

# Local Employment Dynamics

## Transportation Planning and Analysis of Workforce Population



Earlene Dowell

Longitudinal Employer-Household Dynamics Program

Center for Economic Studies

U.S. Census Bureau

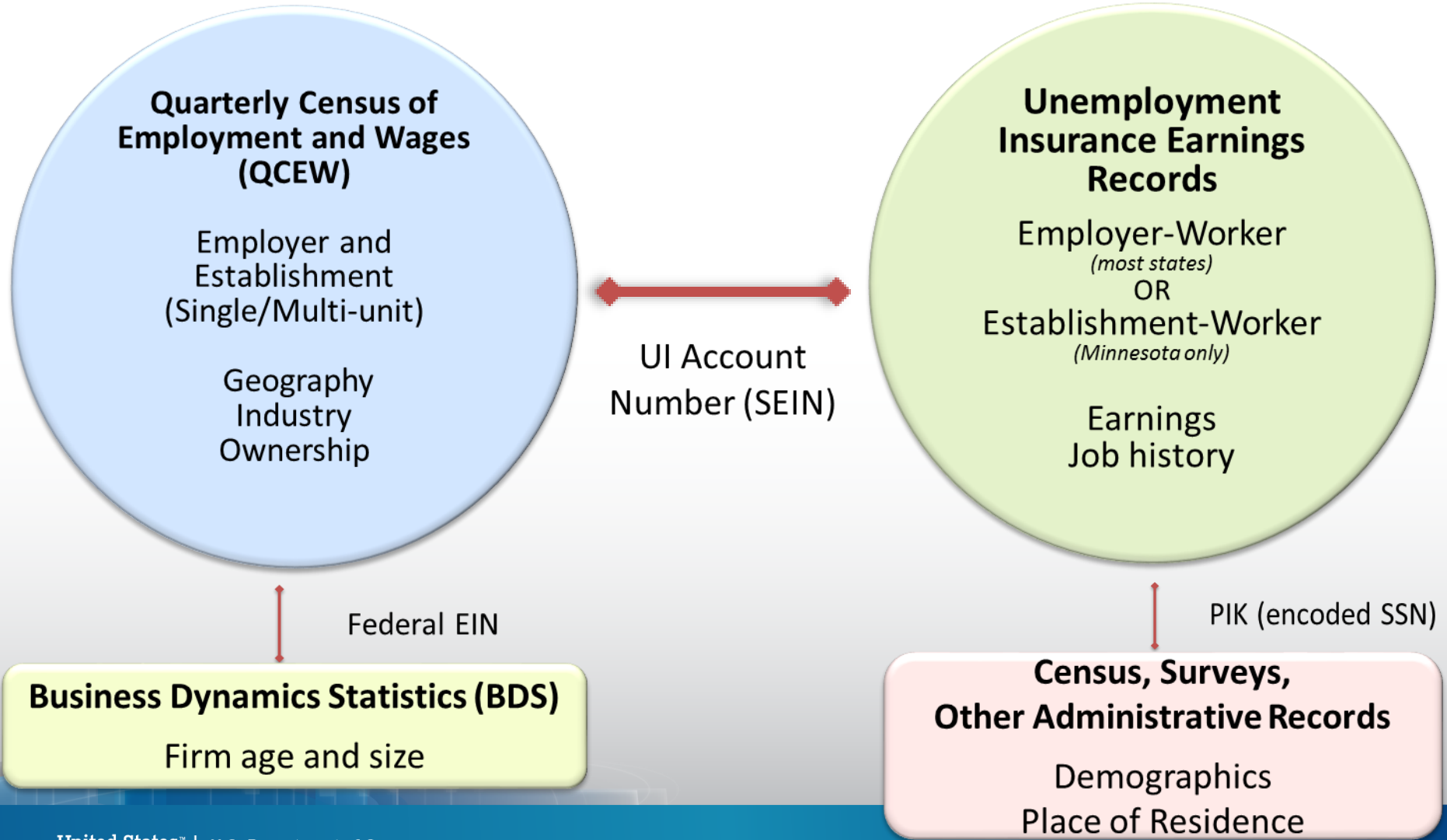
# Overview

- Basic summary of LED Partnership and LEHD program
- Hands-on demonstrations of data tools for accessing the QWI: LED Extraction Tool and QWI Explorer
- Hands-on demonstration of OnTheMap and the OnTheMap for Emergency Management Applications

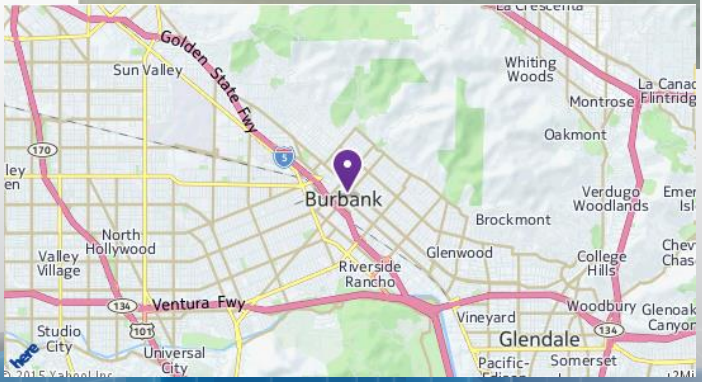
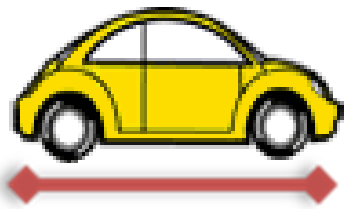
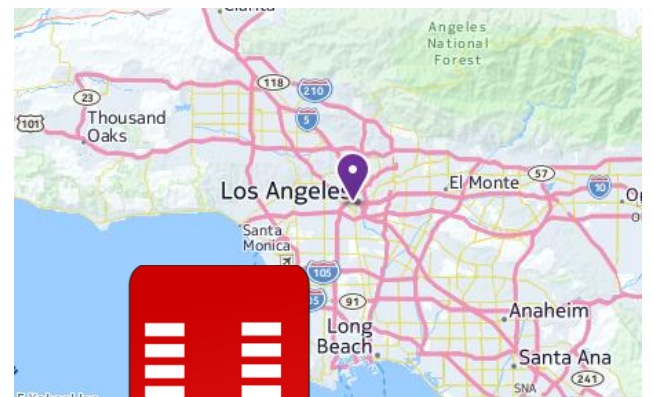
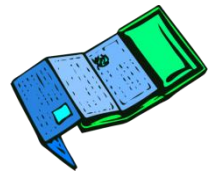
# LED vs. LEHD

- LED: Local Employment Dynamics
  - Partnership between Census and States
  - Begun in late 1990s with a few states – now 53 partner states/territories
  - States voluntarily submit quarterly data (UI Wage Records and QCEW reports)
- LEHD: Local Employer-Household Dynamics
  - Census processes and develops public use products
  - 3 data products
  - 4 web-based data tools

# LEHD Processing: Merging Data



# Here's a Story...

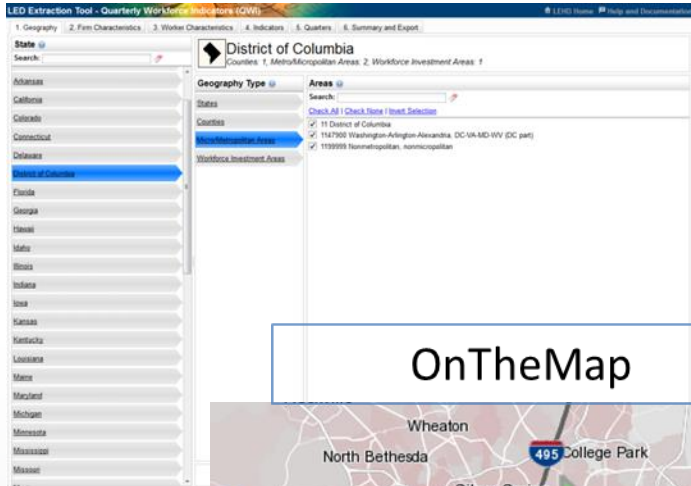


# Data Products

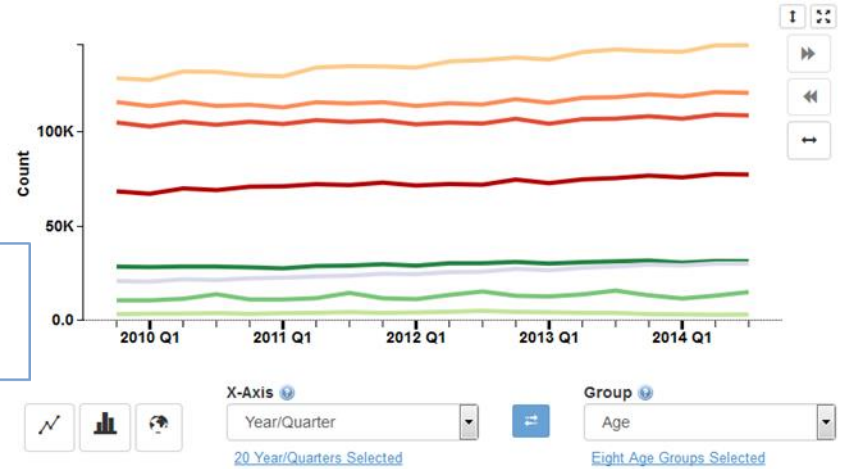
- **Quarterly Workforce Indicators (QWI)**
  - Employment, Job Creation, Job Destruction, Hires, Separations, Turnover, Earnings
  - By industry, county, and worker characteristics
- **LEHD Origin Destination Employment Statistics (LODES)**
  - Employment and Workplace-Residence Connections
  - Detailed geography + firm/worker characteristics
  - Broken in three categories
    - Origin Destination
    - Residential Area Characteristics
    - Worker Area Characteristics
- **Job-to-Job Flows (Beta)**
  - Job-to-Job Flows (J2J) is a new set of statistics on worker reallocation in the United States. It provides data on worker flows resulting from job change as well as hires and separation from and to persistent nonemployment spells. Also included in the new statistics are origin-destination data on workers changing jobs

# Data Tools

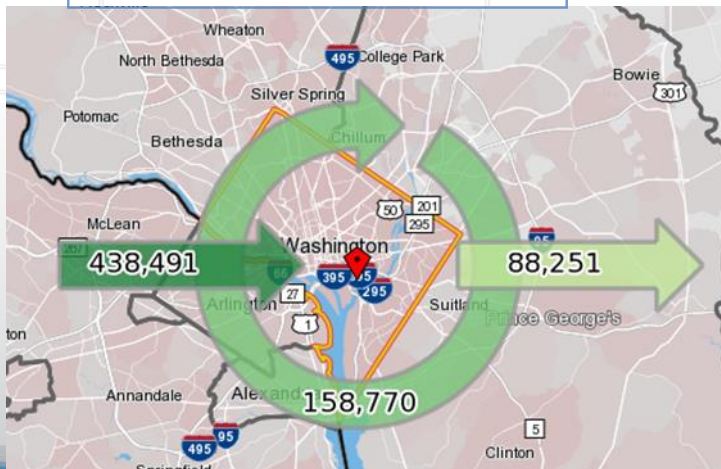
## LED Extraction Tool



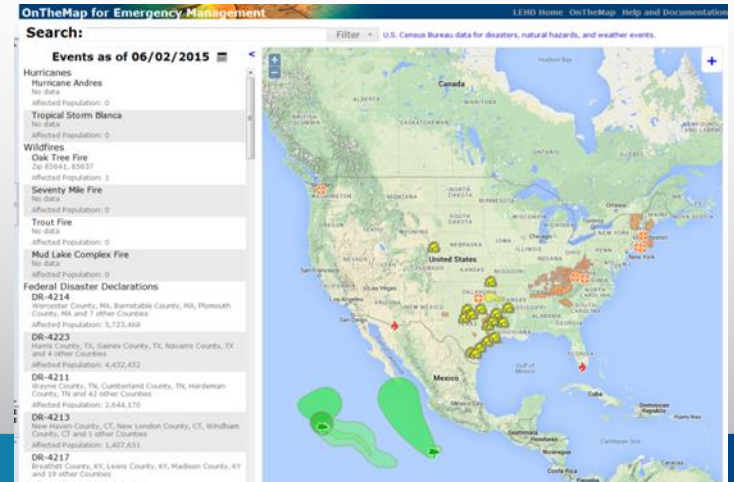
## QWI Explorer



## OnTheMap



## OnTheMap for Emergency Management



# Who Uses Our Data Tools?

- Transportation Planners
- Policy Makers
- City Planners
- State Planners
- Economists
- Emergency Management Professionals



# LED Extraction Tool

LED Extraction Tool - Quarterly Workforce Indicators (QWI) [LEHD Home](#) [Help and Documentation](#)

1. Geography | 2. Firm Characteristics | 3. Worker Characteristics | 4. Indicators | 5. Quarters | 6. Summary and Export

**State**  
 Search:

**Virginia**  
 Counties: 133, Metro/Micropolitan Areas: 16, Workforce Investment Areas: 15

**Geography Type**

States

Counties

Micro/Metropolitan Areas

Workforce Investment Areas

**Areas**

Search:

[Check All](#) | [Check None](#) | [Invert Selection](#)

- 51 Virginia
- 5113720 Big Stone Gap, VA
- 5113980 Blacksburg-Christiansburg-Radford, VA
- 5114140 Bluefield, WV-VA (VA part)
- 5116820 Charlottesville, VA
- 5119260 Danville, VA
- 5125500 Harrisonburg, VA
- 5128700 Kingsport-Bristol-Bristol, TN-VA (VA part)
- 5131340 Lynchburg, VA
- 5132300 Martinsville, VA
- 5140060 Richmond, VA
- 5140220 Roanoke, VA
- 5144420 Staunton-Waynesboro, VA
- 5147260 Virginia Beach-Norfolk-Newport News, VA-NC (VA part)
- 5147900 Washington-Arlington-Alexandria, DC-VA-MD-WV (VA part)
- 5149020 Winchester, VA-WV (VA part)
- 5199999 Nonmetropolitan, nonmicropolitan

Industry_label	owner	ownerco	sex	sex_label	agegr	age_r	race	race_label	ethn	ed	fir	fir	fir	year	quarter	Emp	HirA	
Agriculture, Fore	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	1241	163
Mining, Quarryin	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	766	73
Utilities	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	4659	304
Construction	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	66934	10890
Manufacturing	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	25292	2057
Wholesale Trade	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	31370	2909
Retail Trade	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	139812	17589
Transportation a	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	35576	5500
Information	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	43168	3271
Finance and Insu	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	42770	3301
Real Estate and F	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	20199	1979
Professional, Sci	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	268801	27605
Management of	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	28112	2068
Administrative a	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	84973	18367
Education Serv	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	109782	23951
Health Care and	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	119730	13799
Arts, Entertainm	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	18466	3275
Accommodation	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	109147	23250
Other Services (e	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	58124	7669
Public Administr	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	1	28467	1147
Agriculture, Fore	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	1359	488
Mining, Quarryin	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	801	86
Utilities	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	4622	327
Construction	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	69356	17091
Manufacturing	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	25568	2696
Wholesale Trade	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	31591	3773
Retail Trade	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	139767	26563
Transportation a	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	36812	5272
Information	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	42760	3862
Insu	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	43097	3900
and F	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	20369	2768
al, Sci	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	266549	29007
ent of	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	28025	2862
tive a	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	88733	28708
l Serv	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	125818	10711
and	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	121720	15606
tainm	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	19947	12515
lation	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	112586	34844
ices (e	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	59076	10544
minist	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	2	28855	2798
, Fore	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	3	1484	483
arryin	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	3	799	51
	A00	All (1-5)	0	All Sexes	A00	All A	All Race	A0	E0	All	0	All	0	All	2014	3	4829	236

LED Extraction Tool - Quarterly Workforce Indicators (QWI) [LEHD Home](#) [Help and Documentation](#)

1. Geography | 2. Firm Characteristics | 3. Worker Characteristics | 4. Indicators | 5. Quarters | 6. Summary and Export

**Estimated Results Size**

Number of Rows: 80  
 Size of CSV: Less than a Megabyte.  
 Size of ZIP: Less than a Megabyte.  
 Run Time: Less than a Minute.

[Submit Request](#) [Cancel Request](#)

Include Labels  
 including labels will dramatically increase processing time and file size.

Email results

**Request Progress**

Your data request is complete. Access the Current results to the right.

Submission → Waiting → Processed 100% → Finished

**Additional Information**

**Basic QWI Information**  
[QWI Data Schema](#) (5, 198k)  
[QWI 101](#) (5, 203k)

**Comprehensive QWI Information**  
[Detailed QWI Definitions](#) (5, 272k)  
[The LEHD Infrastructure Files and the Creation of the Quarterly Workforce Indicators document](#) (5, 768k)

**Data Notices/Updates**  
[QWI Data Vintage Notices](#) (5, 166k)  
[QWI Restructuring](#) (5, 100k)  
[Firm Age/Size Release Notice](#) (5, 95k)

For more information, go to [LED Extraction Tool Help and Documentation](#).

# QWI Explorer

QWI Explorer

LEHD Home Help and Documentation

State ⓘ  
 Virginia

Indicator ⓘ  
 HirA - Hires All: Counts (Accessions)

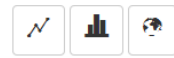
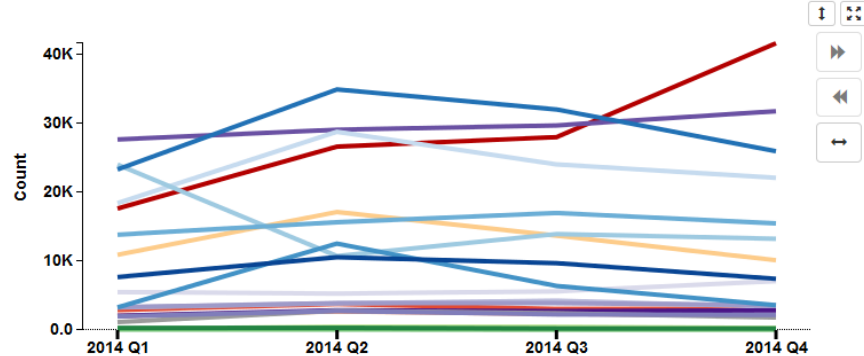
Get Data Share Get Report

Filters/Aggregations 🗑️ 🔍

Quarters: X-Axis  
 Metro/Micropolitan Areas: [Washington-Arlington-Alexandria, DC-VA-MD-WV \(VA part\)](#)  
 Industries: Group  
 Firm Ownership: [All Ownership](#)  
 Firm Age/Size: [None](#)  
 Worker Characteristics: [None](#)

QWI Status Flags ⓘ

🟡 Data significantly distorted, fuzzed value released.



X-Axis ⓘ  
 Year/Quarter

Group ⓘ  
 NAICS Sectors

Four Year/Quarters Selected 20 NAICS Sectors Selected

	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation and Warehousing	Information	Finance and Insurance	Real Estate and Rental and Leasing	Profes: Scienc: Tec: Ser:
2014 Q1	10,890	2,057	2,909	17,589	5,500	3,271	3,301	1,979	
2014 Q2	17,091	2,696	3,773	26,563	5,272	3,862	3,900	2,768	
2014 Q3	13,673	2,344	3,049	27,929	5,592	4,259	3,899	2,267	
2014 Q4	10,110	2,116	3,080	41,524	7,086	3,358	3,596	2,182	

# OnTheMap.ces.census.gov

Start Base Map Selection Save Load Feedback Previous Extent Hide Tabs

Welcome to OnTheMap!

Start an analysis by using one of the tools below (Search, Import Geography, or Load .OTM file). Hover over the Help icons located throughout the application to see Help tips for using specific functionality. Sections in the control panel can be collapsed or opened by clicking the section title.

[2012 and 2013 Data Now Available \(07/06/2015\)](#)

Search

Search

Search All Names

Import Geography

Import from KML  
Import from SHP  
Import from GPS

Load .OTM File

Click the "Load" button below to load a .OTM file.

Load

OnTheMap

1000 km  
500 mi

-112.27568, 39.82075

# Getting Started

The screenshot displays the OnTheMap application interface. The main map shows the Washington-Arlington-Alexandria, DC-VA-MD-WV area. A search panel on the left contains the following sections:

- Start | Base Map | Selection
- Save | Load | Feedback | Previous Extent | Hide Tabs
- Welcome to OnTheMap!  
Start an analysis by using one of the tools below (Search, Import Geography, or Load .OTM file).  
Hover over the Help icons located throughout the application to see Help tips for using specific functionality. Sections in the control panel can be collapsed or opened by clicking the section title.
- 2012 and 2013 Data Now Available (07/06/2015)
- Search  
washinton DC [Search]  
Search All Names  
No results found. Showing Results for: **washington dc**
  - States  
No results found.
  - Counties  
No results found.
  - Places (Cities, CDPs, etc.)  
**Washington city, DC**
  - ZIP Codes (ZCTA)  
No results found.
  - Metropolitan/Micropolitan Areas (CBSA)  
**Washington-Arlington-Alexandria, DC-VA-MD-WV**
  - Workforce Investment Areas (WIA)  
No results found.
  - County Subdivisions  
**Washington city (District of Columbia, DC)**
  - 114th Congressional Districts  
No results found.
  - Census Block Groups  
No results found.
  - Census Tracts  
No results found.
  - Unified/Elementary Schools Districts  
No results found.
  - Secondary School Districts  
No results found.
  - State Legislative Districts (Upper)  
No results found.
  - State Legislative Districts (Lower)  
No results found.
  - Alaska Native Regional Corp. (ANRC)  
No results found.
  - Tribal Lands  
No results found.
  - Tribal Subdivisions

The map popup for the selected area displays the following information:

- Washington-Arlington-Alexandria, DC-VA-MD-WV
- from Metropolitan/Micropolitan Areas (CBSA)
- Selection Area: 6,680,397 Sq. Mi
- Census Blocks: 94,603
- [Perform Analysis on Selection Area](#)
- [Change Selection Area](#)
- [Add Advanced Selection](#)

The map includes a scale bar (0 to 50 miles), a north arrow, and coordinates (-79.61941, 39.39430).

# Analysis Settings

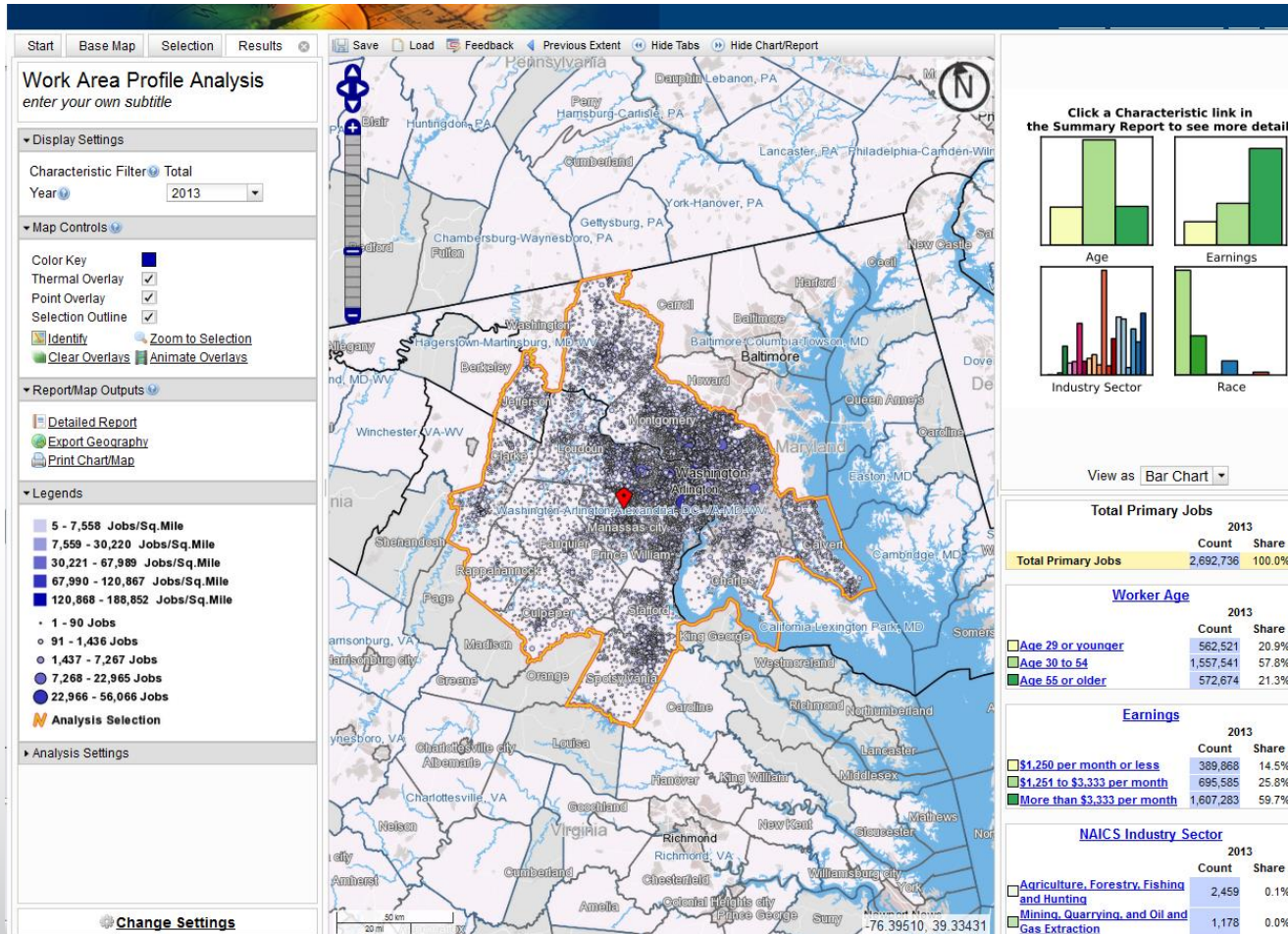
## Analysis Settings

### Area Profile Analysis in 2013 by Primary Jobs

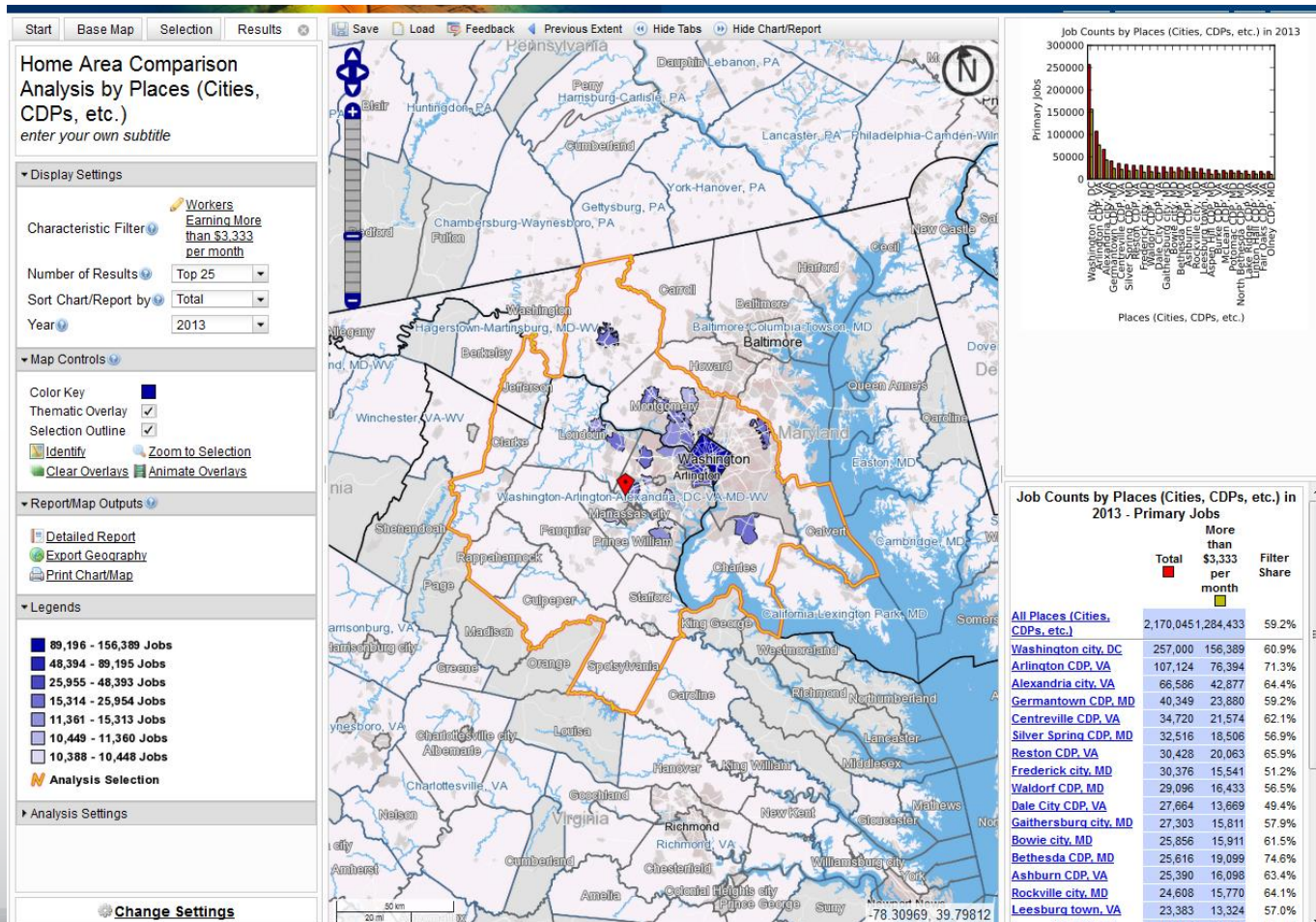
<b>Home/Work Area</b> Determines whether the selection area is analyzed on where workers live ("Home") or where workers are employed ("Work"). <input type="radio"/> Home <input checked="" type="radio"/> Work	<b>Analysis Type</b> Determines the type of results that will be generated for the selected area. <input checked="" type="radio"/> <b>Area Profile</b> Labor Market Segment: <input type="text" value="All Workers"/> <input type="radio"/> <b>Area Comparison</b> Areas to Compare: <input type="text" value="Places (Cities, CDPs, etc.)"/> Labor Market Segment: <input type="text" value="All Workers"/> <input type="radio"/> <b>Distance/Direction</b> <input type="radio"/> <b>Destination</b> Destination Type: <input type="text" value="Places (Cities, CDPs, etc.)"/> <input type="radio"/> <b>Inflow/Outflow</b> Note: Home/Work choice does not affect results	<b>Year</b> Determines the year(s) of data that will be processed in the analysis. <input checked="" type="checkbox"/> 2013 <input type="checkbox"/> 2012 <input type="checkbox"/> 2011 <input type="checkbox"/> 2010 <input type="checkbox"/> 2009 <input type="checkbox"/> 2008 <input type="checkbox"/> 2007 <input type="checkbox"/> 2006 <input type="checkbox"/> 2005 <input type="checkbox"/> 2004 <input type="checkbox"/> 2003 <input type="checkbox"/> 2002	<b>Job Type</b> Determines the scope of jobs that will be processed in the analysis. <input type="radio"/> All Jobs <input checked="" type="radio"/> Primary Jobs <input type="radio"/> All Private Jobs <input type="radio"/> Private Primary Jobs
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Cancel Go!

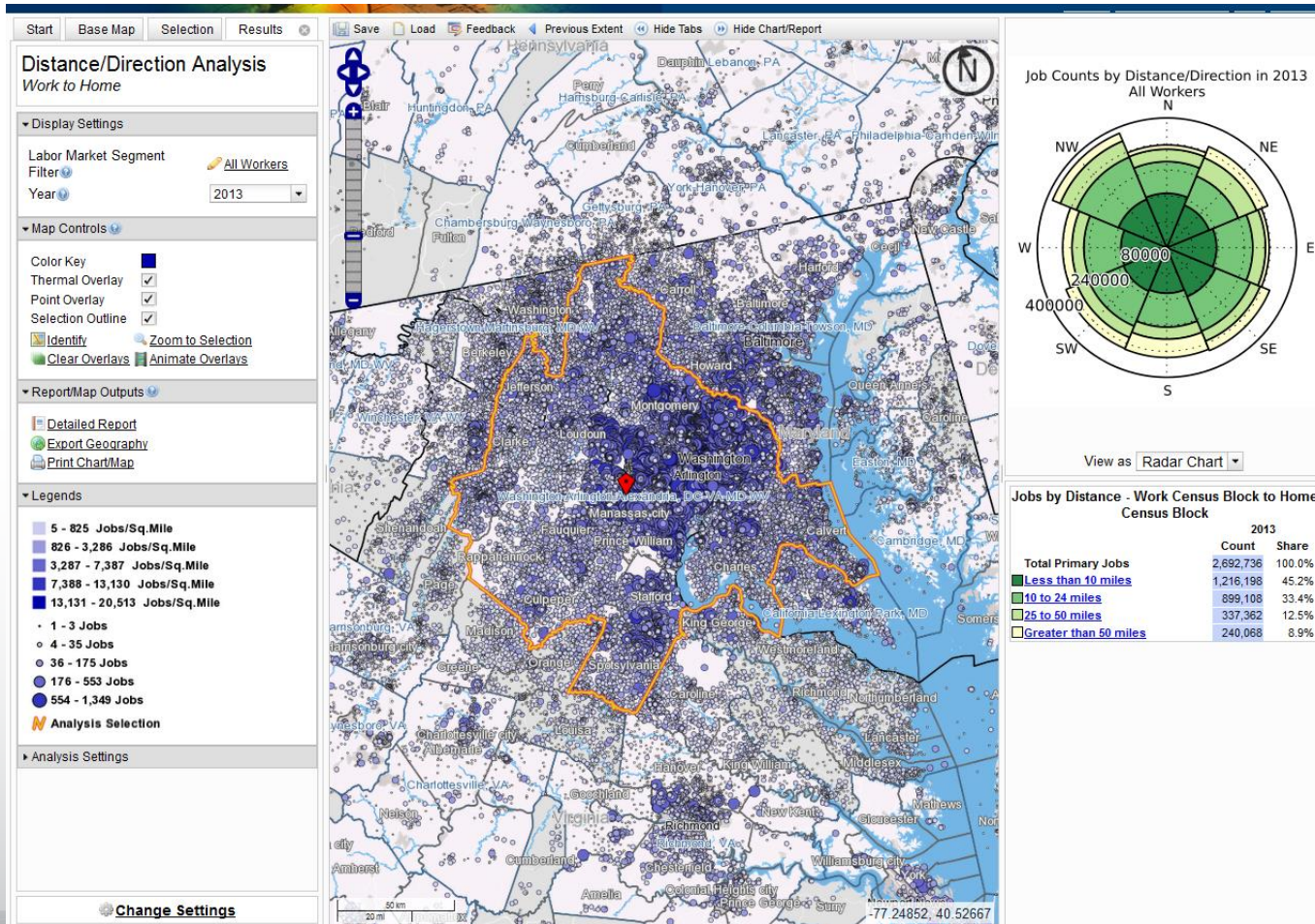
# Results



# Home Area Comparison

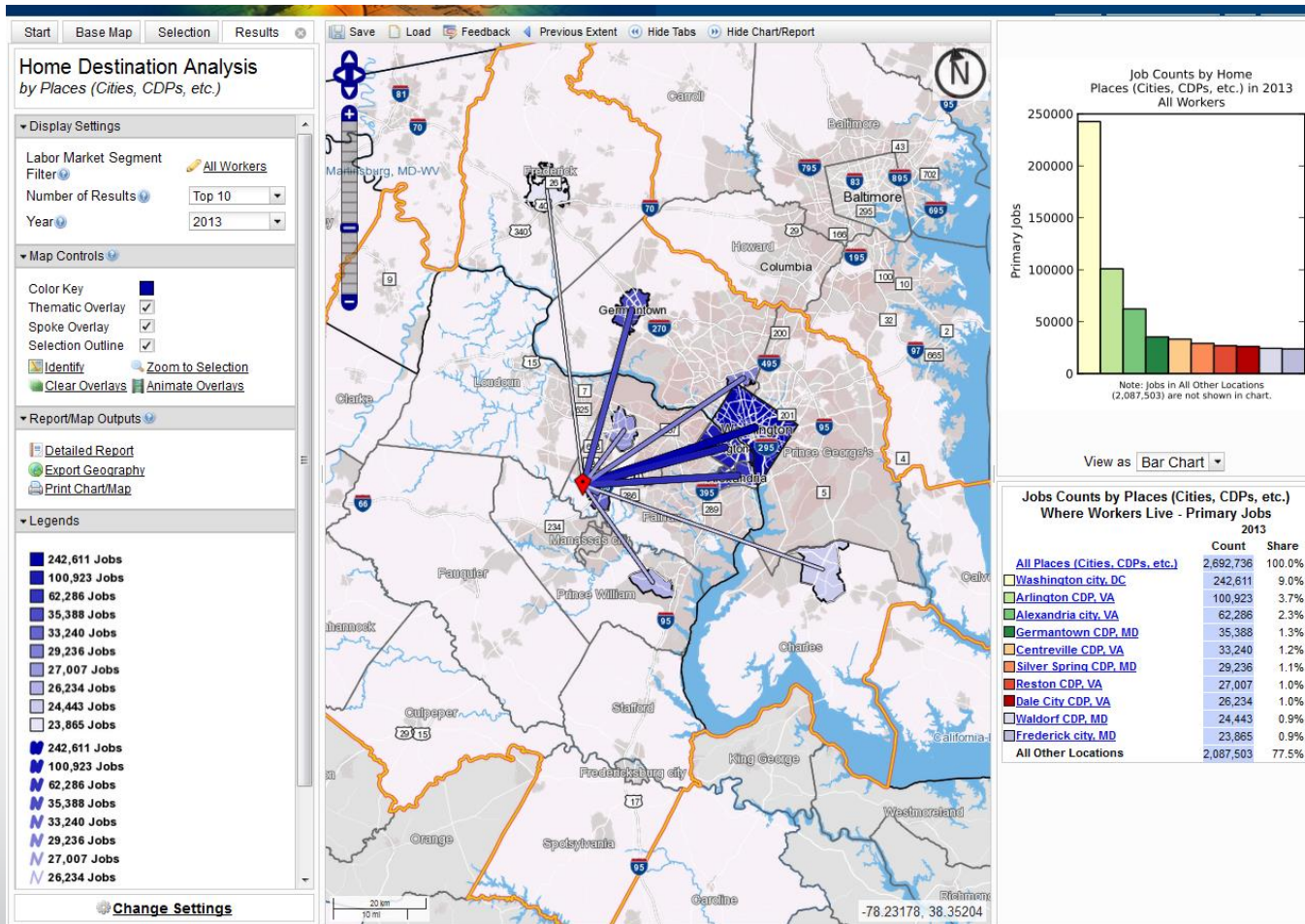


# Distance/Direction

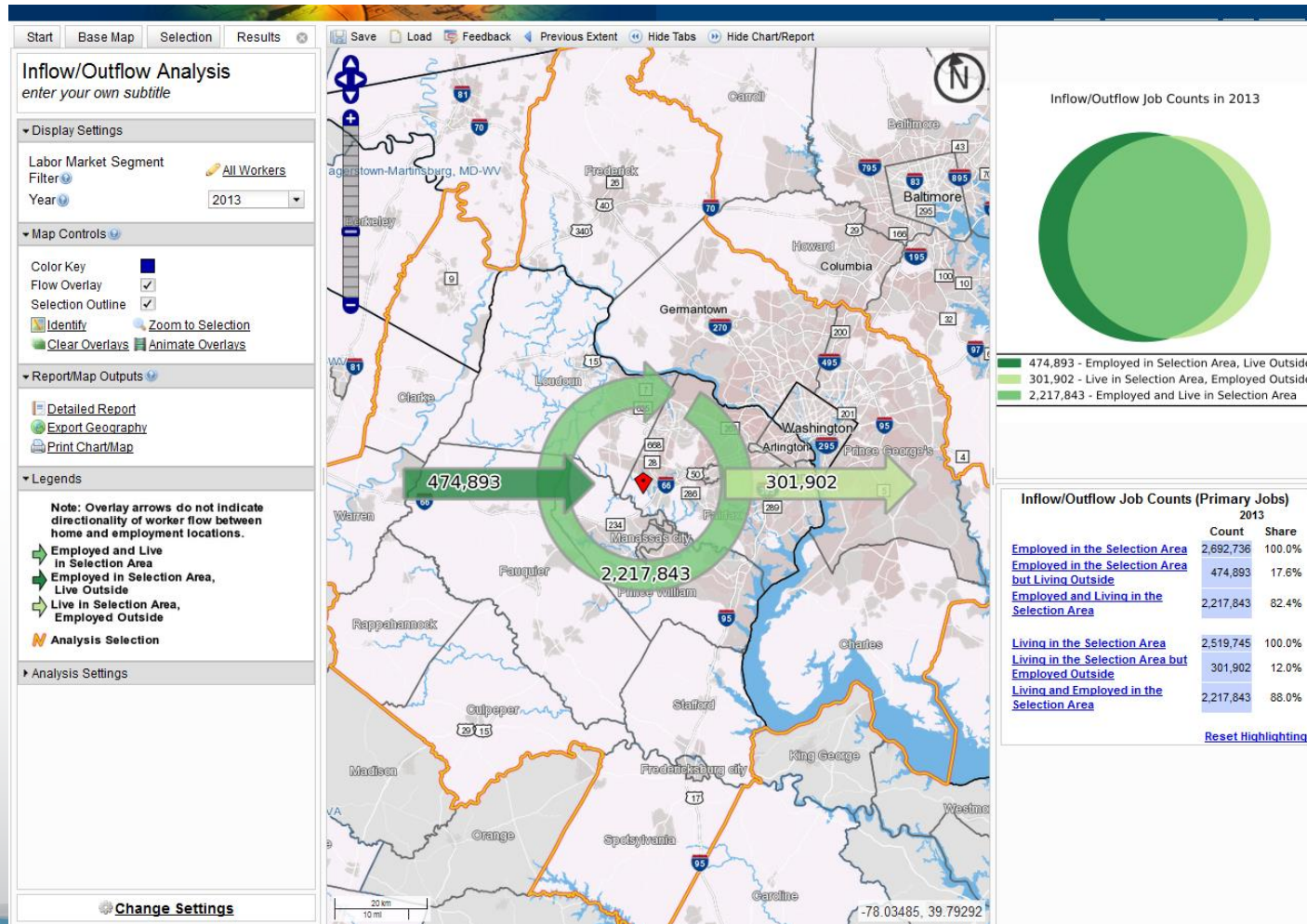




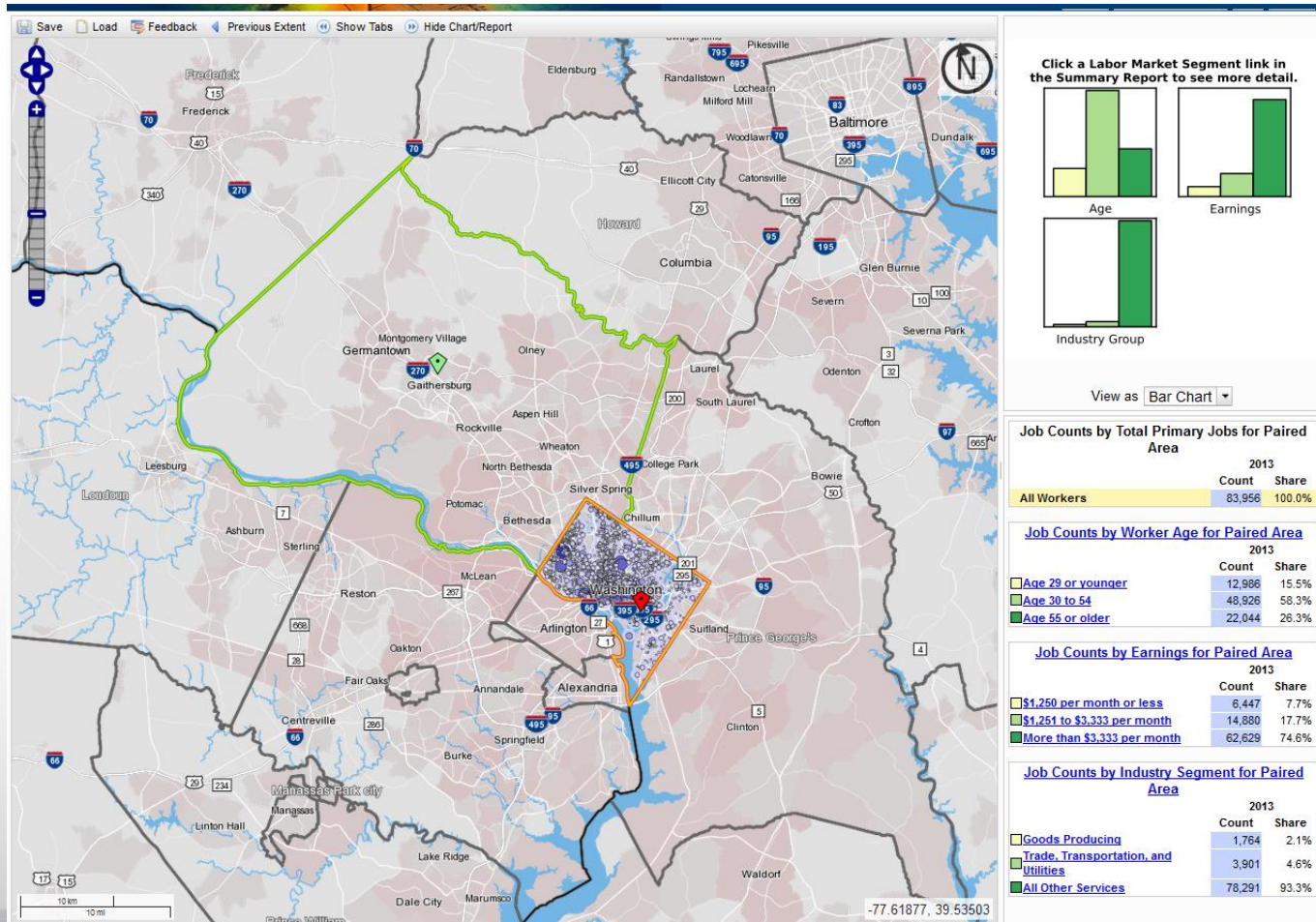
# Destination



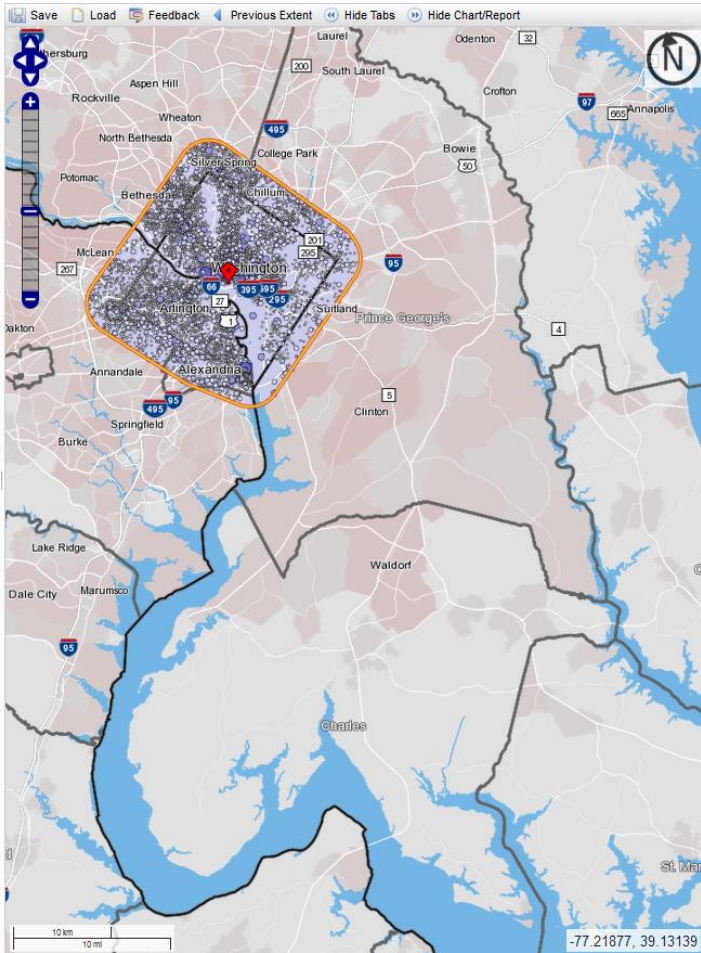
# Inflow/Outflow



# Paired Area Analysis



# Selection Tab



## Total Primary Jobs

	2013	
	Count	Share
Total Primary Jobs	984,915	100.0%

## Worker Age

	2013	
	Count	Share
Age 29 or younger	199,031	20.2%
Age 30 to 54	574,406	58.3%
Age 55 or older	211,478	21.5%

## Earnings

	2013	
	Count	Share
\$1,250 per month or less	107,311	10.9%
\$1,251 to \$3,333 per month	215,749	21.9%
More than \$3,333 per month	661,855	67.2%

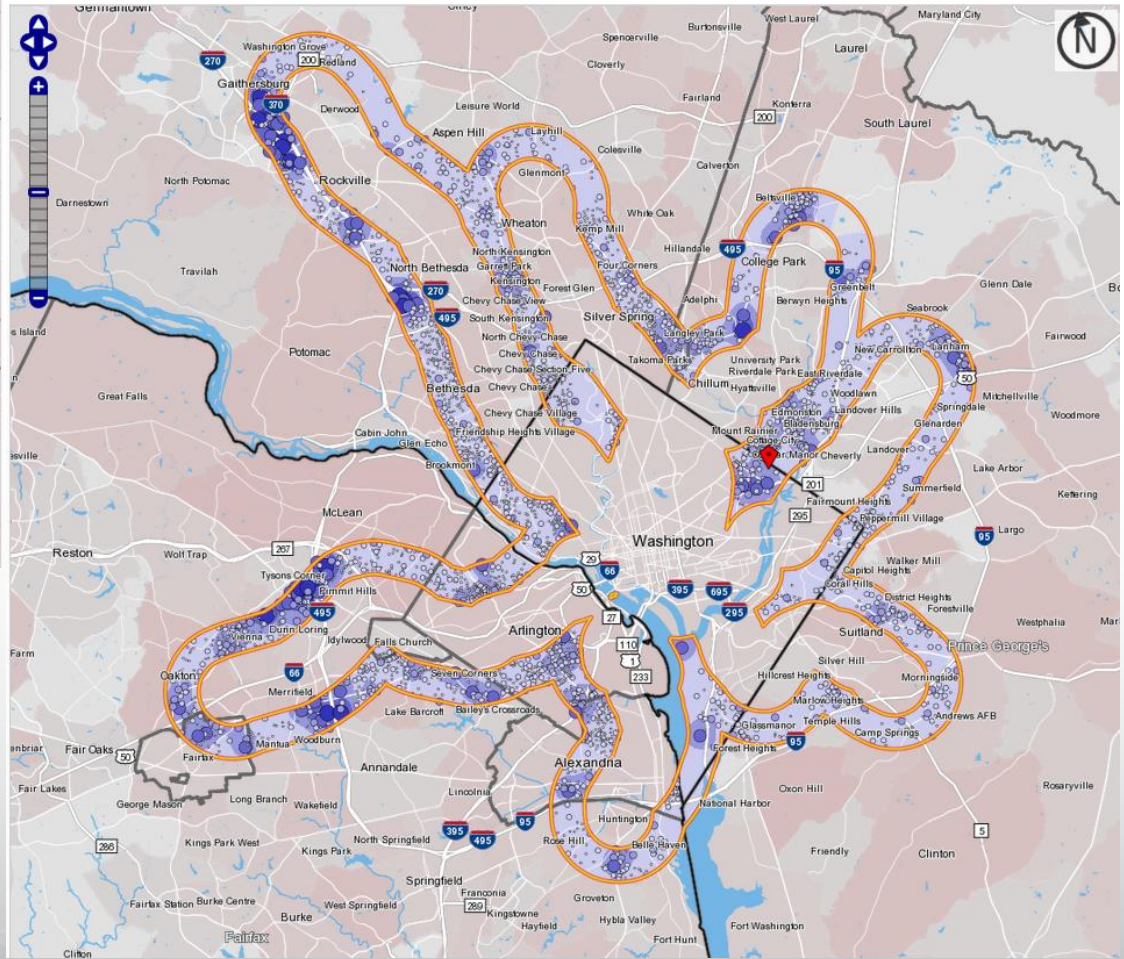
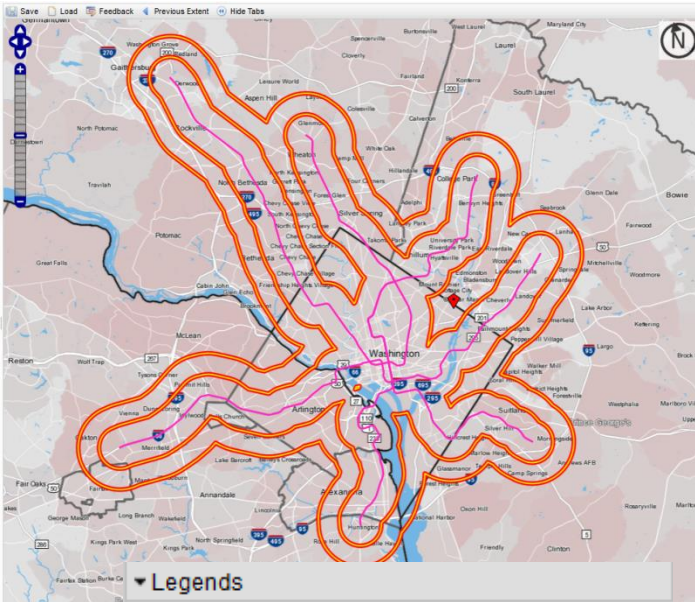
## Worker Race

	2013	
	Count	Share
White Alone	566,855	57.6%
Black or African American Alone	309,839	31.5%
American Indian or Alaska Native Alone	4,840	0.5%
Asian Alone	81,724	8.3%
Native Hawaiian or Other Pacific Islander Alone	1,375	0.1%
Two or More Race Groups	20,282	2.1%

## NAICS Industry Sector

	2013	
	Count	Share
Agriculture, Forestry, Fishing and Hunting	110	0.0%
Mining, Quarrying, and Oil and Gas Extraction	177	0.0%
Utilities	3,297	0.3%
Construction	23,588	2.4%
Manufacturing	8,388	0.9%
Wholesale Trade	12,072	1.2%
Retail Trade	49,983	5.1%
Transportation and Warehousing	17,382	1.8%
Information	28,106	2.9%
Finance and Insurance	33,296	3.4%
Real Estate and Rental and Leasing	19,946	2.0%
Professional, Scientific, and Technical Services	187,971	19.1%
Management of Companies and Enterprises	7,311	0.7%
Administration & Support, Waste Management and Remediation	65,612	6.7%
Educational Services	77,885	7.9%
Health Care and Social Assistance	95,810	9.7%
Arts, Entertainment, and Recreation	11,607	1.2%
Accommodation and Food Services	83,257	8.5%
Other Services (excluding Public Administration)	91,949	9.3%
Public Administration	167,168	17.0%

# Importing Shapefiles



- 5 - 1,220 Jobs/Sq.Mile
- 1,221 - 4,865 Jobs/Sq.Mile
- 4,866 - 10,942 Jobs/Sq.Mile
- 10,943 - 19,448 Jobs/Sq.Mile
- 19,449 - 30,386 Jobs/Sq.Mile
- 1 - 8 Jobs
- 9 - 128 Jobs
- 129 - 648 Jobs
- 649 - 2,048 Jobs
- 2,049 - 5,000 Jobs
- N Analysis Selection**

# OnTheMap for Emergency Management



Hurricanes, Floods,  
Winter Storms



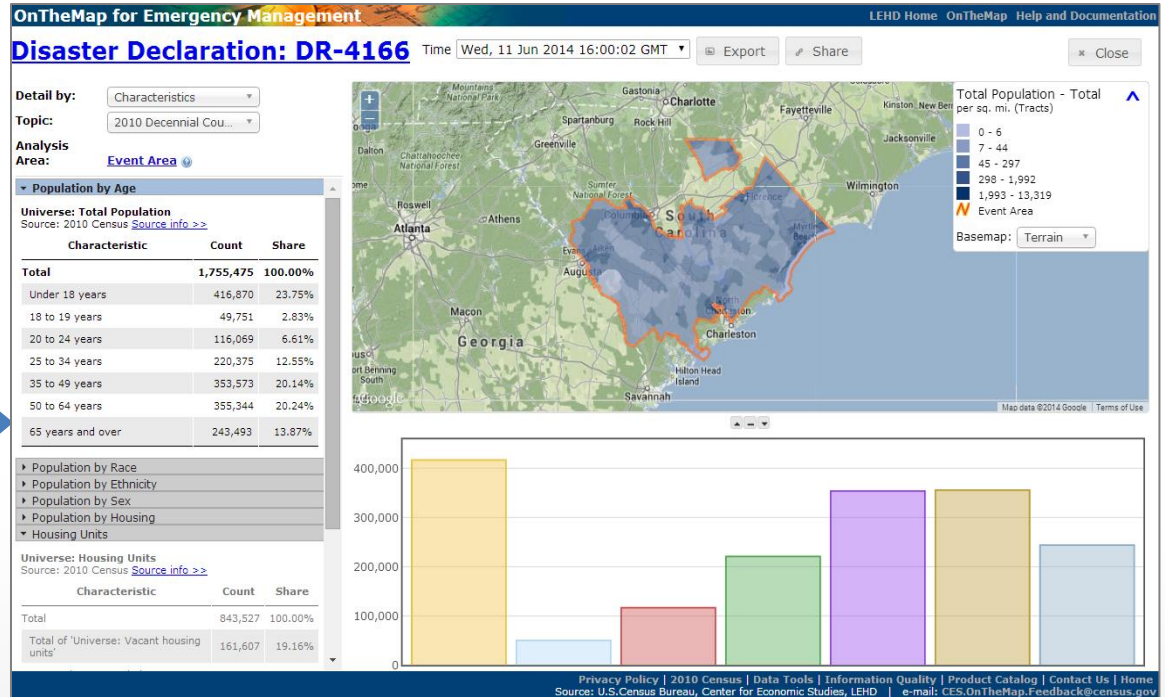
Disaster Areas



Wildfires



Demographic &  
Economic Data



## New Public Data Service for Emergency Preparedness & Response

- Comprehensive Reports
- Real-time Data Updates
- Easy-to-use & Interoperable
- Historical Event Archive
- Flexible Analyses & Visualizations



# <http://onthemap.ces.census.gov/em/>

**OnTheMap for Emergency Management** LEHD Home OnTheMap Help and Documentation

**Search:**  Filter U.S. Census Bureau data for disasters, natural hazards, and weather events.

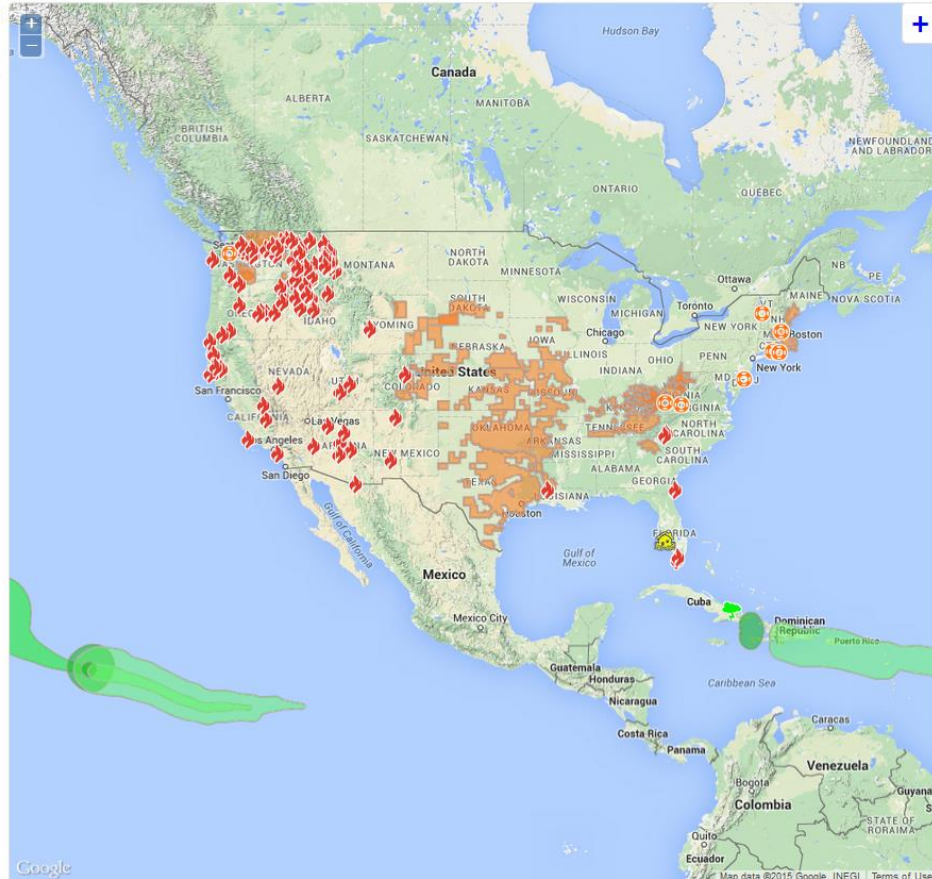
**Events as of 08/31/2015**

**Hurricanes**

- Remnants of Erika**  
Florida, Georgia, Alabama and 1 other States  
Affected Population: 3,725,789
- Hurricane Fred**  
No data  
Affected Population: 0
- Hurricane Jimena**  
No data  
Affected Population: 0

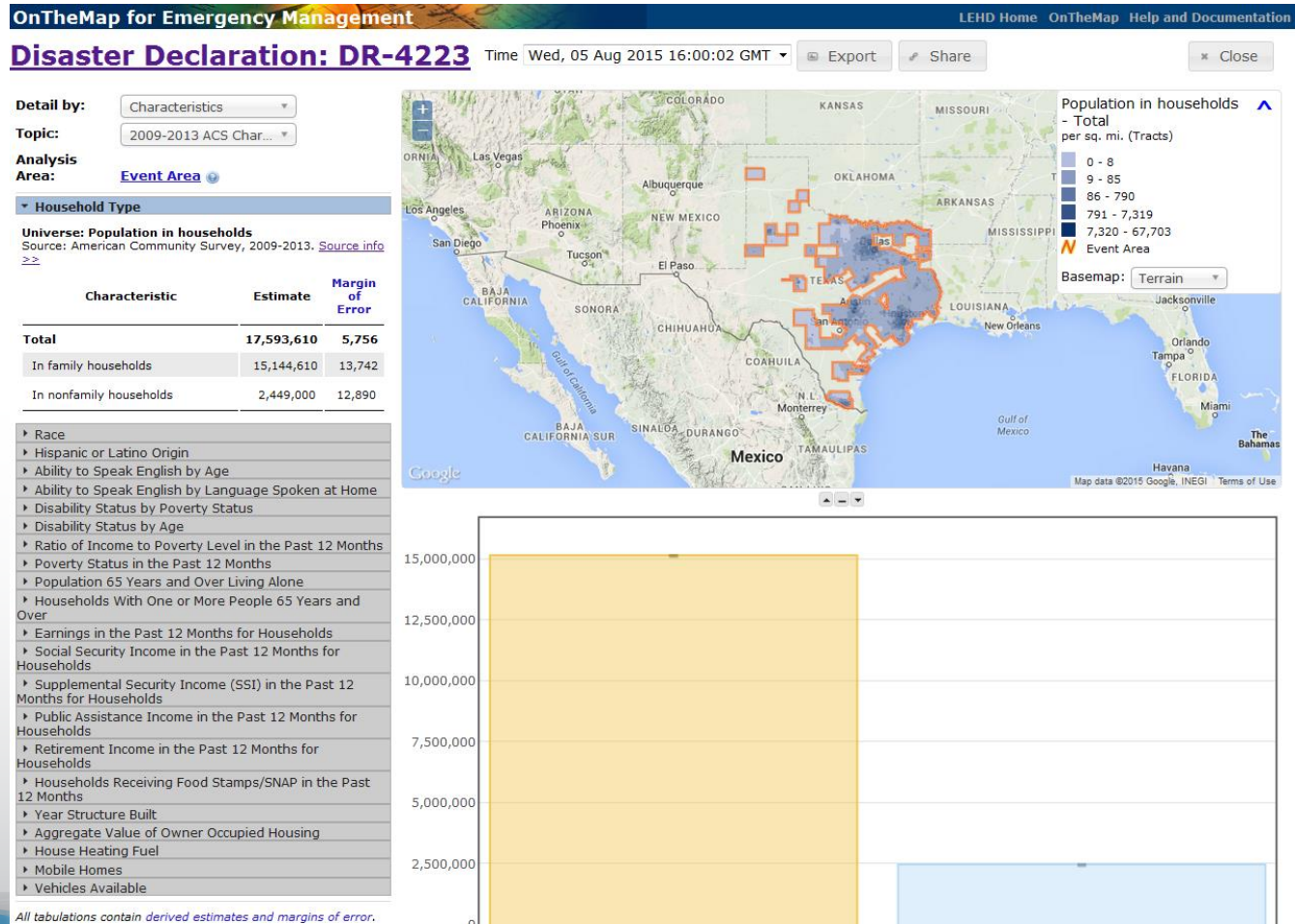
**Wildfires**

- Chelan Complex Fire**  
Okanogan County, WA, Douglas County, WA, Chelan County, WA  
Affected Population: 1,503
- County Line 2 Complex Fire**  
Jefferson County, OR, Wasco County, OR  
Affected Population: 1,146
- North Star Fire**  
Okanogan County, WA, Ferry County, WA  
Affected Population: 403
- Ojo Blanco Fire**  
Zip 85641  
Affected Population: 336
- Sockeye Fire**  
Zip 99688  
Affected Population: 292
- Marble Valley Fire**  
Zip 99114, 99101  
Affected Population: 269
- Canyon Creek Complex Fire**  
Zip 97820, 97869, 97845  
Affected Population: 228
- Nulato Fire**  
Zip 99765  
Affected Population: 222
- Okanogan Complex Fire**  
Zip 98858, 98862  
Affected Population: 197
- Carpenter Road Fire**  
99129, 99173, 99137 and 1 other ZIP Codes (ZCTA)  
Affected Population: 139
- Card Street Fire**  
Zip 99672  
Affected Population: 138
- Clatskanie Municipal Metropolitan North Complex Fire**



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# Disaster Declaration: DR-4223





# *Thank You*

- Local Employment Dynamics
  - [lehd.ces.census.gov](http://lehd.ces.census.gov)
- Contact
  - [Earlene.KP.Dowell@census.gov](mailto:Earlene.KP.Dowell@census.gov)
- Tools
  - [QWIExplorer.ces.census.gov](http://QWIExplorer.ces.census.gov)
  - [LEDExtract.ces.census.gov](http://LEDExtract.ces.census.gov)
  - [OnTheMap.ces.census.gov](http://OnTheMap.ces.census.gov)
  - [OnTheMap.ces.census.gov/em.html](http://OnTheMap.ces.census.gov/em.html)