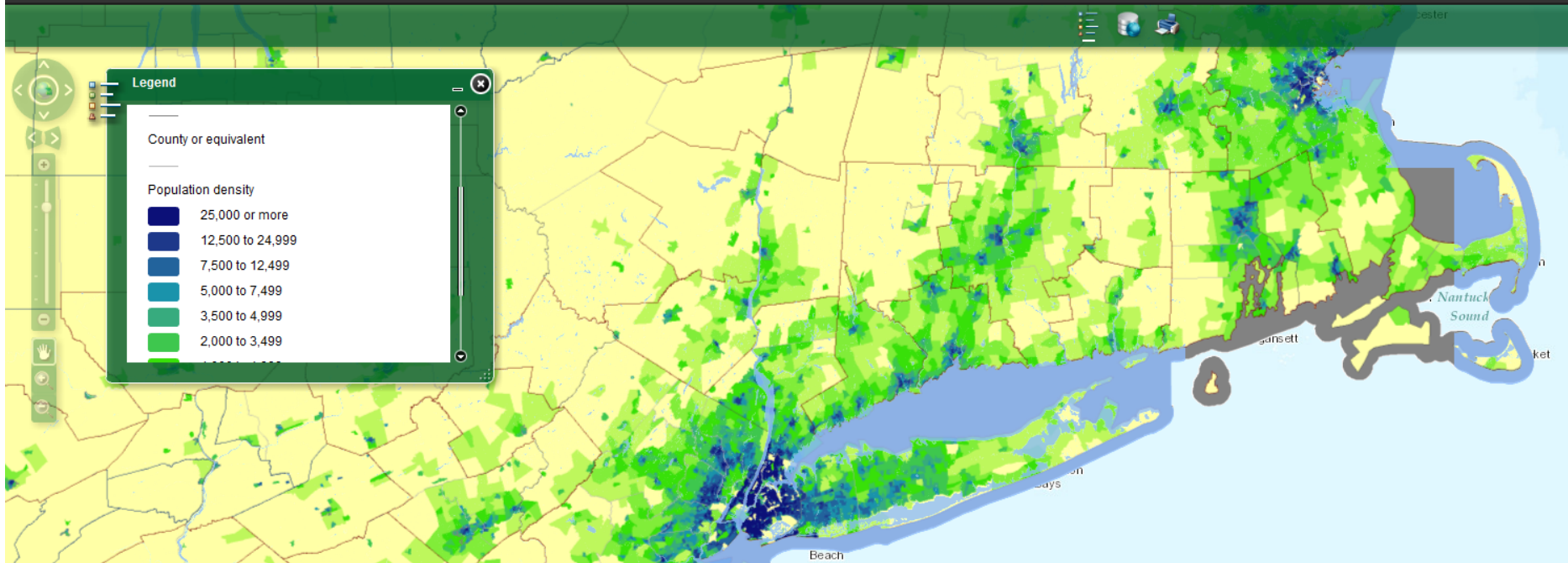
You are here: [Census.gov](#) [People and Households](#) [Metropolitan and Micropolitan Main Data](#) [c2010sr-01patterns](#) thematic maps

Metropolitan and Micropolitan

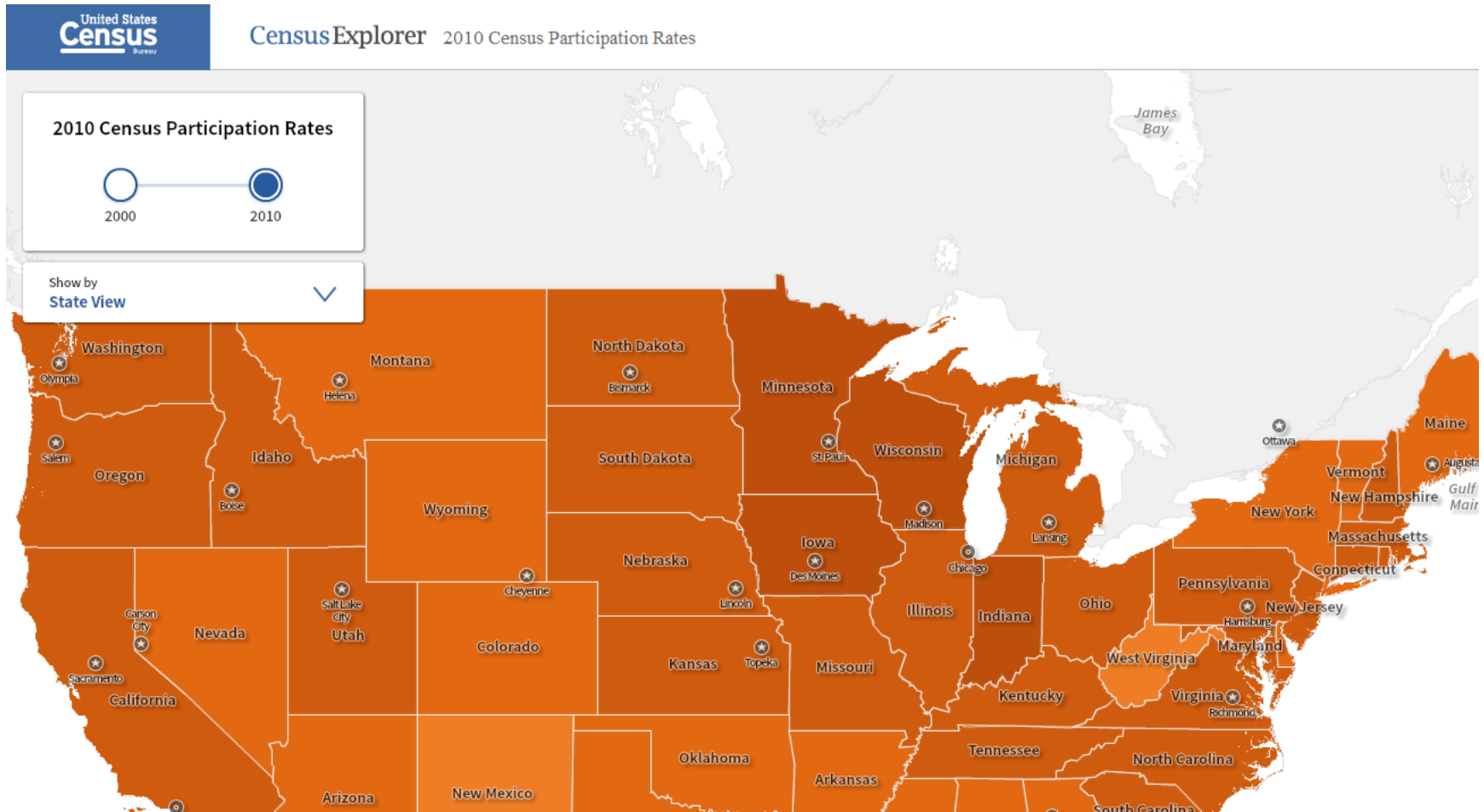
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Population Density by Census Tract: 2010

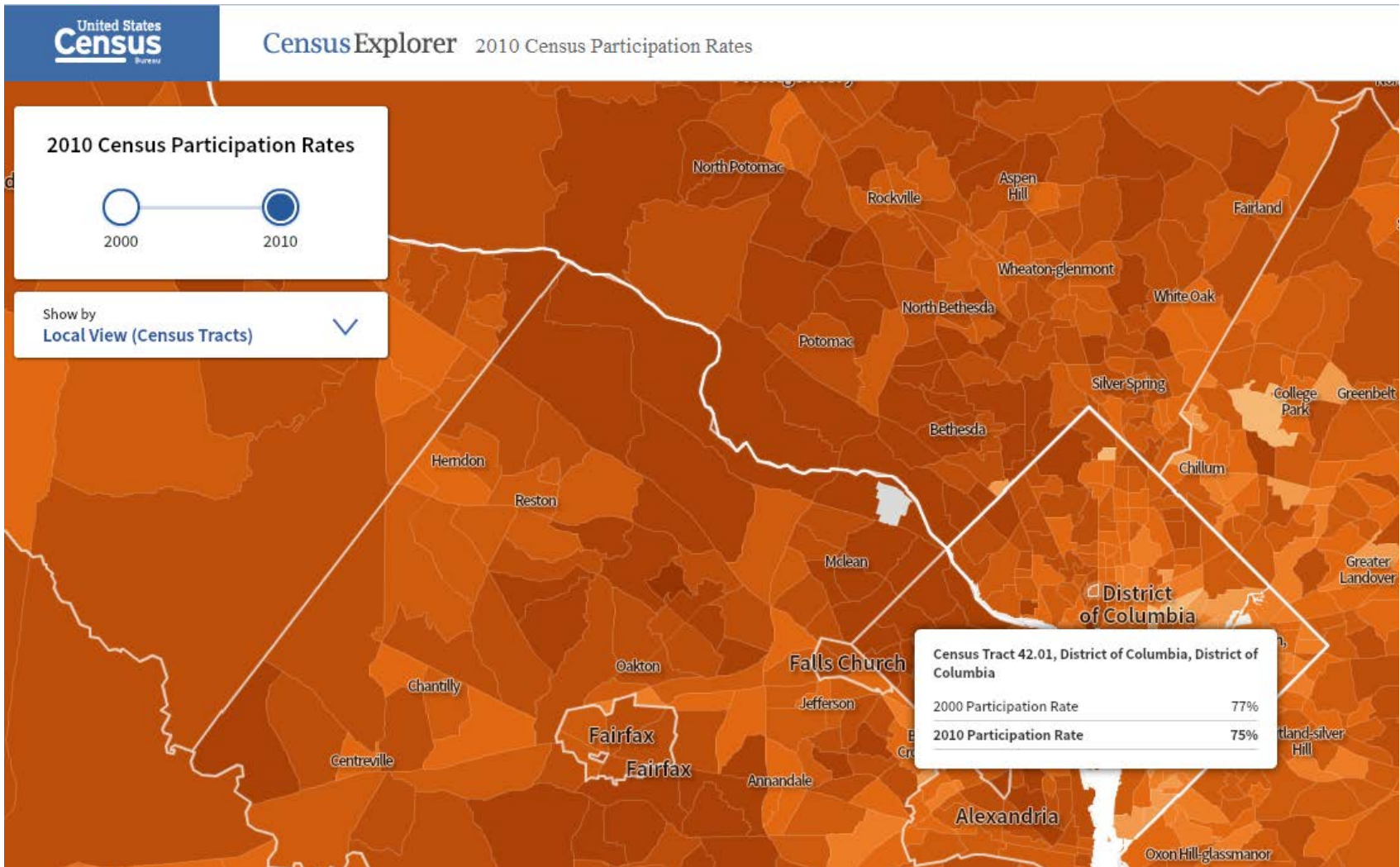
Total population Population Density by Census Tract: 2010



CensusExplorer – Participation Rates



CensusExplorer – Participation Rates



Do you consider these applications spatial analysis?

- Why or why not?
- Which audiences do they serve?
- Are they consistent with the mission of geographers/cartographers in your organization?

Base Tools for Online Mapping

HTML + CSS + Javascript

HTML – language of the web. Provides the static framework for a website.

CSS – Cascading Style Sheets. Used to style design elements of different markup languages.

JavaScript – makes webpage features dynamic. Makes web maps “come alive.”

Web Map Components

JavaScript Libraries

Leaflet –that focuses on rapid roll-out of interactive cartographic data. Support for popups, choropleth mapping, and dynamic layer control.

OpenLayers – Produce custom map applications with Google Maps or Bing Maps, more complex mapping functionality

D3 – JavaScript library to produce data driven graphics and charts

Integrated Development Environments

TileMill – Useful for producing custom basemaps. Uses CSS to style map elements.

What is missing?

Geoprocessing. True geoprocessing or spatial analysis generally not part of web maps.

Generally would require **ArcGIS Server.**

GeoServer (open-source) can be used but requires significant extensions that require substantial knowledge of custom application development and server management.

These skills are different from client-based content delivery relevant to online mapping.