Community Development

Population Projections

Background

Population and Employment projections last prepared in 2008 for the Charlotte 2050 Comprehensive plan.

Utilized throughout the plan and should be used as the base data across the County for planning and forecasting.

Not updated since 2010 and does not include the decennial census information.

Currently utilizing data from the Bureau of Economic and Business Research (BEBR) but this is only available at a County level

Details of the proposal

- Evaluate and predict the growth of the county.
- Evaluate and predict the socio-economic health of the county
- Web based output heavily utilizing GIS
- Utilize existing county staff - Mapping
- Able to compare metrics and identify trends
- Maintained annually – potential for grad student thesis topics

Charlotte County
DATA & MAPPING WEBSITES

WESTERN MICHIGAN UNIVERSITY
W.E. Upjohn Center for the Study of Geographical Change

Kathleen M. Baker, Ph.D.

WMU Department of Geography
A NGA/USGS Designated Center of Academic Excellence in Geospatial Sciences

Health Data Research, Analysis and Mapping Center (HDReAM)
& W.E. Upjohn Center for the Study of Geographical Change

Overview

- Key personnel
- Population projections to 2040
- Seasonal population estimates
- Four New Website Applications
  - Community Profile
  - Population Estimates and Projections
  - Economic Development
  - Public Health and Community Safety
- Tips, tools and advanced widgets

Project Lead

Kathleen M. Baker, PhD, GISP

- Professor in the Department of Geography at Western Michigan University since 2004.
- Certified GIS Professional (GISP) since 2007.
- Director, WMU W.E. Upjohn Center for the Study of GIS and Geographical Change to promote interdisciplinary research in geomatics and spatial analysis.
- Director WMU Health Data Research, Analysis and Mapping (HDReAM) Center to promote interdisciplinary collaboration in public health.
- Dr. Baker has been awarded funding from the USDA (PI, $1.2m) and NSF (co-PI, collaborative, $900K). The projects have involved high volumes of data, integration of data sources, scientific workflows, and public access to information in real-time. Dr. Baker has also managed a variety of contracts for state agencies including the Michigan Department of Health and Human Services and several local community foundations.

Population Projection Lead

Benjamin Ofori-Amoah, PhD, AICP

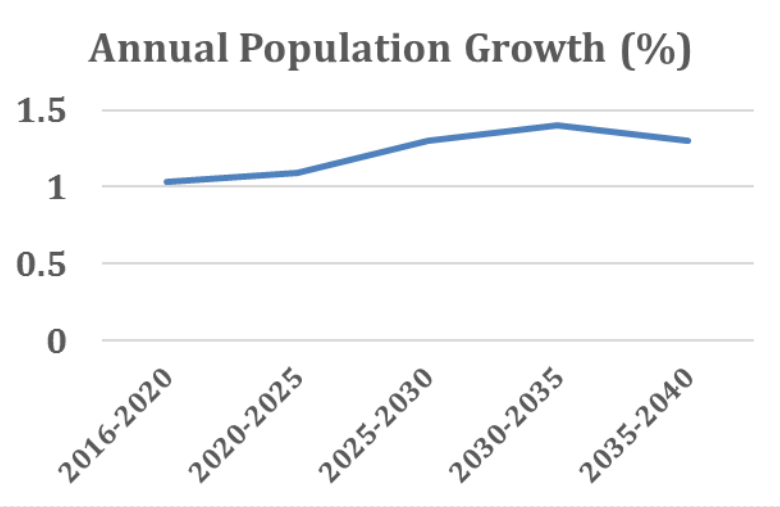
- Chair of the Department of Geography at Western Michigan University since 2006.
- Certified AICP.
- Author of the book *Beyond the Metropolis: Urban Geography as if Small Cities Mattered (*University Press of America, 2006)
- Dr. Ofori-Amoah has authored a number of publications in urban planning for small cities and trained a large number of students in regional planning and location analysis for economic development. He is also a founding partner and collaborator in WMU's Transportation Research Center for Livable Communities – A US Department of Transportation grant ($1.4 million).

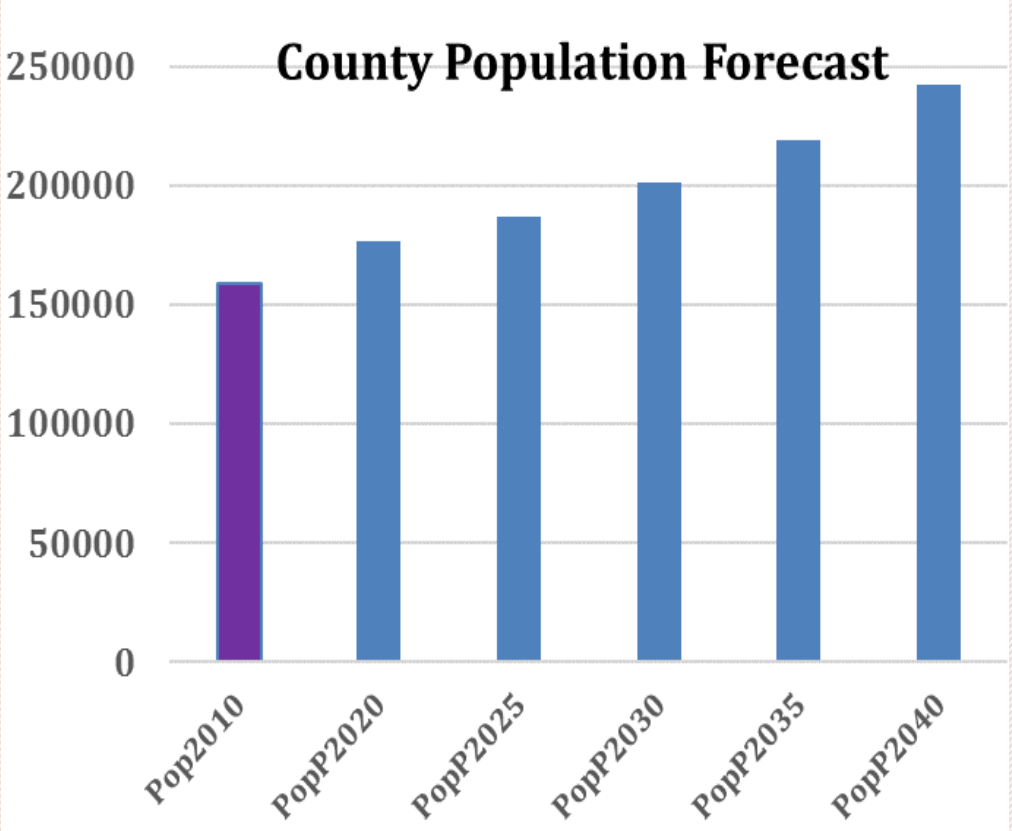
Population Projection Methods

- Population projections are conditional statements about future populations if current conditions remain the same.
- Charlotte County population projections were calculated using the trend projection method.
- During trend projection several mathematical curves were fit to the data. The challenge is to choose the curve that best fits the available data and will give projections that are reasonable given present conditions.
- All projection methods use population data from the past. The quality of the result depends largely on the number of past data points and the quality of the data. A large part of the past data are only estimates based on the decennial census data. This definitely introduces some imperfections into the data and the results.

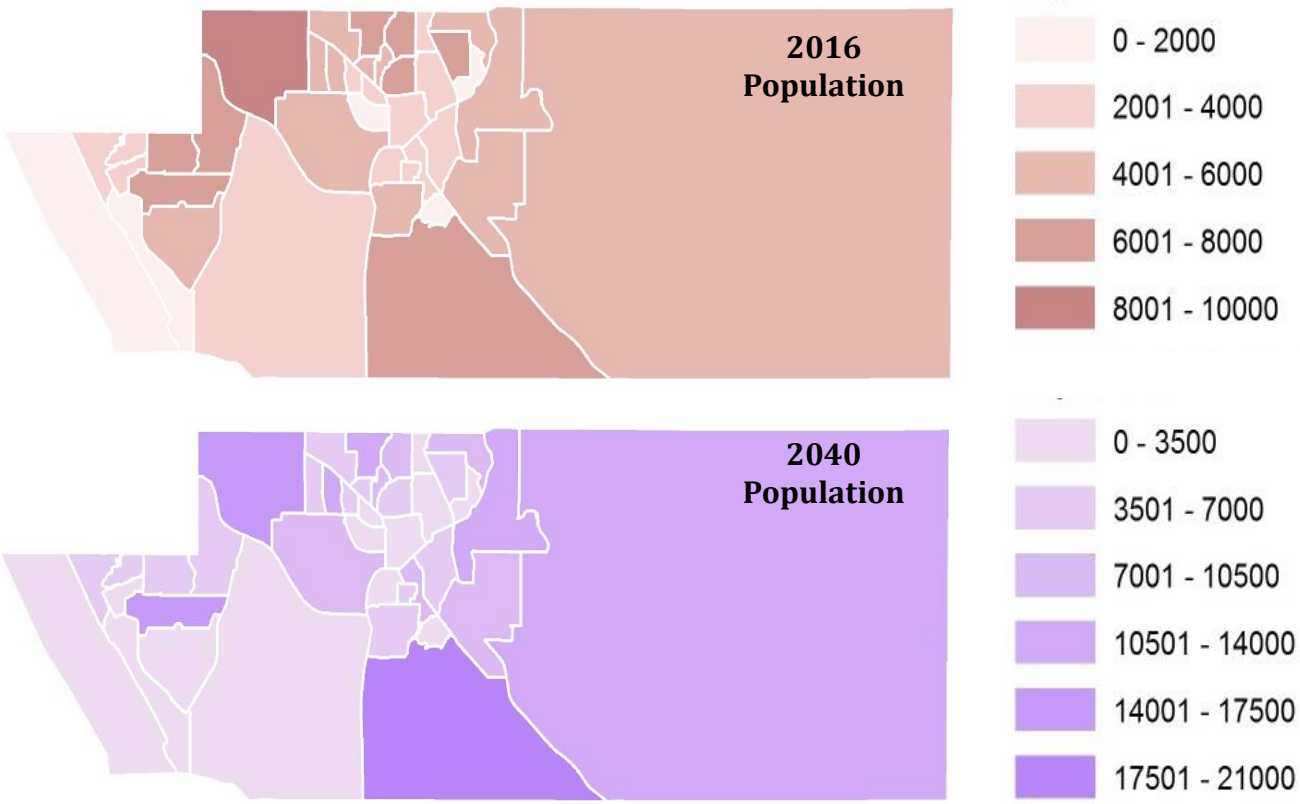
County Population Projection

- The general trend shows that the population of Charlotte County will grow over the coming years to near one quarter of a million in 2040.
- The rate of population growth is projected to increase from 1.03% annually and peak at 1.40% annually.



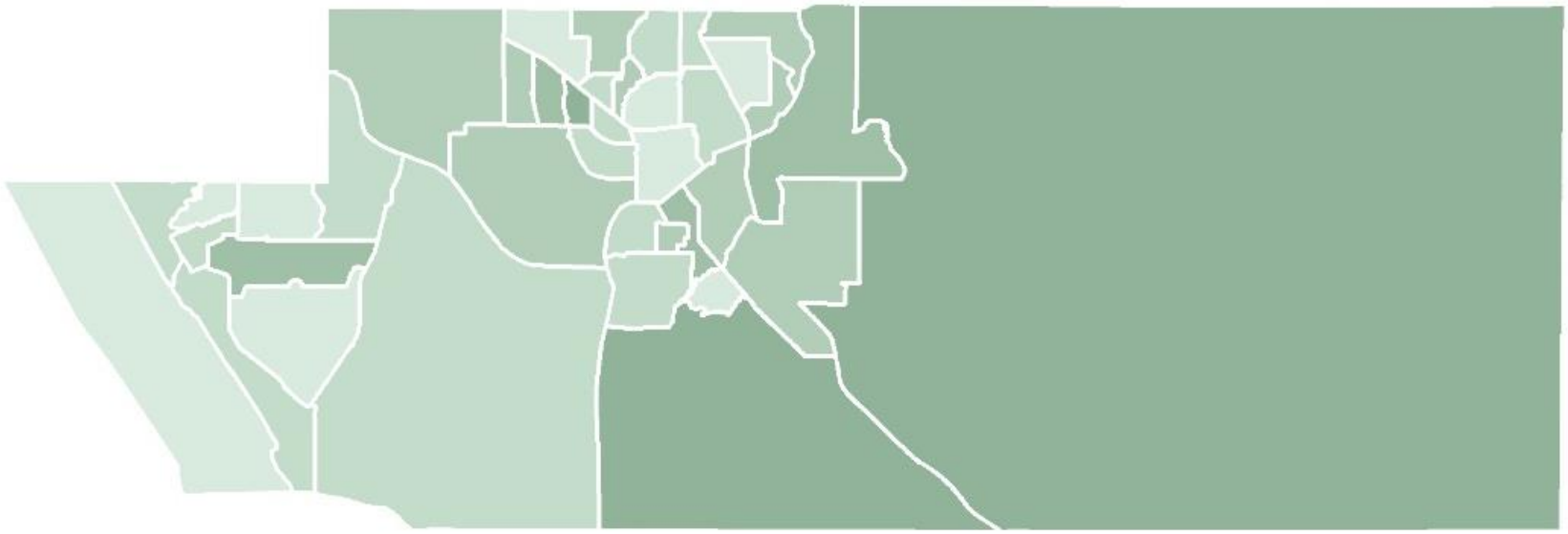


Patterns in Population



- Spatial patterns in population will remain much the same, with increase especially in the east part of the county.

Near-Term Population Growth



- Population growth from 2016-2025 emphasizes the importance of the east side of the county.
- Population projections and % change estimates are available on the website for 5 year time intervals.

Seasonal Population Methods

The **total seasonal population** for Charlotte County combines:

- total estimated *sunbirds* claiming the county as their permanent residence,
- estimated *snowbirds* that reside in the county part of each year,
- population estimated to live in *housing units* designated for *seasonal and/or recreational use*,
- *temporary visitors* estimated to stay in homes of permanent residents for 30+ days.
- These seasonal estimates do not include hotel/motel guests.

Sunbirds and Snowbirds

Sunbird Estimates

- In April (Census) the sunbird population is approximately 7.7 percent of the Florida resident population aged 55 and over.
- An additional 4.4% are estimated to be away from their permanent residence in April and, therefore, are uncounted by the census data.

Snowbird Estimates

- Snowbirds account for about 4.7 percent of the Florida population aged 55 and over. In April (Census) the snowbird population is approximately 63 percent of its total, or at about 4.04 percent of the total population.

Percentages as found by Smith, S.K. and M. House. 2006. Snowbirds, Sunbirds, and Stayers: Seasonal Migration of Elderly Adults in Florida. Journal of Gerontology, Vol. 61B, S232-s239.

Recreation & Home Visitors

Recreational Housing

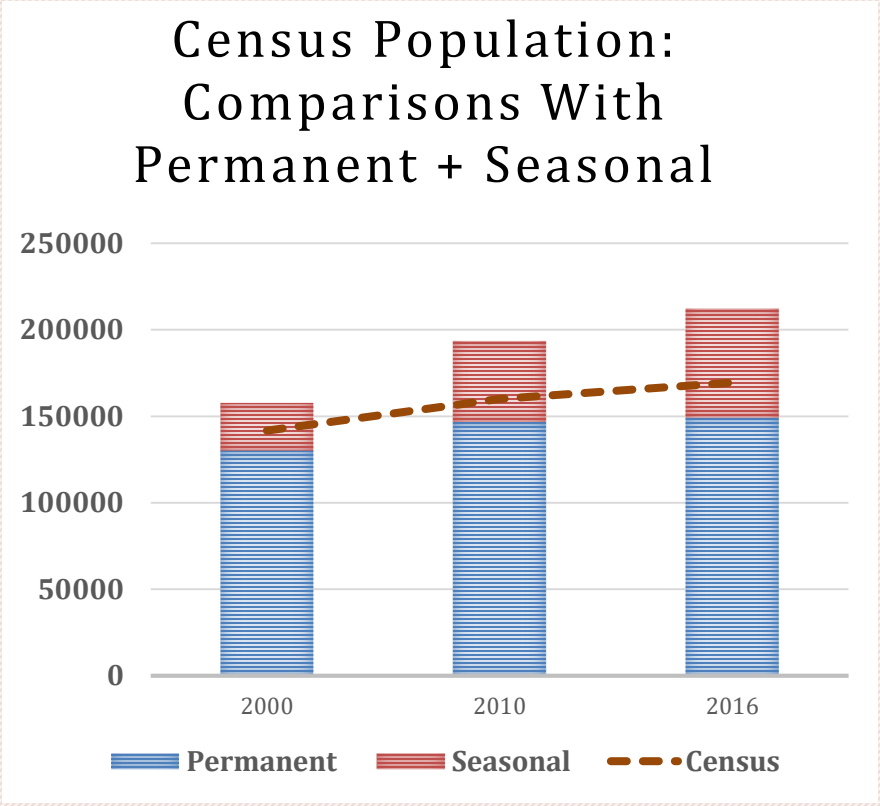
- Housing units that are vacant but designated as properties for seasonal/recreational use were assumed to house a population equivalent to the average number of persons per housing unit in the same census block group. This estimate includes the snowbirds who were away from Charlotte County at the Census, as well as other temporary vacationers using a rental in the area.

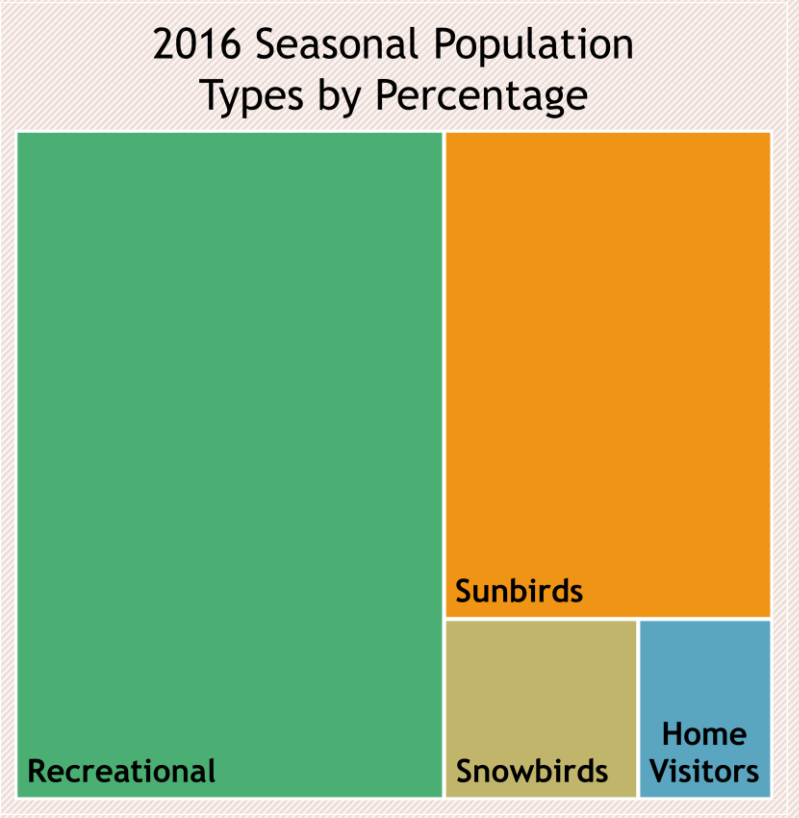
Home Visitors

- Approximately 1.7 percent of households in Florida report having visitors in their home for over one month. The average number of visitors is 2.4 per household.

Seasonal Population Estimates

Seasonal populations are highest in Florida in Jan; lowest in Sept. Estimates of permanent and seasonal populations results in a higher total than census estimates partly because of the timing of census estimates.



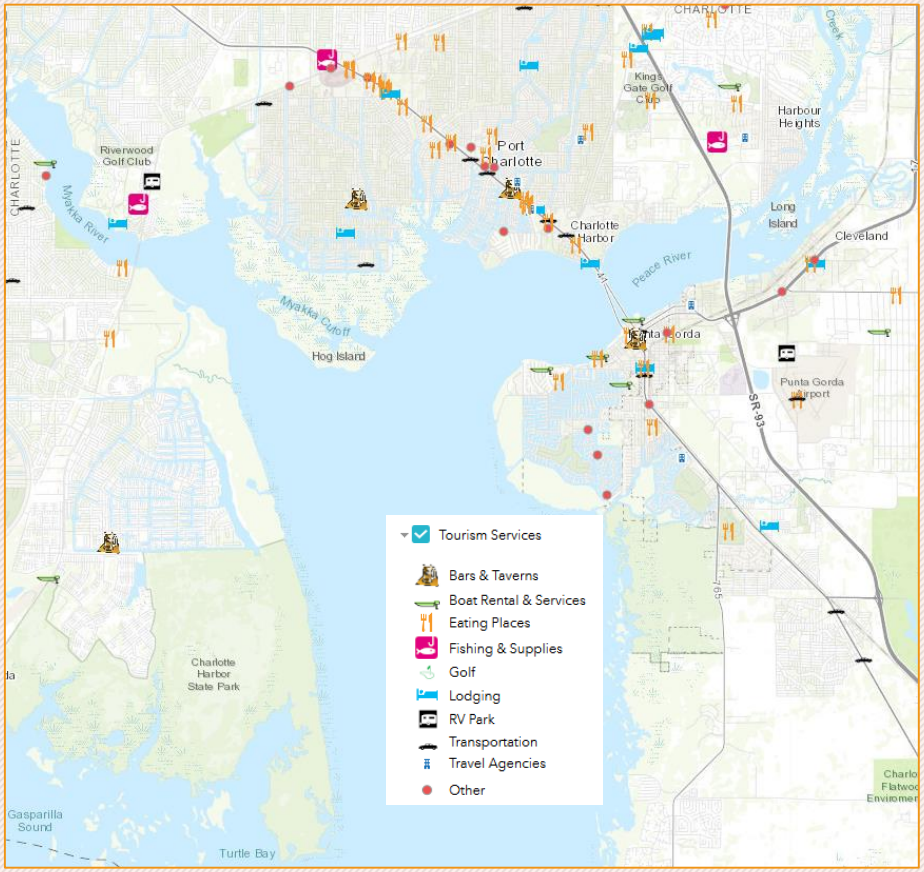


New Mapping/GIS Websites

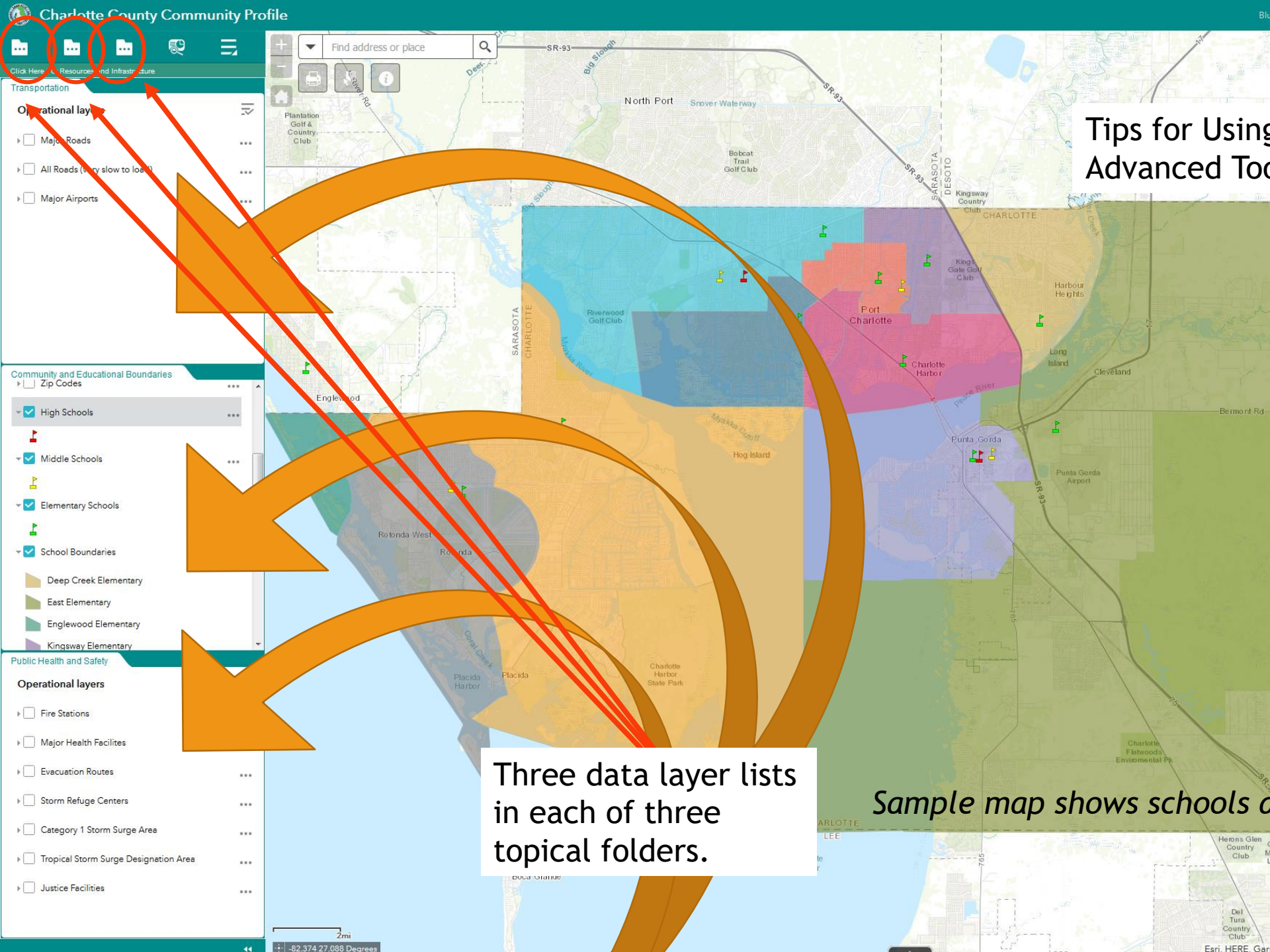
- New Website Applications
  - Community Profile
  - Population Estimates and Projections
  - Economic Development
  - Public Health and Community Safety
- Developed in ArcGIS Web App
- Combined county data with federally available data on socio-demographics, at-risk populations, health insurance, etc.

Community Profile Site

- Amenities and Attractions
  - Parks and Recreation
  - Services and Resources
  - Tourism Services and Community Services Filters
- Resources and Infrastructure
  - Transportation
  - Community and Educational Boundaries
  - Public Health and Safety
- Population and Housing
  - Population
  - Income and Employment
  - Housing

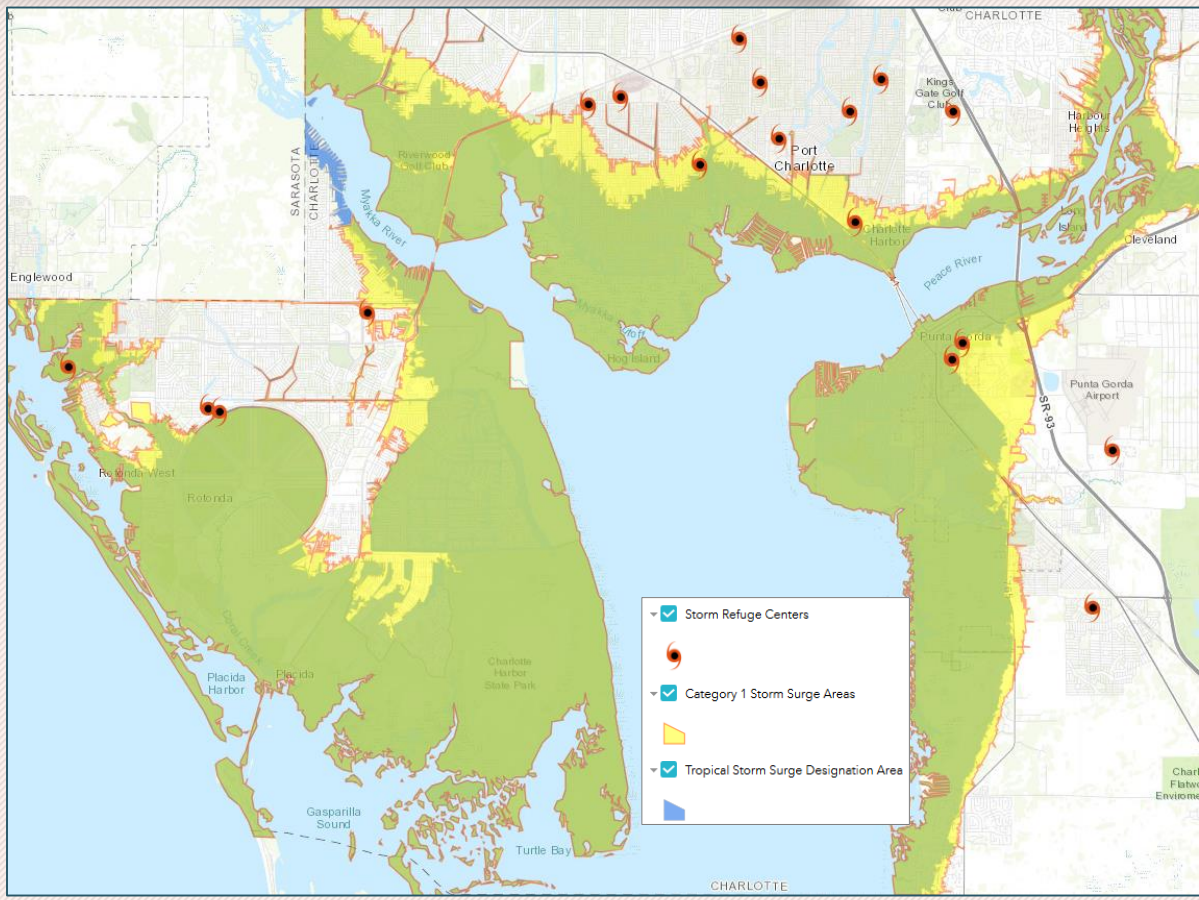


Sample map shows tourism services.

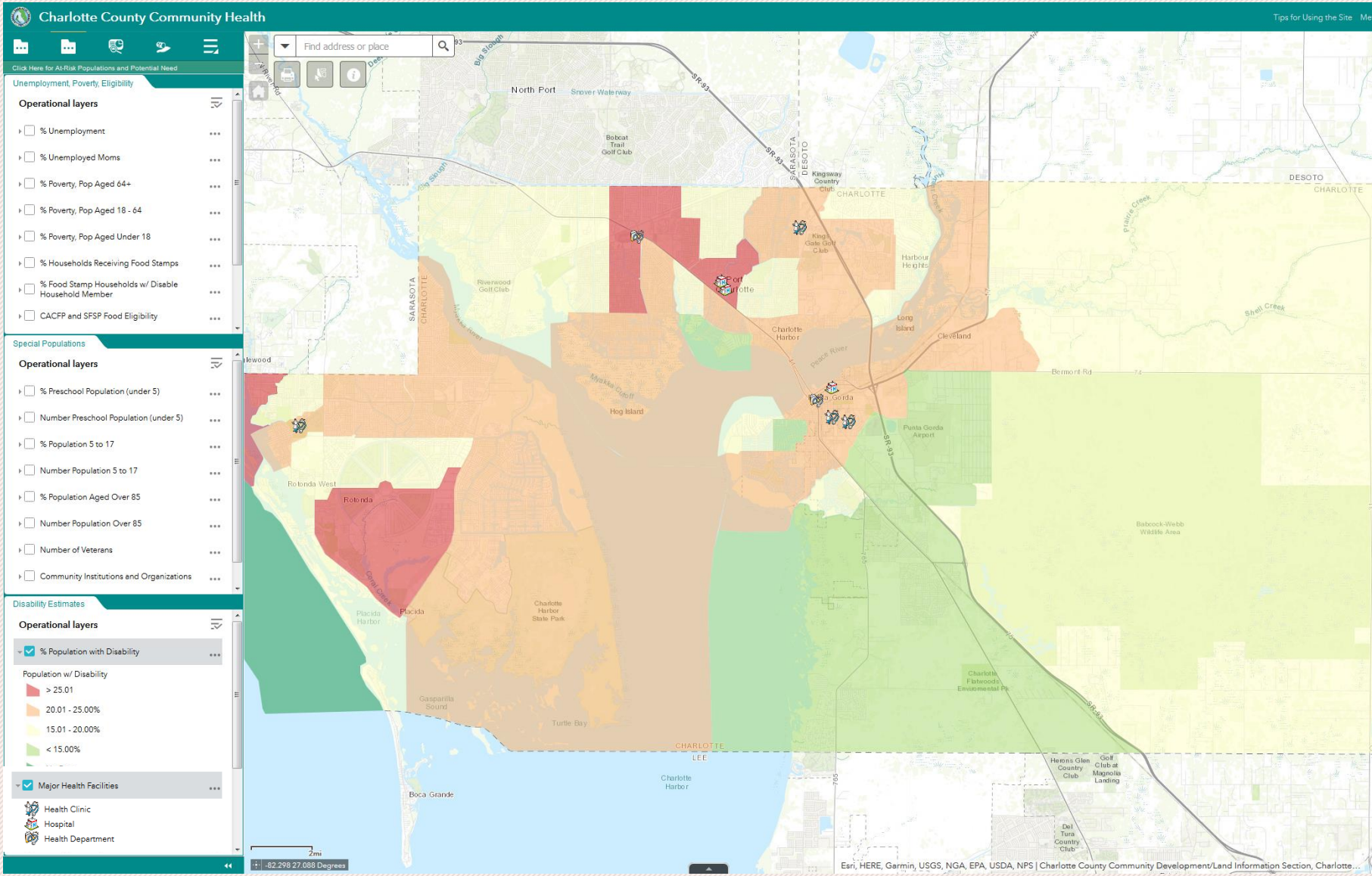

Charlotte County Community Profile
Transportation
Major Roads
Major Airports
Community and Educational Boundaries
Zip Codes
High Schools
Middle Schools
Elementary Schools
School Boundaries
Deep Creek Elementary
East Elementary
Englewood Elementary
Kingsway Elementary
Public Health and Safety
Operational layers
Fire Stations
Major Health Facilites
Evacuation Routes
Storm Refuge Centers
Category 1 Storm Surge Area
Tropical Storm Surge Designation Area
Justice Facilities
Find address or place
Tips for Using
Advanced Too
Three data layer lists in each of three topical folders.
Sample map shows schools a

Public Health and Community Safety

- Health Resources
  - Facilities, Services, Hazards
  - Infrastructure
  - Health Insurance Status
- At-Risk Populations and Potential Need
  - Unemployment, Poverty, Federal Eligibility
  - Special Populations
  - Disability Estimates



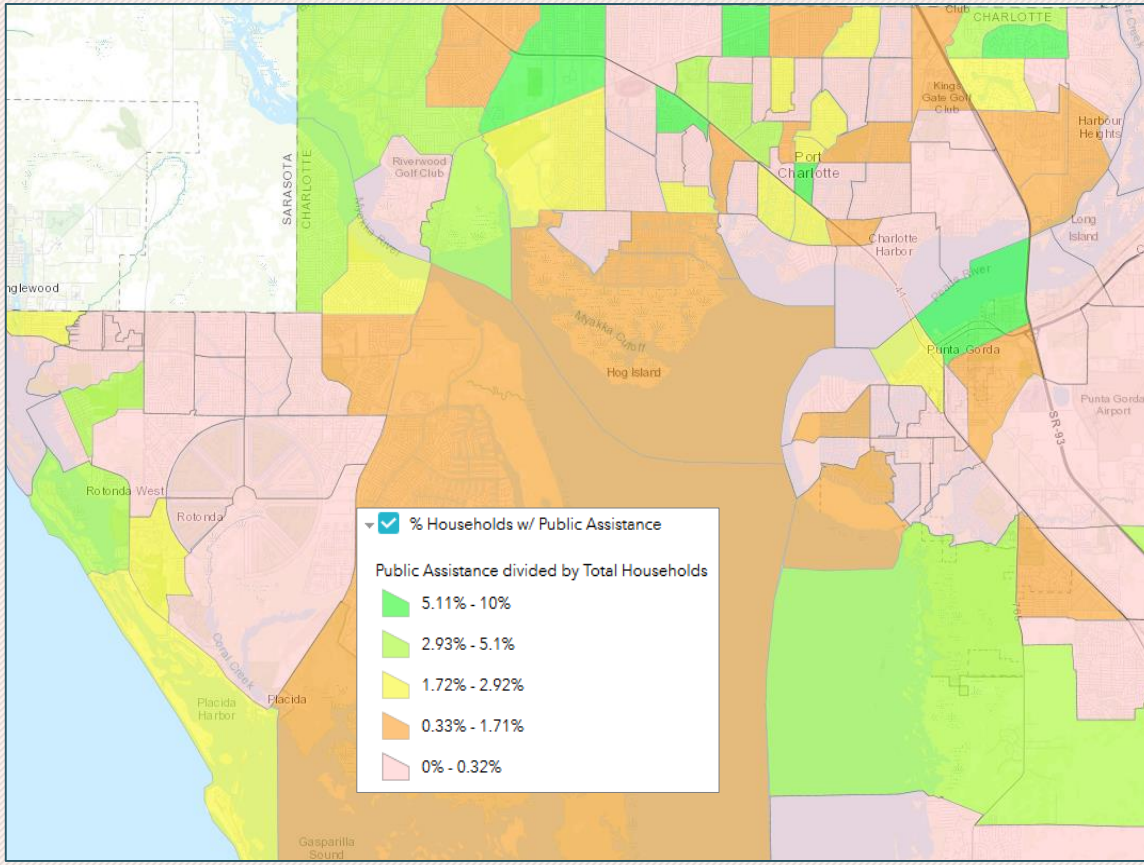
Sample map shows storm refuge centers and Category 1 Storm Surge Areas.



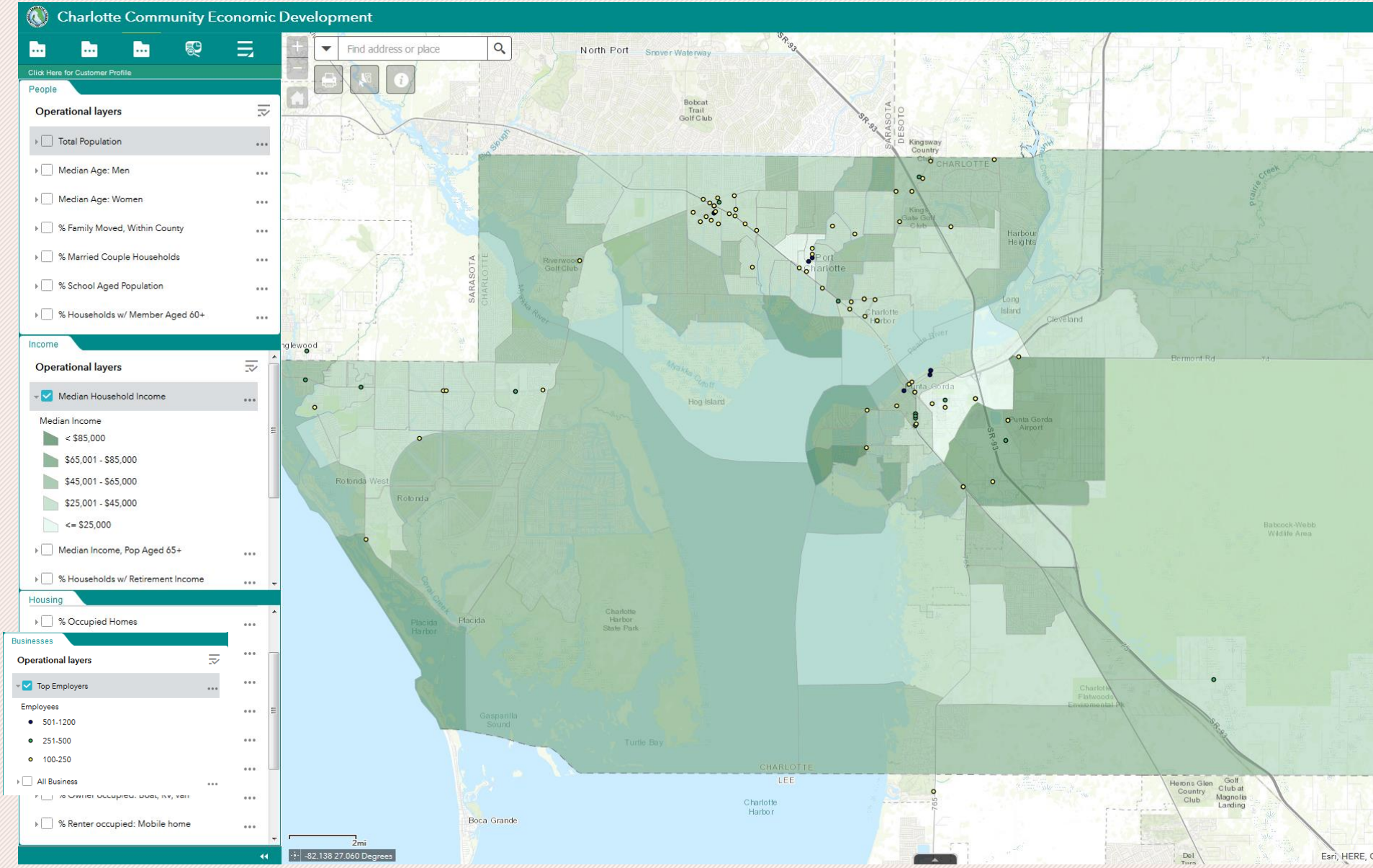
Sample map shows % population with disability and major health facilities.

Economic Development

- Site Suitability
  - Current Use
  - Infrastructure and Accessibility
  - Businesses
- Workforce Characteristics
  - Education Attainment
  - Occupation by Industry
- Customer Profile
  - People
  - Income
  - Housing



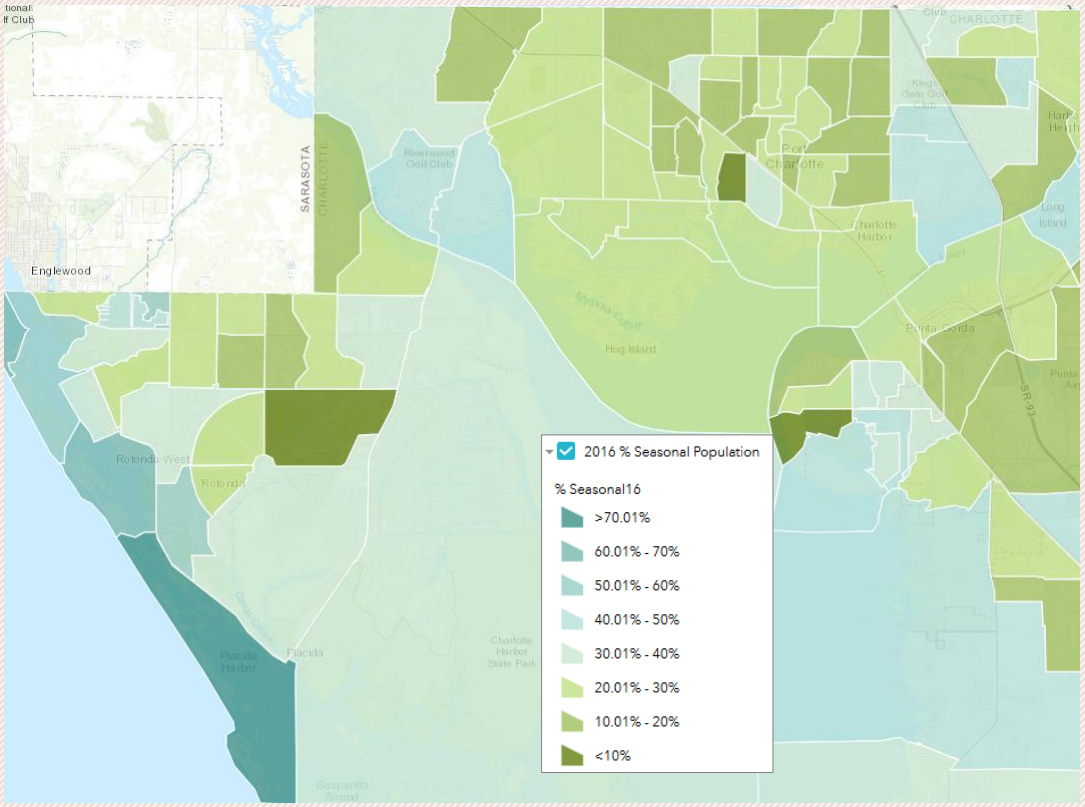
Sample map shows % households with public assistance.



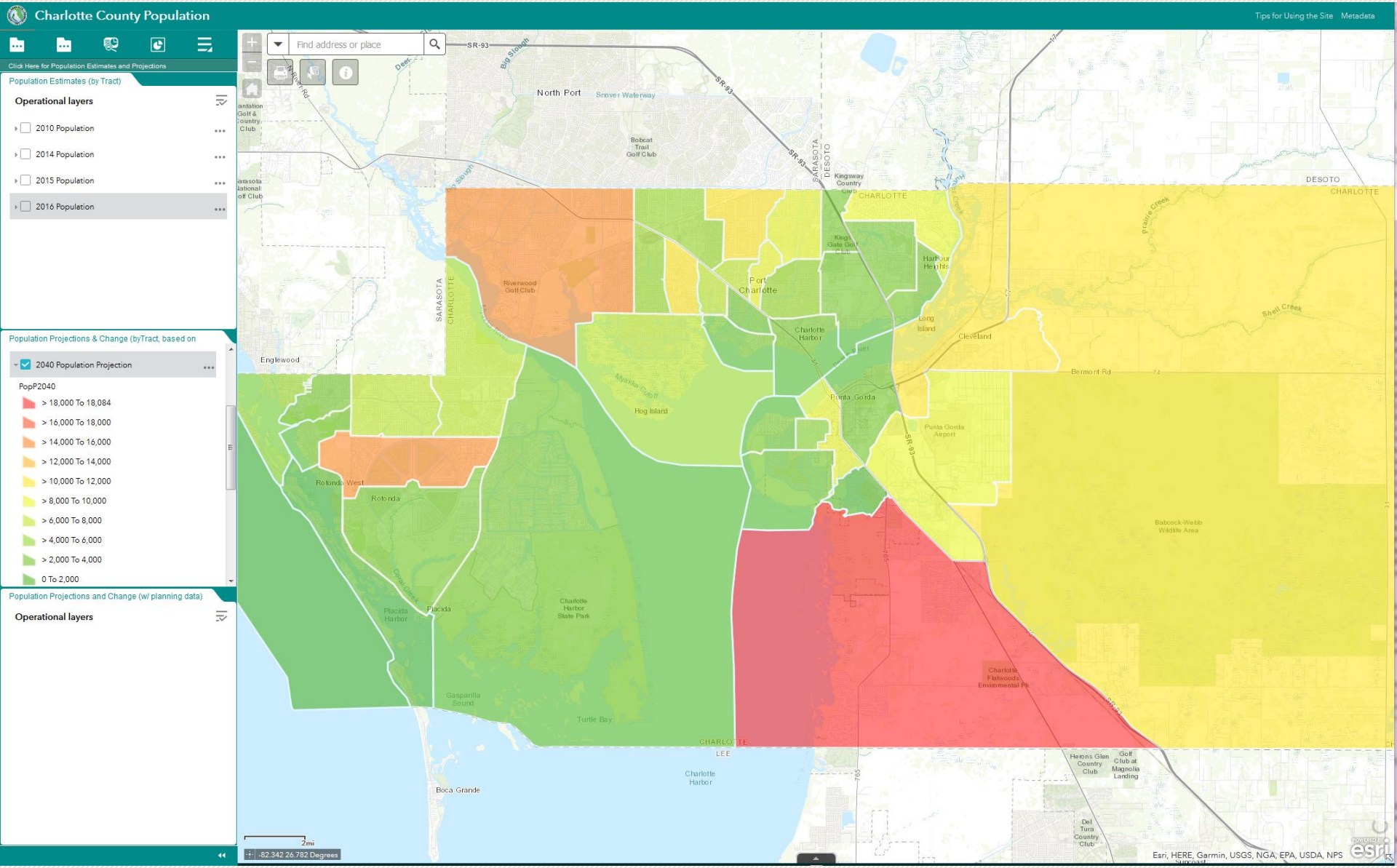
Sample map shows median household income and top employers.

Population

- Population Estimates and Projections
  - Population Estimates (by Tract)
  - Population Projections & Change
- Seasonal Housing and Population
  - Seasonal Population Estimates
  - Seasonal Housing

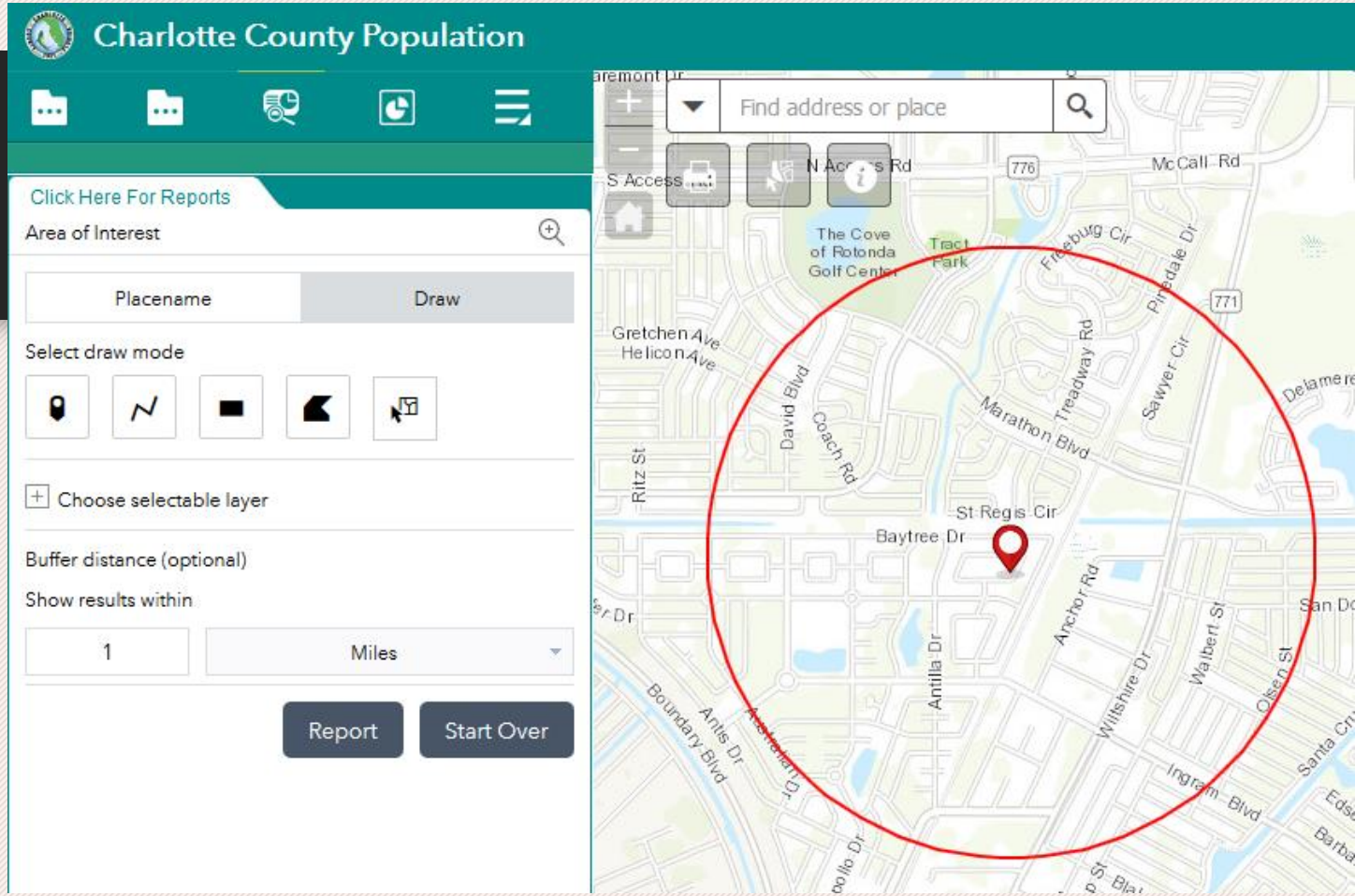


Sample map shows estimate of % seasonal population in 2016.

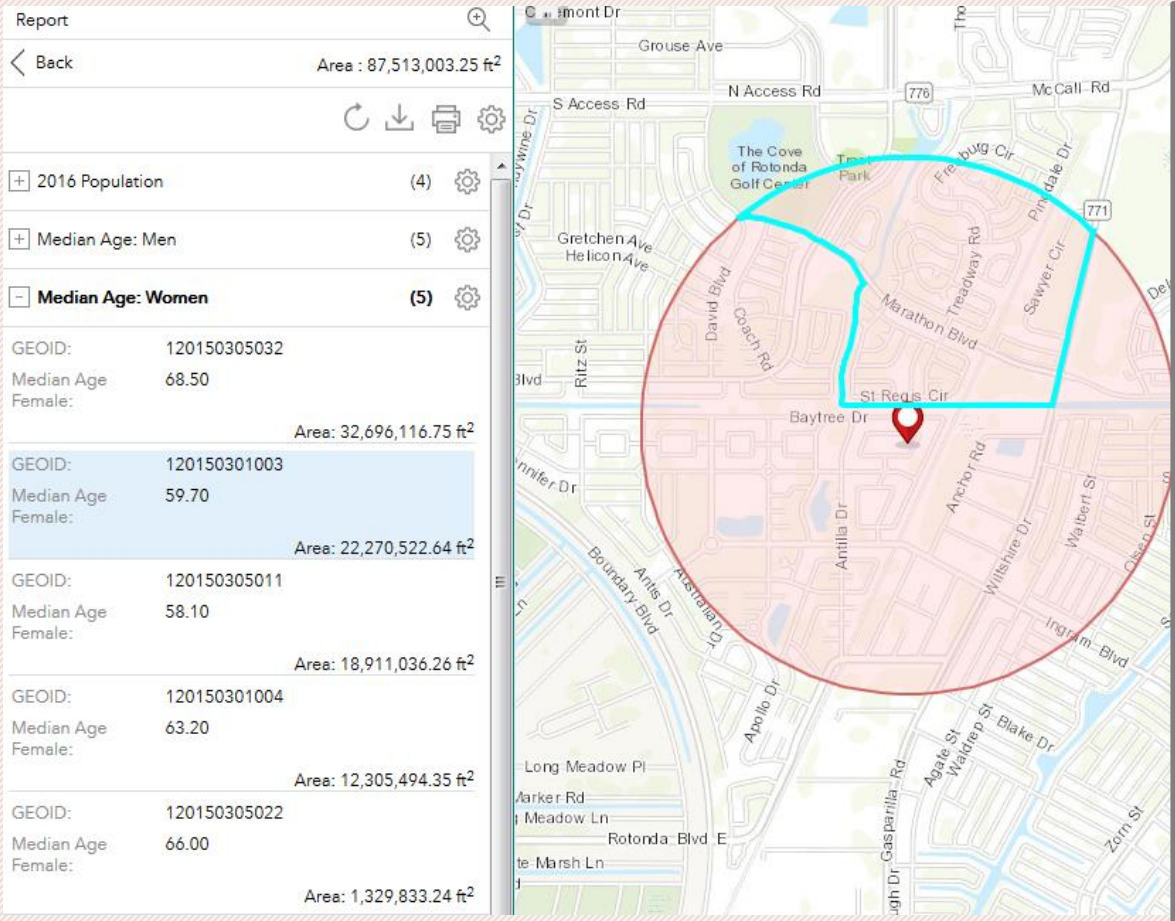


Sample map shows population projection for 2040.

Reports



This tool allows the user to define an area of interest by a place name search or drawing on the map, and analyze the configured layers. The results of the analysis will provide a printed report of a downloadable CSV file.



The report describes characteristics of the surrounding area by block group. The example shows median age of women residents of the various block groups that overlap with the highlighted pink circle. The selected (blue outlined) block group corresponds to the selected (blue) record in the table.

2016 Population

#	TRACTCE10_	Pop2016	Area(ft²)
1	Census Tract 301	6,371.84	34,595,826.96
2	Census Tract 305.03	6,021.98	32,695,414.95
3	Census Tract 305.01	3,433.62	18,895,317.04
4	Census Tract 305.02	5,432.24	1,326,444.52

Median Age: Men

#	GEOID	Median Age Male	Area(ft²)
1	120150305032	68.20	32,696,116.75
2	120150301003	61.20	22,270,522.64
3	120150305011	62.50	18,911,036.26
4	120150301004	41.80	12,305,494.35
5	120150305022	68.00	1,329,833.24

Median Age: Women

#	GEOID	Median Age Female	Area(ft²)
1	120150305032	68.50	32,696,116.75
2	120150301003	59.70	22,270,522.64
3	120150305011	58.10	18,911,036.26
4	120150301004	63.20	12,305,494.35
5	120150305022	66.00	1,329,833.24

% Population of White (self-identified)

#	GEOID	NAMELSAD	Total Population	White Population	Area(ft²)
1	120150305032	Block Group 2	2,338.00	2,338.00	32,696,116.75
2	120150301003	Block Group 3	2,165.00	2,117.00	22,270,522.64
3	120150305011	Block Group 1	3,464.00	3,326.00	18,911,036.26
4	120150301004	Block Group 4	971.00	970.00	12,305,494.35
5	120150305022	Block Group 2	2,225.00	2,162.00	1,329,833.24

% Population Hispanic/Latino (self-identified)

#	GEOID	Total Population	Hispanic/Latino Population	Area(ft²)
1	120150305032	2,338.00	85.00	32,696,116.75
2	120150301003	2,165.00	*No Data*	22,270,522.64
3	120150305011	3,464.00	76.00	18,911,036.26
4	120150301004	971.00	*No Data*	12,305,494.35
5	120150305022	2,225.00	19.00	1,329,833.24

Veteran Population

#	GEOID	Veterans	Area(ft²)
1	120150305032	304.00	32,696,116.75
2	120150301003	319.00	22,270,522.64
3	120150305011	525.00	18,911,036.26
4	120150301004	201.00	12,305,494.35
5	120150305022	373.00	1,329,833.24

Median Household Income

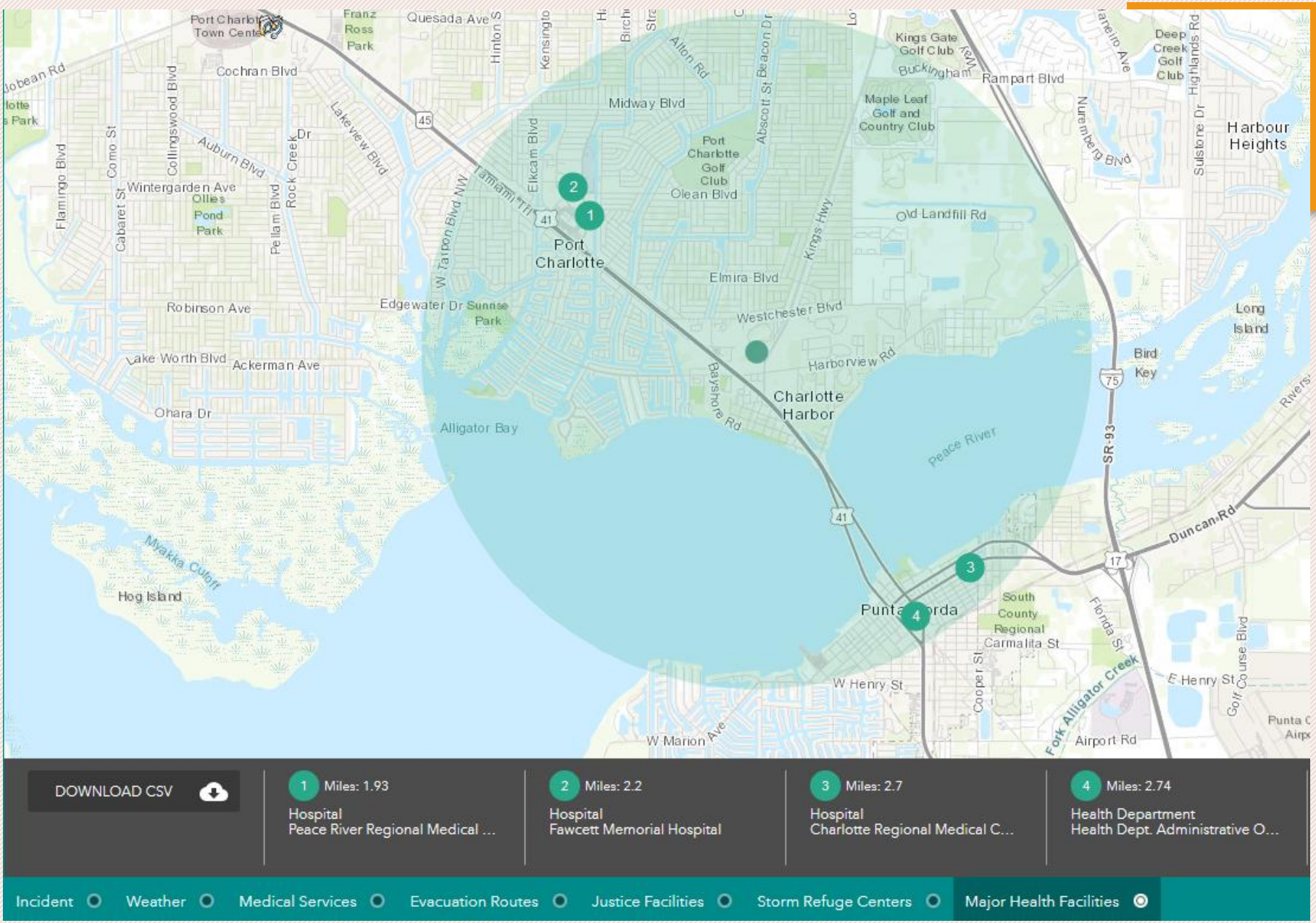
#	GEOID	Median HH Income	Area(ft²)
1	15000US120150305032	1,119.00	32,696,116.75
2	15000US120150301003	999.00	22,270,522.64
3	15000US120150305011	1,610.00	18,911,036.26
4	15000US120150301004	335.00	12,305,494.35
5	15000US120150305022	1,000.00	1,329,833.24

Incident Analysis

This tool allows the user to locate an incident and gather information from all the feature layers involved within a specified distance. The tool is displayed on the bottom of the map

- Define the incident location by selecting the point, line, or polygon selection tool
- Set the buffer distance by using the slider bar and manually inputting a value
- Click other tabs to view each layer result
- Click the red clear incident button to start over

Incident Analysis example with search for nearest health facilities.



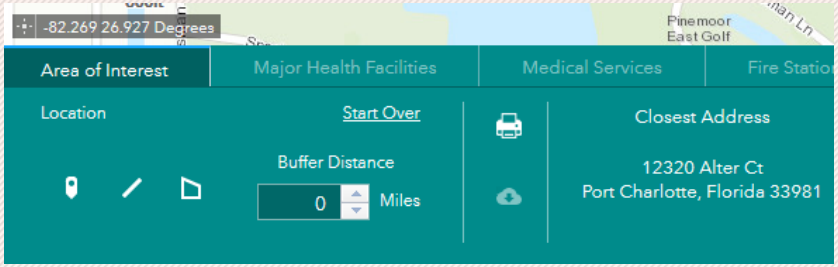
DOWNLOAD CSV

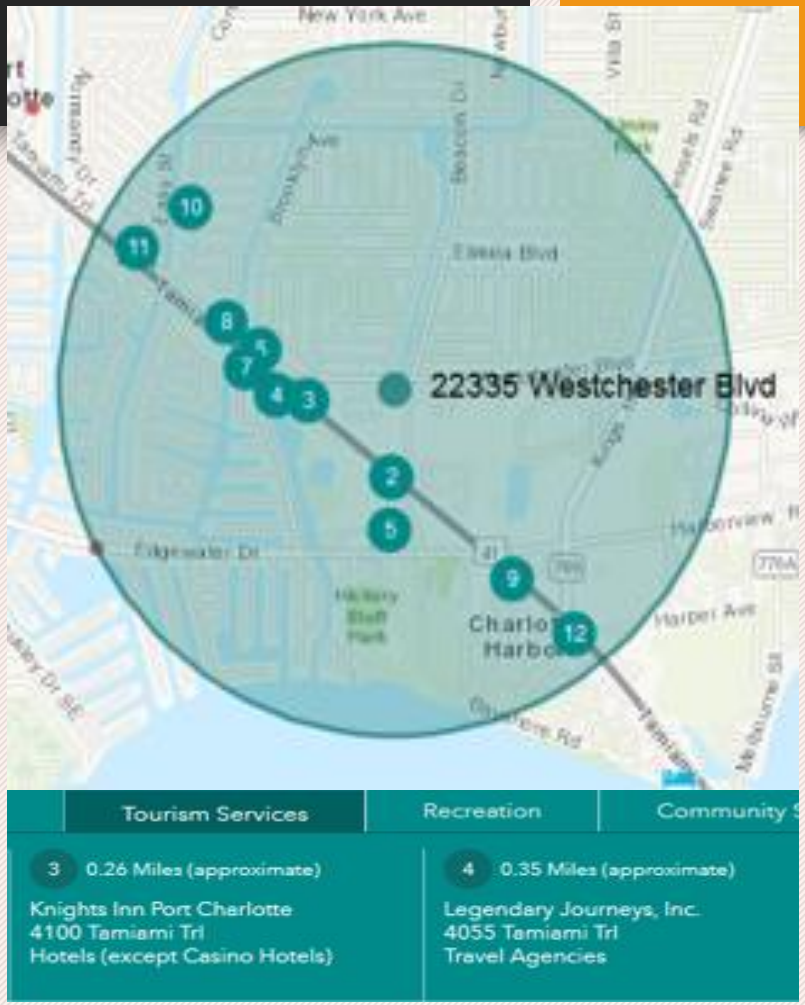
1	2	3	4
Miles: 1.93	Miles: 2.2	Miles: 2.7	Miles: 2.74
Hospital Peace River Regional Medical ...	Hospital Fawcett Memorial Hospital	Hospital Charlotte Regional Medical C...	Health Department Health Dept. Administrative O...

Incident ○ Weather ○ Medical Services ○ Evacuation Routes ○ Justice Facilities ○ Storm Refuge Centers ○ Major Health Facilities ◉

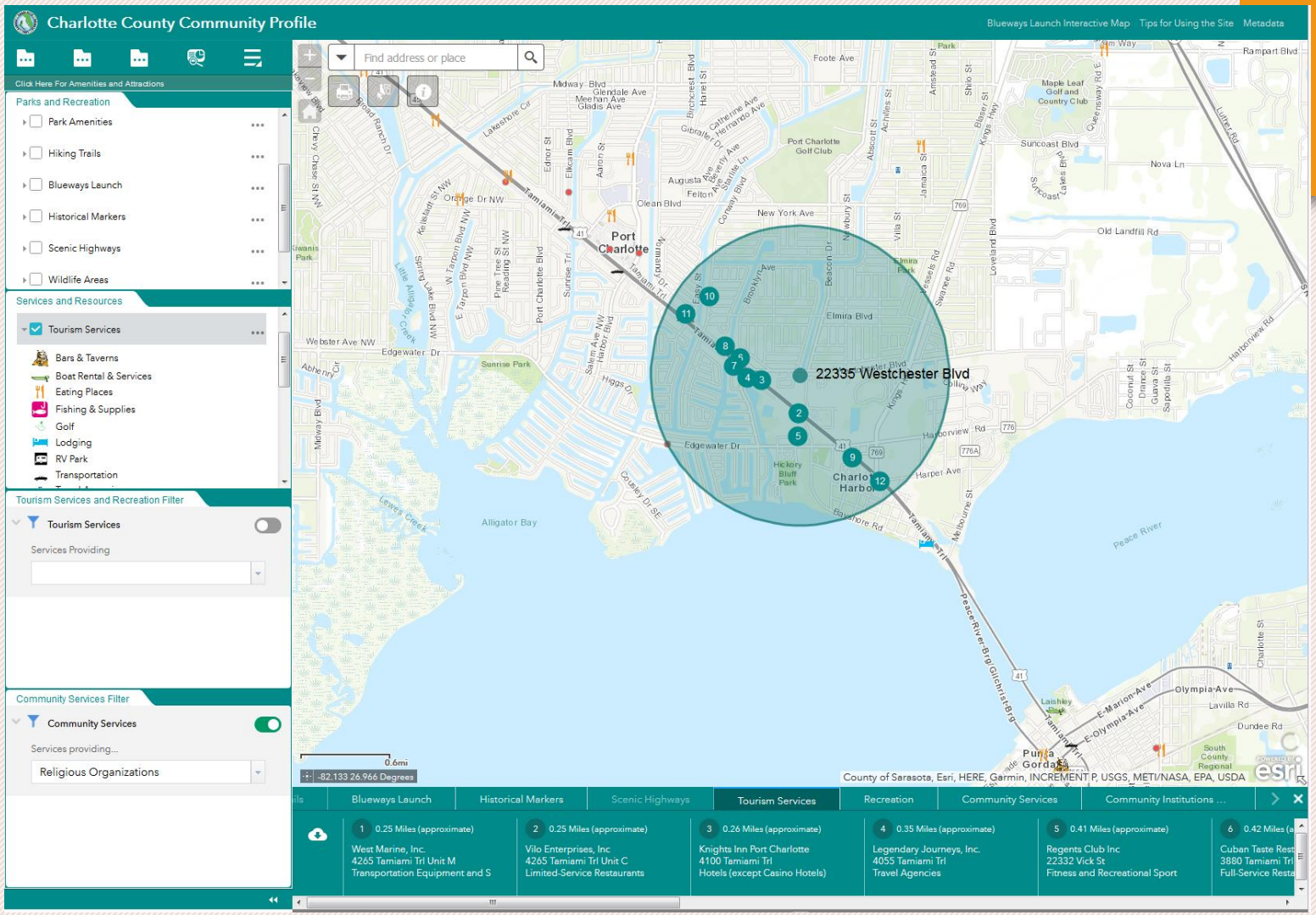
What's Around Me…

- This tool allows the user to select a desired location and gather information about the local area.



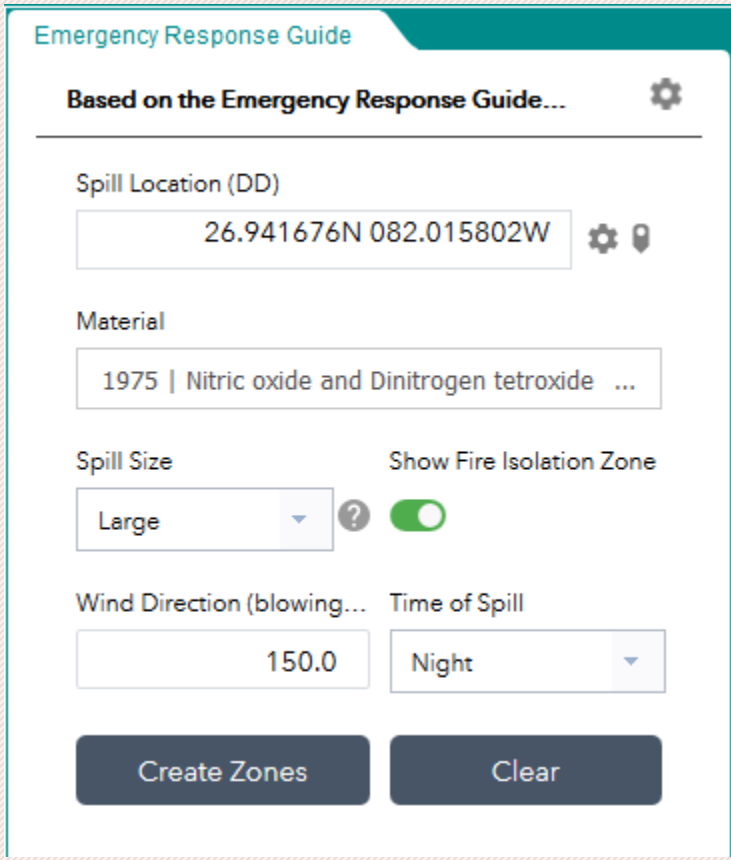


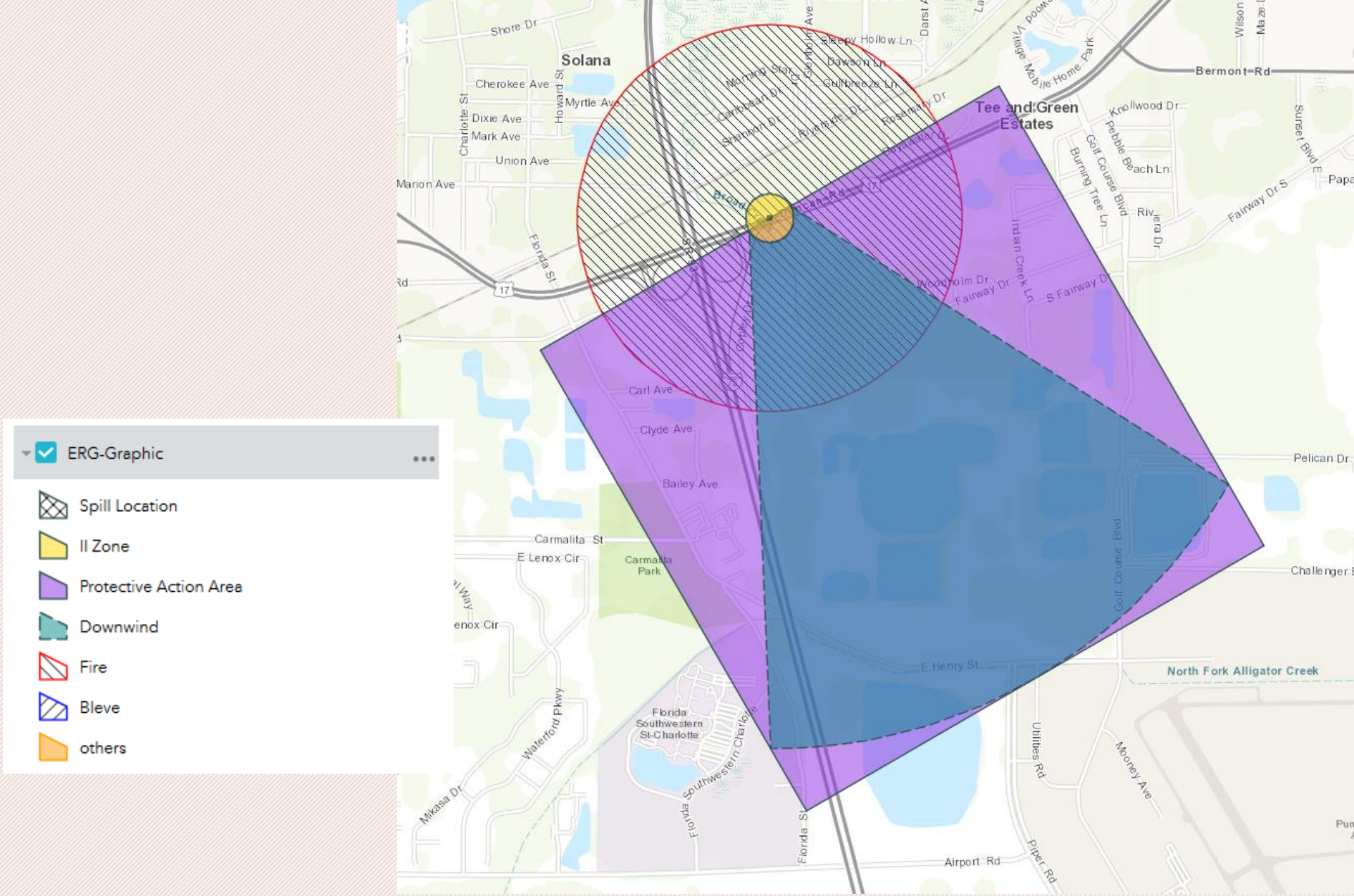
Sample map shows 'Tourism Services' within a user-defined radius from a user selected point.


Charlotte County Community Profile
Blueways Launch Interactive Map
Tips for Using the Site
Metadata
Click Here For Amenities and Attractions
Parks and Recreation
Park Amenities
Hiking Trails
Blueways Launch
Historical Markers
Scenic Highways
Wildlife Areas
Services and Resources
Tourism Services
Bars & Taverns
Boat Rental & Services
Eating Places
Fishing & Supplies
Golf
Lodging
RV Park
Transportation
Tourism Services and Recreation Filter
Tourism Services
Services Providing
Community Services Filter
Community Services
Services providing...
Religious Organizations
Find address or place
22335 Westchester Blvd
Port Charlotte
Alligator Bay
Peace River
Punta Gorda
Edgewater Dr
Tamiami Trl
Olean Blvd
Midway Blvd
Elmira Blvd
New York Ave
Harbor View Rd
Harper Ave
Bayshore Rd
Peace River Brg
Olympia Ave
Lavilla Rd
Dundee Rd
Old Landfill Rd
Suncoast Blvd
Nova Ln
Rampart Blvd
Foote Ave
Webster Ave NW
Sunrise Park
Hickory Bluff Park
Maple Leaf Golf and Country Club
Port Charlotte Golf Club
-82.133 26.966 Degrees
County of Sarasota, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA
Blueways Launch
Historical Markers
Scenic Highways
Tourism Services
Recreation
Community Services
Community Institutions ...
1 0.25 Miles (approximate)
West Marine, Inc.
4265 Tamiami Trl Unit M
Transportation Equipment and S
2 0.25 Miles (approximate)
Vilo Enterprises, Inc
4265 Tamiami Trl Unit C
Limited-Service Restaurants
3 0.26 Miles (approximate)
Knights Inn Port Charlotte
4100 Tamiami Trl
Hotels (except Casino Hotels)
4 0.35 Miles (approximate)
Legendary Journeys, Inc.
4055 Tamiami Trl
Travel Agencies
5 0.41 Miles (approximate)
Regents Club Inc
22332 Vick St
Fitness and Recreational Sport
6 0.42 Miles (a
Cuban Taste Rest
3880 Tamiami Tr
Full-Service Resta

Emergency Response Guide

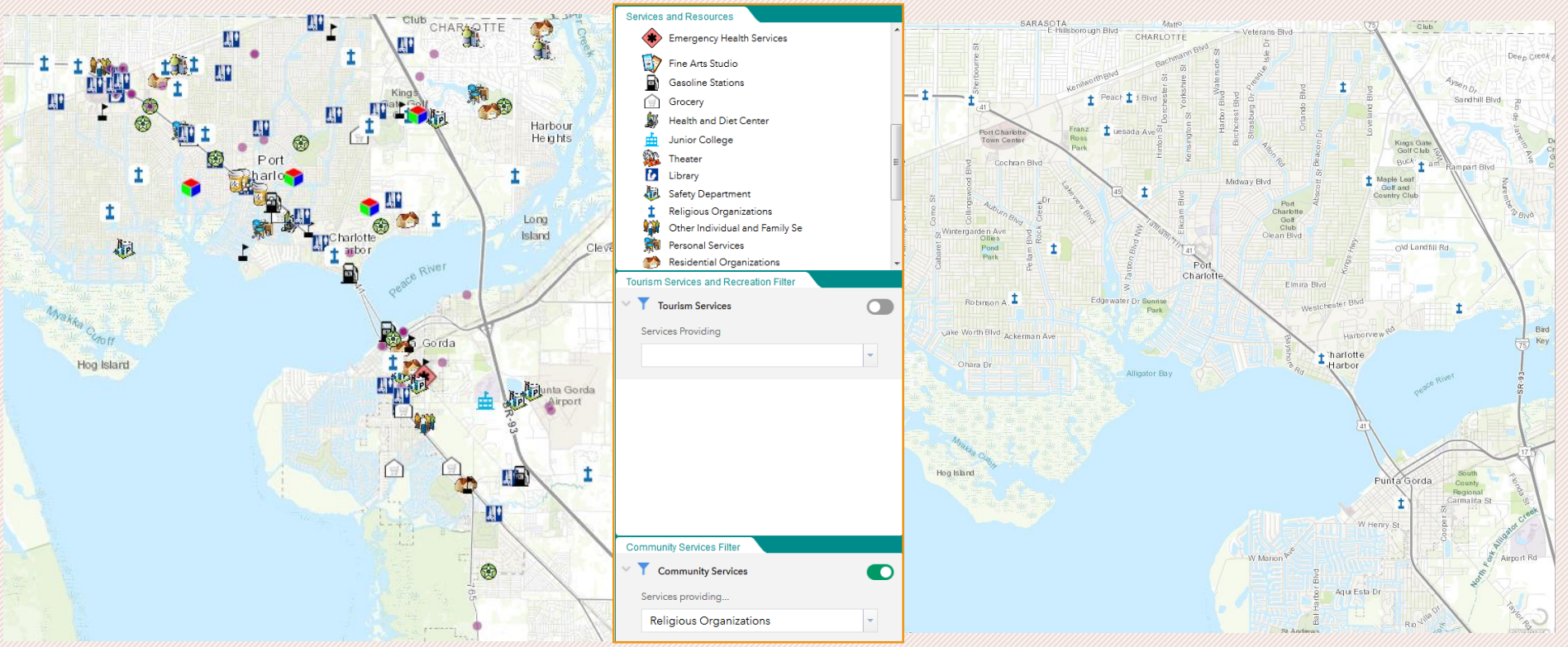
- Allows the user to select the location and type material spilled to determine the area of potential hazards.
- Create Initial Isolation Zones, Protective Action Zones, Downwind Zones, Fire Isolation Zones, and BLEVE Isolation Zones.
- The 2016 Emergency Response Guidebook is referenced once the spill material and type are selected.





Example results from sample run of Emergency Response Guide.

Layer List Filters



Filter results from a general data layer.
Example is filtering 'Community Services' for 'Religious Organizations'.

Online Interactive Sites

http://gis.cc.wmich.edu/charlotte/

- Please feel free to contact Kathleen Baker, project lead, at WMU kathleen.baker@wmich.edu with any questions regarding the results of this project.


Tutorial