

# OnTheMap for Emergency Management



Earlene Dowell

LEHD Program

Center for Economic Studies

U.S. Census Bureau

# Overview

- LEHD vs LED
- Data Sources
- Need for Social and Economic Data during Emergencies
- Overview of Application
- Application Uses
- New Features
- Live Demo
- Questions and Answers

# 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

# OnTheMap for Emergency Management



Hurricanes, Floods,  
Winter Storms



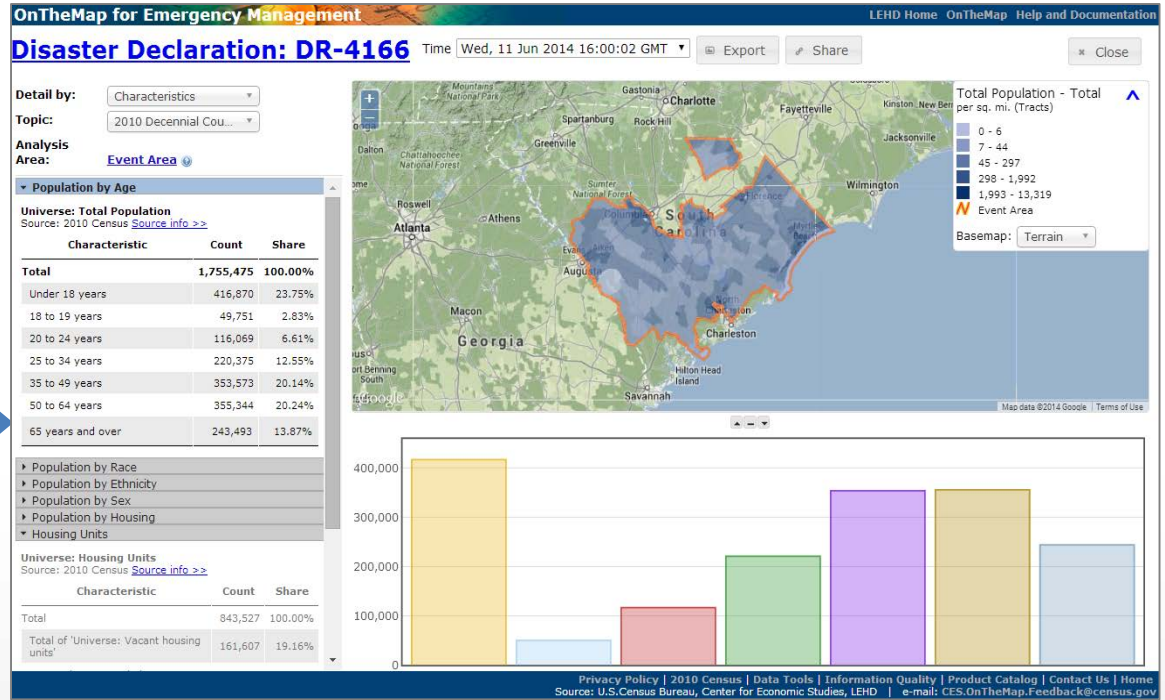
Disaster Areas



Wildfires

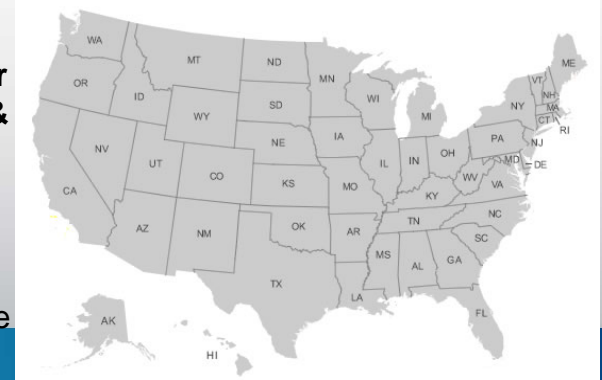


Demographic &  
Economic Data



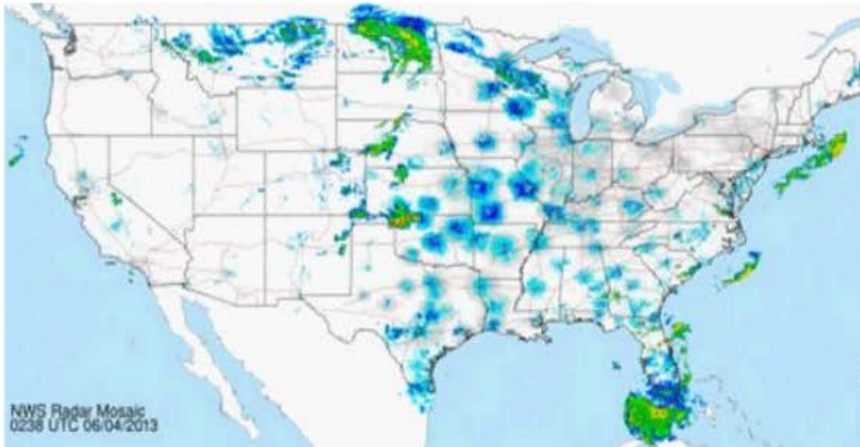
## New Public Data Service for Emergency Preparedness & Response

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

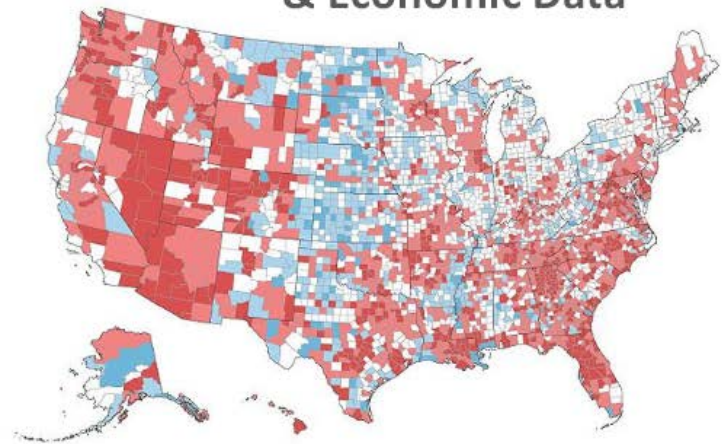


# Data Integration

Real-time Weather & Disaster Data

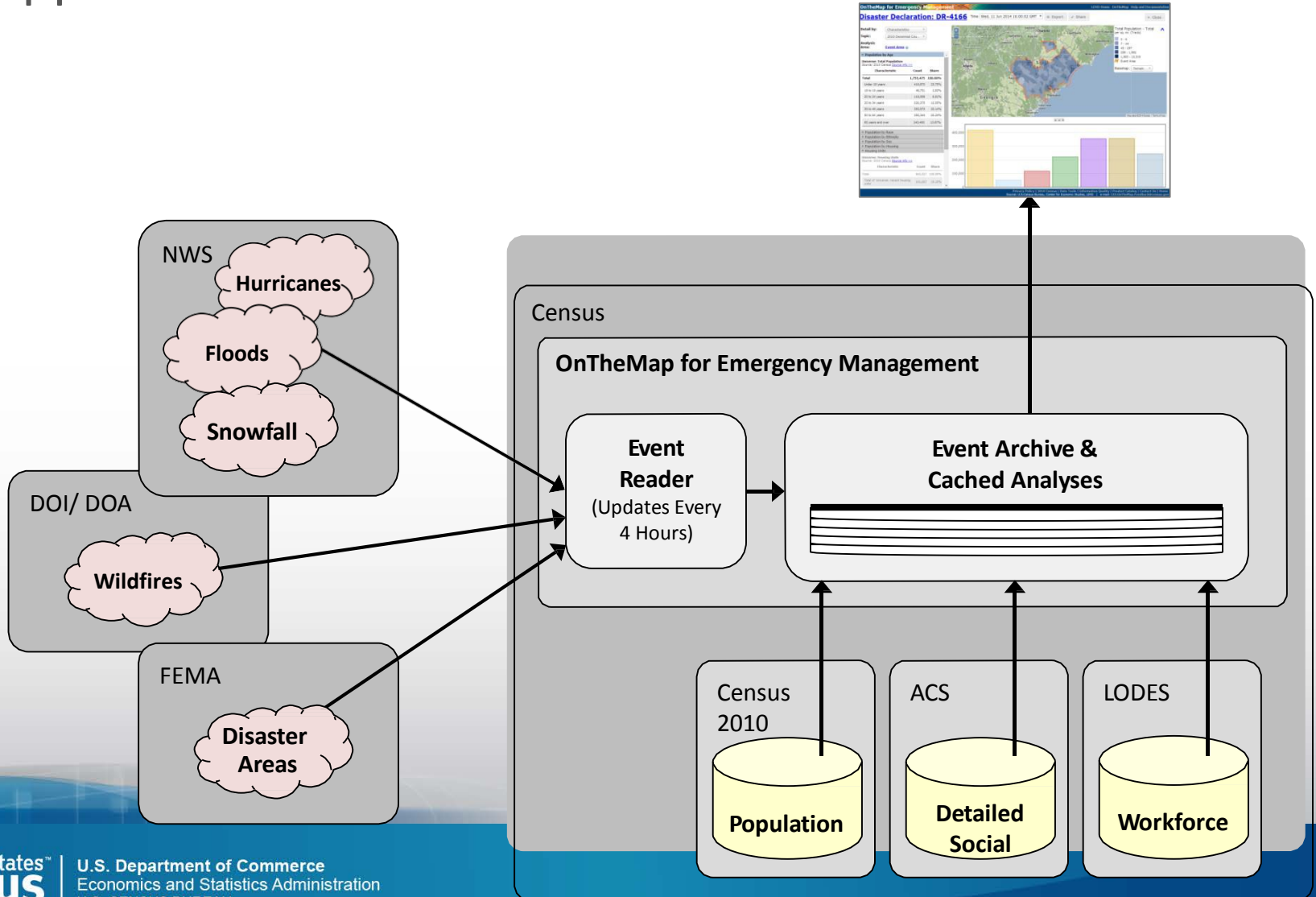


Census Demographic  
& Economic Data



# OnTheMap for Emergency Management –

## Application & Data Architecture



# Need for Social and Economic Data during Emergencies

## Assessing Workforce Impacts

- Identify the number and location of affected workers
- Examine workforce demographics
- Identify affected Industries
- Visualize where affected workers live

## Assessing Population & Housing Impacts

- Identify the number and location of affected residents
- Examine population demographics of affected areas
- Identify vulnerable population groups
- Examine housing characteristics of affected areas

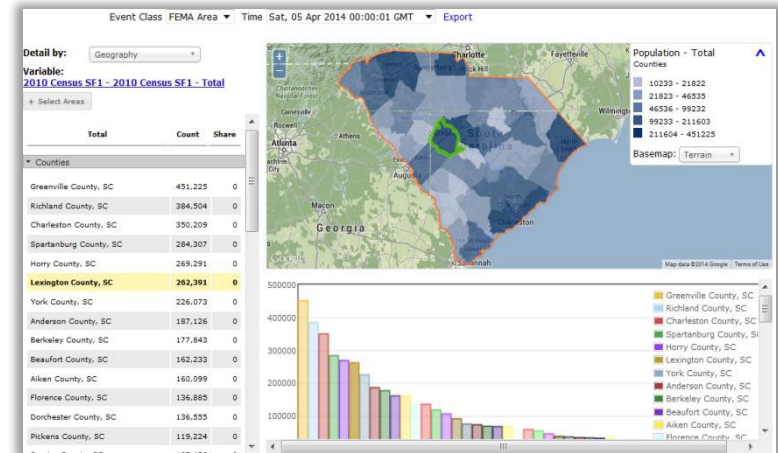
## Emergency Preparedness & Response Planning

- Where should response efforts concentrate?
- Uncover surrounding communities with secondary affects to workforce
- Are there special or vulnerable population segments?

# Version 4 Improvements

- Addition of detailed social, economic, and housing data from the American Community Survey (ACS)
- New community level reporting
- New tools for local, regional, and comparative analyses
- Improved dashboard interface with new interactive reports, charts, and maps
- Improved event search tool
- New linkable maps and reports for easier sharing

## New Dashboard Interface



## Expanded Population & Housing Data

- ▶ Household Type
- ▶ Race
- ▶ Hispanic or Latino Origin
- ▶ English Comprehension by Age
- ▶ English Comprehension by Primary Language
- ▶ Disability by Poverty Status
- ▶ Disability by Age
- ▶ Income to Poverty Ratio
- ▶ Poverty Status for the Past 12 Months
- ▶ Elderly Living Alone
- ▶ Households with Elderly
- ▶ Households with Earnings in the Past 12 Months
- ▶ Households with Social Security in the Past 12 Months
- ▶ Households with Supplemental Security (SSI) in the Past 12 Months
- ▶ Households with Public Assistance in the Past 12 Months
- ▶ Households with Retirement Income in the Past 12 Months
- ▶ Households with Food Stamps/SNAP in the Past 12 Months
- ▶ Tenure
- ▶ Year Structure Built
- ▶ Aggregate Value of Owner Occupied Housing
- ▶ House Heating Fuel

## Greater Reporting Flexibility

Geography Selection

Geography Type: Counties

Search:

Select All | Select None

- Greenville County, SC
- Richland County, SC Affected Population: 384504
- Charleston County, SC Affected Population: 350209
- Spartanburg County, SC Affected Population: 284307
- Horry County, SC Affected Population: 269291
- Lexington County, SC Affected Population: 262391
- York County, SC Affected Population: 226073
- Anderson County, SC Affected Population: 187126
- Berkeley County, SC Affected Population: 177843
- Beaufort County, SC Affected Population: 162233
- Aiken County, SC Affected Population: 160099
- Florence County, SC Affected Population: 136885
- Dorchester County, SC Affected Population: 136555

Select Geographies Cancel



# Application Interface

Recent Events List

Event Search

Emergency Event Polygons

Legend Toggle

Map Frame

Map Selection View

OnTheMap for Emergency Management

LEHD Home OnTheMap Help and Documentation

Search:

**Recent Events**

**Wildfires**

Ponsettia Fire  
Zip 92011, 92009

Highway Fire  
Zip 92003

River Fire  
Zip 92003

Cocos Fire  
Zip 92078, 92029

Miguelito Fire  
No data

Signal Fire  
Zip 88061

Double Diamond Fire  
Lake Meredith Estates CDP, TX, Fritch city, TX

Skunk Fire  
Graham County, AZ

Orange Blossom Fire  
No data

Tomahawk Fire  
Zip 92078, 92029

Bernardo Fire  
San Diego city, CA, Fairbanks Ranch CDP, CA, Rancho Santa Fe CDP, CA

**Federal Disaster Declarations**

**DR-4147**  
Rio Arriba County, NM, Sandoval County, NM, Santa Fe County, NM

**DR-4166**  
Horry County, SC, Berkeley County, SC, Colleton County, SC and 19 other Counties

**EM-3370**  
Everett city, WA, Marysville city, WA, Maltby CDP, WA and 85 other Places (Cities, CDPs, etc.)

**DR-4162**  
Home Census Area, AK, Bethel Census Area, AK, Wade Hampton Census Area, AK and 8 other Counties

**EM-3365**  
Weld County, CO, Larimer County, CO, Washington County, CO and 12 other Counties

**DR-4177**  
Walton County, FL, Santa Rosa County, FL, Okaloosa County, FL and 1 other Counties

**DR-4122**  
Inukon-Kovonk Census Area, AK, Valdez-Cordova Census

Map Selection View

Map data ©2014 Google, INEGI, Terms of Use

Privacy Policy | 2010 Census | Data Tools | Information Quality | Product Catalog | Contact Us | Home  
Source: U.S. Census Bureau, Center for Economic Studies, LEHD | e-mail: CES.OnTheMap.Feedback@census.gov

# Application Interface

The screenshot displays the 'OnTheMap for Emergency Management' interface for Hurricane Sandy. The interface is divided into several functional areas:

- Selected Event:** Located at the top left, it shows the event name 'Hurricane Sandy' and its class 'Forecast Area (Control Uncertainty)'. It includes a time stamp 'Sat, 27 Oct 2012 05:42:35 GMT' and buttons for 'Export' and 'Share'.
- Event Controls:** Located at the top center, it includes a 'Detail by:' dropdown set to 'Characteristics' and a 'Topic:' dropdown set to '2010 Decennial Counts'.
- Analysis Controls:** Located on the left side, it includes an 'Analysis:' dropdown set to 'Event Area About Selection Methodology' and a 'Population by Age' section.
- Map Legend:** Located on the right side, it shows a legend for 'Total Population - Total per sq. mi. (Tracts)' with color-coded categories: 0 - 11, 12 - 133, 134 - 1,559, 1,560 - 18,087, and 18,088 - 209,772. It also includes a 'Basemap:' dropdown set to 'Terrain'.
- Report View:** A large map of the United States with a red circle highlighting the Hurricane Sandy event area.
- Data:** A table on the left side showing population statistics by age group.
- Bar Chart:** A bar chart at the bottom right showing population counts for different categories.

Characteristic	Count	Share
Total	65,290,406	100.00%
Under 18 years	14,771,470	22.62%
18 to 19 years	1,901,571	2.91%
20 to 24 years	4,514,188	6.91%
25 to 34 years	8,421,577	12.90%
35 to 49 years	13,821,404	21.17%
50 to 64 years	12,922,335	19.79%
65 years and over	8,037,861	13.69%

# Hurricane Sandy



# Physical Vulnerabilities

- Construction
  - Housing Units
    - Vacant and Occupied
    - Year Structure was Built
    - Value of Owner Occupied Housing
    - House Heating Fuel
    - Mobile Homes

# Economic Vulnerability

- Total workers in the Area
- Industry Sectors
- Earnings
- Age
- Education

# Social Vulnerability

- Poverty
- Minority
- Disability
- Elderly
- Gender
- Low Educational and Technical Skills (LODES Data)

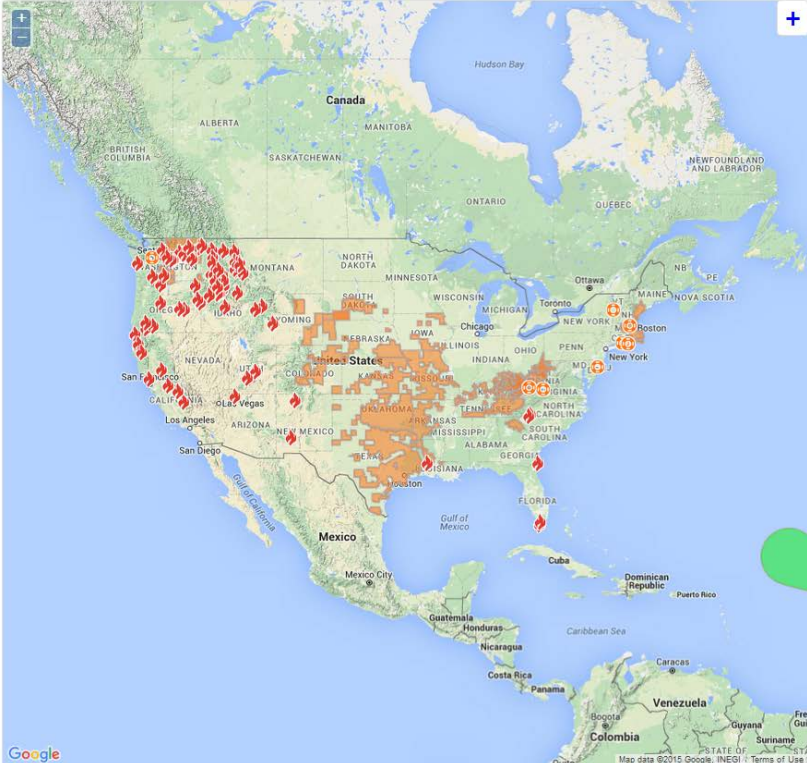
# http://onthemap.ces.census.gov/ em/

**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 09/17/2015**

- Hurricanes**
  - Tropical Depression Nine
    - No data
    - Affected Population: 0
- Wildfires**
  - Valley Fire**
    - Lake County, CA, Sonoma County, CA, Napa County, CA
    - Affected Population: 4,603
  - Butte Fire**
    - Calaveras County, CA, Amador County, CA
    - Affected Population: 2,712
  - Chelan Complex Fire**
    - Okanogan County, WA, Douglas County, WA, Chelan County, WA
    - Affected Population: 1,408
  - 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: 1,144
  - Okanogan Complex Fire**
    - North Omak CDP, WA, Disautel CDP, WA
    - Affected Population: 722
  - Sockeye Fire**
    - Zip 99688
    - Affected Population: 292
  - Canyon Creek Complex Fire**
    - Zip 97820, 97869, 97845
    - Affected Population: 228
  - Nulato Fire**
    - Zip 99765
    - Affected Population: 222
  - Card Street Fire**
    - Zip 99672
    - Affected Population: 138
  - Carpenter Road Fire**
    - 99129, 99173, 99137 and 1 other ZIP Codes (ZCTA)
    - Affected Population: 134
  - First Creek Fire**
    - Zip 98816
    - Affected Population: 85
  - Rock Fire**
    - Zip 99745
    - Affected Population: 66
  - Tepee Springs Fire**



Map data ©2015 Google, INEGI Terms of Use

# Hurricane Sandy and OnTheMap for Emergency Management

OnTheMap for Emergency Management

LEHD Home OnTheMap Help and Documentation

## Hurricane Sandy

Close

Event Class Wind History 34kn (Cumulative Swath) Time Tue, 30 Oct 2012 02:49:58 GMT Export Share

Detail by: Characteristics

Topic: 2010 Decennial Counts

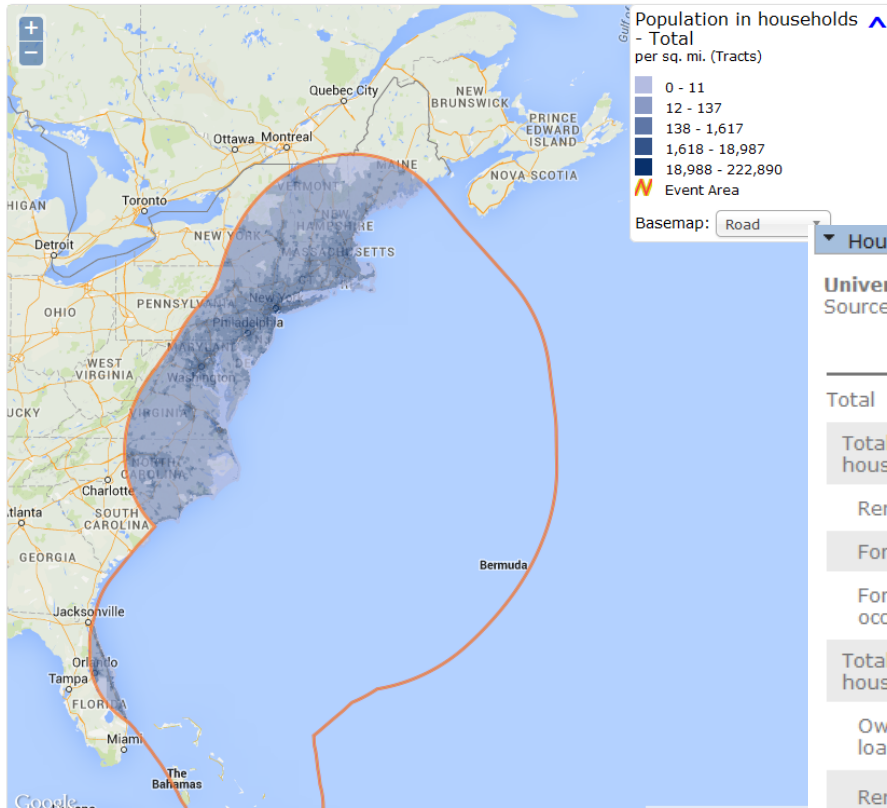
Analysis Area: Event Area

### Population by Age

Universe: Total Population  
Source: 2010 Census [Source info >>](#)

Characteristic	Count	Share
<b>Total</b>	<b>70,322,974</b>	<b>100.00%</b>
Under 18 years	15,962,458	22.70%
18 to 19 years	2,024,663	2.88%
20 to 24 years	4,877,625	6.94%
25 to 34 years	9,224,093	13.12%
35 to 49 years	14,988,913	21.31%
50 to 64 years	13,768,044	19.58%
65 years and over	9,477,178	13.48%

- Population by Race
- Population by Ethnicity
- Population by Sex
- Population by Housing
- Housing Units



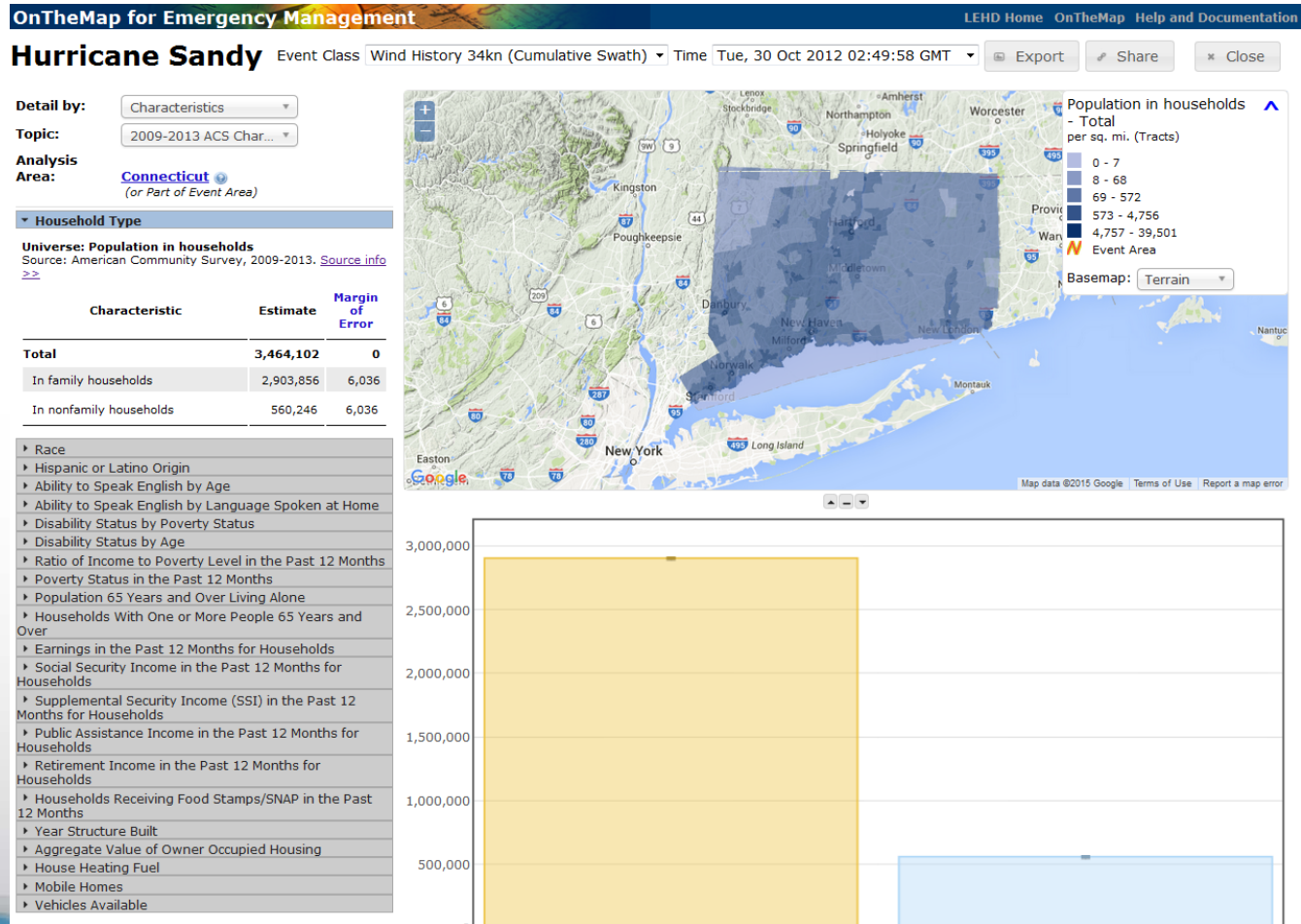
### Housing Units

Universe: Housing Units  
Source: 2010 Census [Source info >>](#)

Characteristic	Count	Share
<b>Total</b>	<b>29,971,534</b>	<b>100.00%</b>
Total of 'Universe: Vacant housing units'	3,157,879	10.54%
Rented, not occupied	821,279	2.74%
For sale only	368,324	1.23%
For seasonal, recreational, or occasional use	1,168,454	3.90%
Total of 'Universe: Occupied housing units'	26,813,655	89.46%
Owned with a mortgage or a loan, Owned free and clear	16,822,641	56.13%
Renter-Occupied	9,991,014	33.34%



# Hurricane Sandy in Connecticut



# Social Vulnerabilities

## Disability by Age

OnTheMap for Emergency Management

LEHD Home OnTheMap Help and Documentation

Hurricane Sandy Event Class Wind History 34kn (Cumulative Swath) Time Tue, 30 Oct 2012 02:49:58 GMT Export Share Close

Detail by: Characteristics

Topic: 2009-2013 ACS Char...

Analysis Area: Connecticut (or Part of Event Area)

Ability to Speak English by Language Spoken at Home

Disability Status by Poverty Status

Universe: Civilian population 18 years and over for whom poverty status is determined  
Source: American Community Survey, 2009-2013. [Source info >>](#)

Characteristic	Estimate	Margin of Error
Total	2,673,508	542
With a disability	341,537	3,571
Income in the past 12 months below poverty level	59,133	1,651
Income in the past 12 months at or above poverty level	282,404	3,166

Disability Status by Age

Universe: Civilian population 18 years and over for whom poverty status is determined  
Source: American Community Survey, 2009-2013. [Source info >>](#)

Characteristic	Estimate	Margin of Error
Total	2,673,508	542
With a disability	341,537	3,571
18 to 64 years	180,849	2,748
65 years and over	160,688	2,281

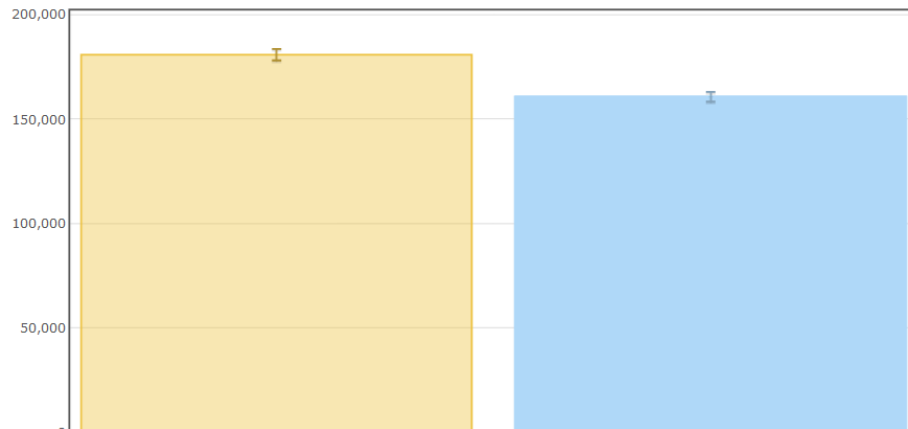
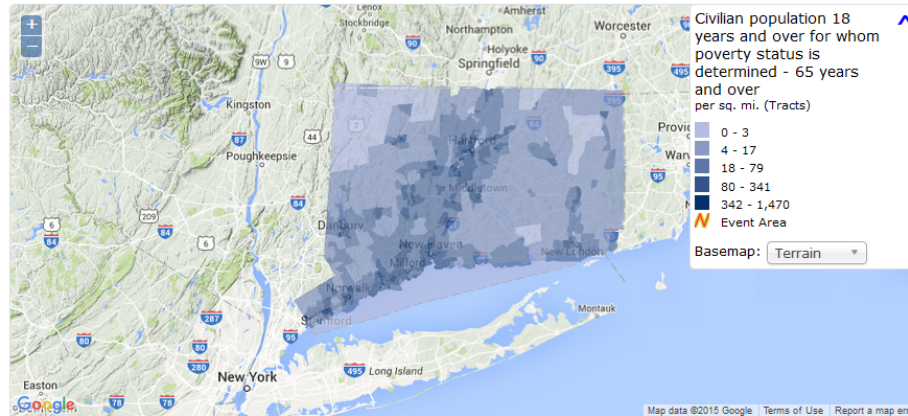
Ratio of Income to Poverty Level in the Past 12 Months

Poverty Status in the Past 12 Months

Population 65 Years and Over Living Alone

Households With One or More People 65 Years and Over

Earnings in the Past 12 Months for Households



# Physical Vulnerabilities Year Structure Was Built

OnTheMap for Emergency Management

LEHD Home OnTheMap Help and Documentation

Hurricane Sandy Event Class Wind History 34kn (Cumulative Swath) Time Tue, 30 Oct 2012 02:49:58 GMT Export Share Close

Detail by: Characteristics

Topic: 2009-2013 ACS Char...

Analysis Area: Connecticut

(or Part of Event Area)

- Poverty status in the Past 12 Months
- Population 65 Years and Over Living Alone
- Households With One or More People 65 Years and Over
- Earnings in the Past 12 Months for Households
- Social Security Income in the Past 12 Months for Households
- Supplemental Security Income (SSI) in the Past 12 Months for Households
- Public Assistance Income in the Past 12 Months for Households
- Retirement Income in the Past 12 Months for Households
- Households Receiving Food Stamps/SNAP in the Past 12 Months
- ▾ Year Structure Built

Universe: Housing units

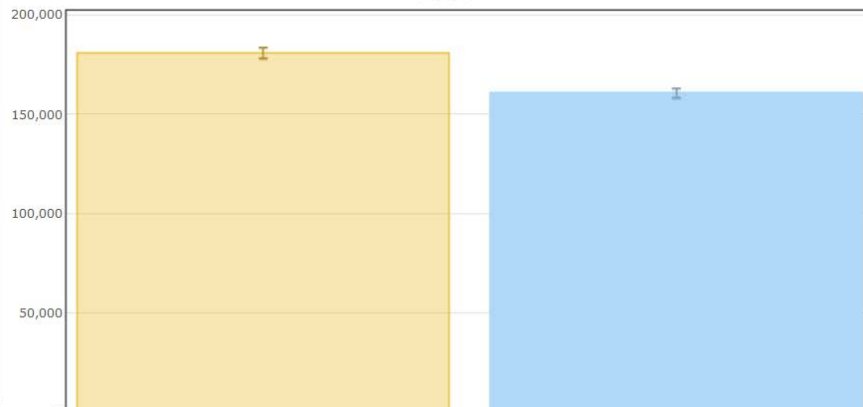
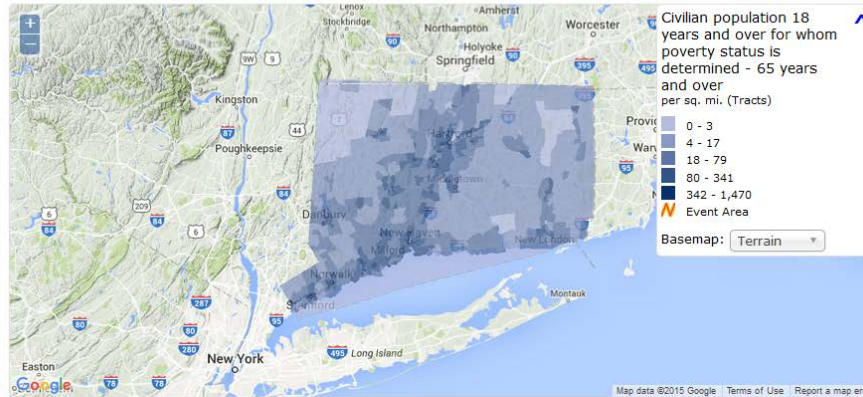
Source: American Community Survey, 2009-2013. [Source info >>](#)

Characteristic	Estimate	Margin of Error
Total	1,486,995	423
Built 2010 or later	4,959	479
Built 2000 to 2009	102,666	1,739
Built 1990 to 1999	111,295	1,843
Built 1980 to 1989	192,185	2,730
Built 1970 to 1979	200,576	2,397
Built 1960 to 1969	200,430	2,633
Built 1950 to 1959	232,555	2,929
Built 1940 to 1949	105,742	1,949
Built 1939 or earlier	336,587	3,342

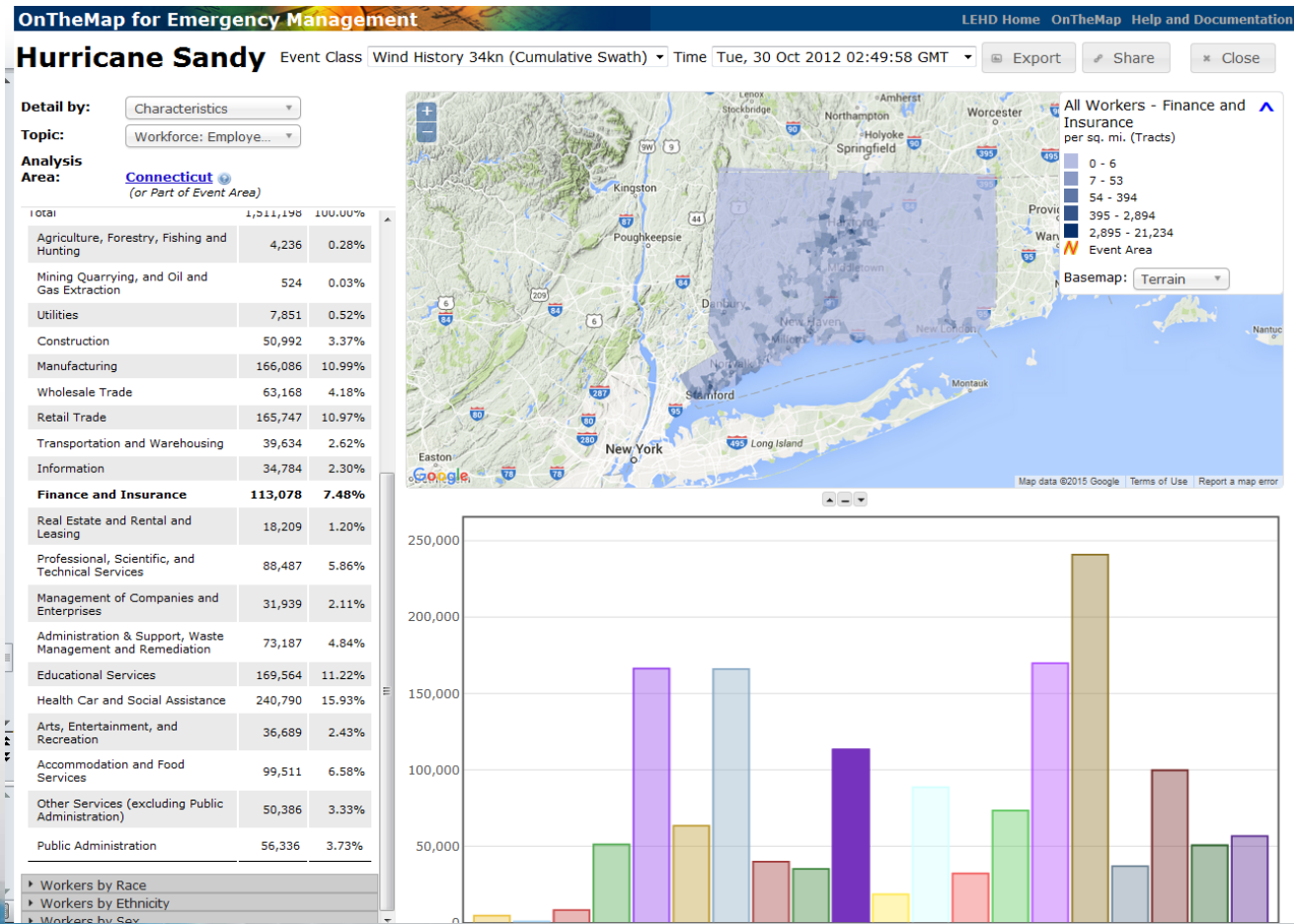
▸ Aggregate Value of Owner Occupied Housing

▸ House Heating Fuel

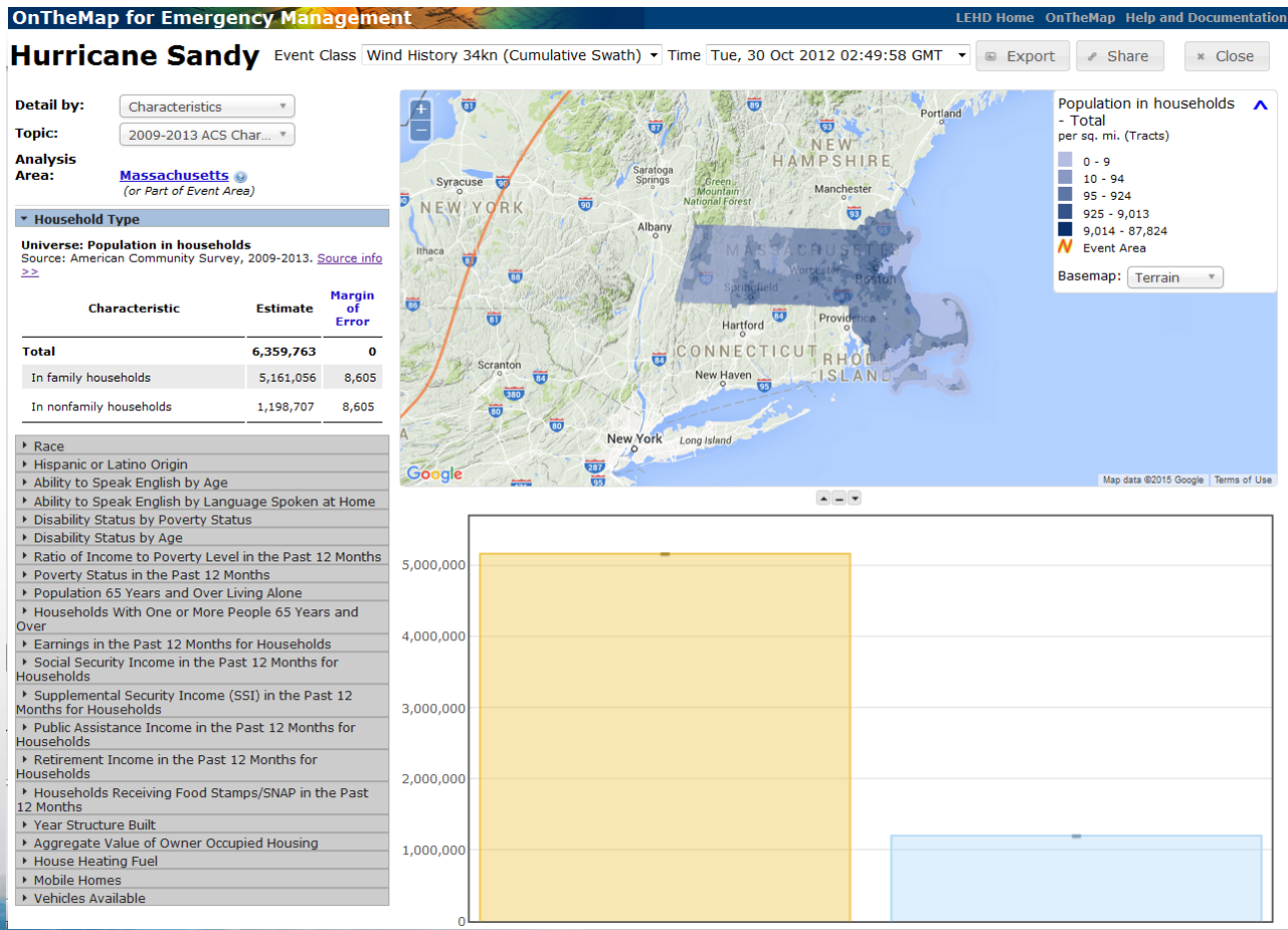
▸ Mobile Homes



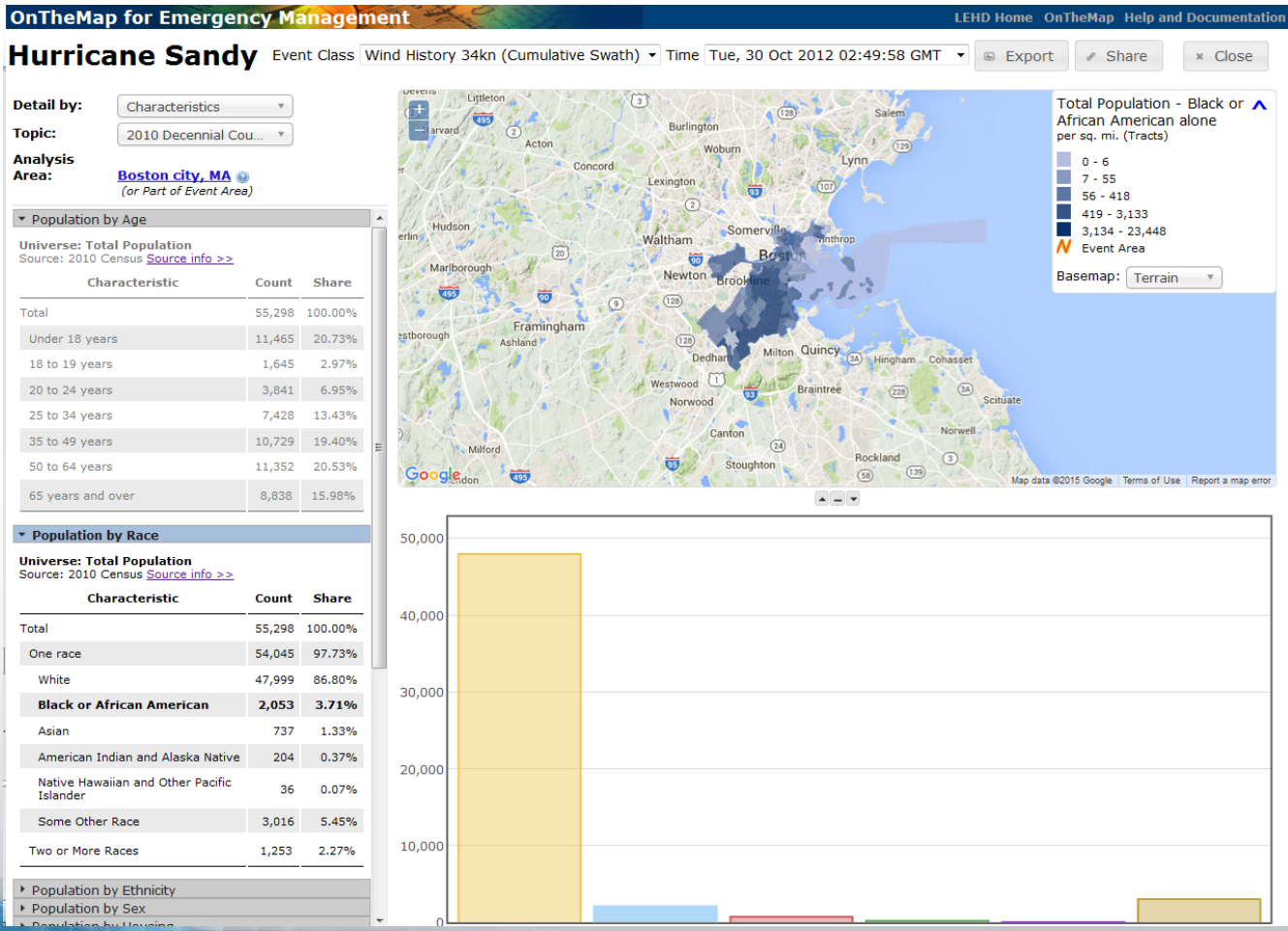
# Economic Vulnerabilities Employed in the Event Area



# Hurricane Sandy in Massachusetts



# Hurricane Sandy in Boston 2010 Decennial Counts



# *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)