Extending Asset Management Program Utilizing ArcGIS Online & Collector App

Presentation # 1850

http://arcg.is/26UFinM

Presented By:

Rocky S. Agbunag, MS GISP – Information Services Manager

Krista A. Marvel, GISP – GIS Systems Analyst

Extending Public Works Asset Management Program

SJCPWD ArcGIS Online

1 2016 Esri UC - Presentation #1850

In today's Information Age, providing an ability to share information is often a challenge for local government agencies.

St. Johns County Public Works is dedicated maintaining public trust by keeping an open government policy and accessible to the citizens it serves. This map series using Esri's **ArcGIS Online** platform expands the departments Asset Management Program and provides a form of collaborative web GIS.

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2 St. Johns County, FL

3 Gov't in the Sunshine

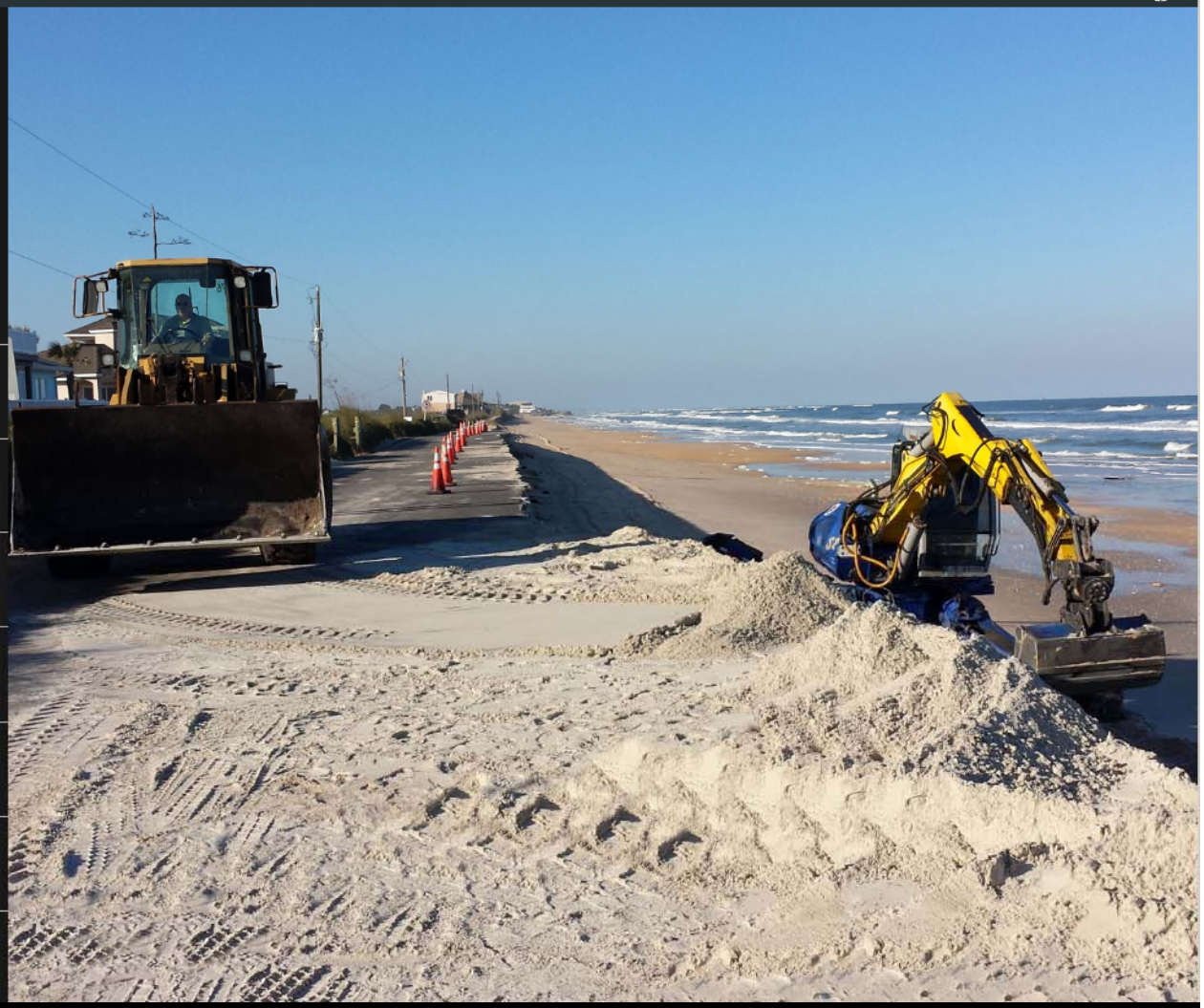
4 Drone To Map

5 Strategic Management

6 Justifying Needs

7 Ground Truthing

8 Summary



Extending Public Works Asset Management Program

SJCPWD ArcGIS Online

1. 2016 Esri UC - Presentation #1850
2. St. Johns County, FL
   - Home to St. Augustine - Nation's Oldest European City.
   - US Census Top 20 fastest growing counties.
   - Florida's #1 Public School District based on FCAT testing points.
   - Trip Advisor's Top 25 Beaches.
   - Livability's #4 in the 100 Best Small Town list.
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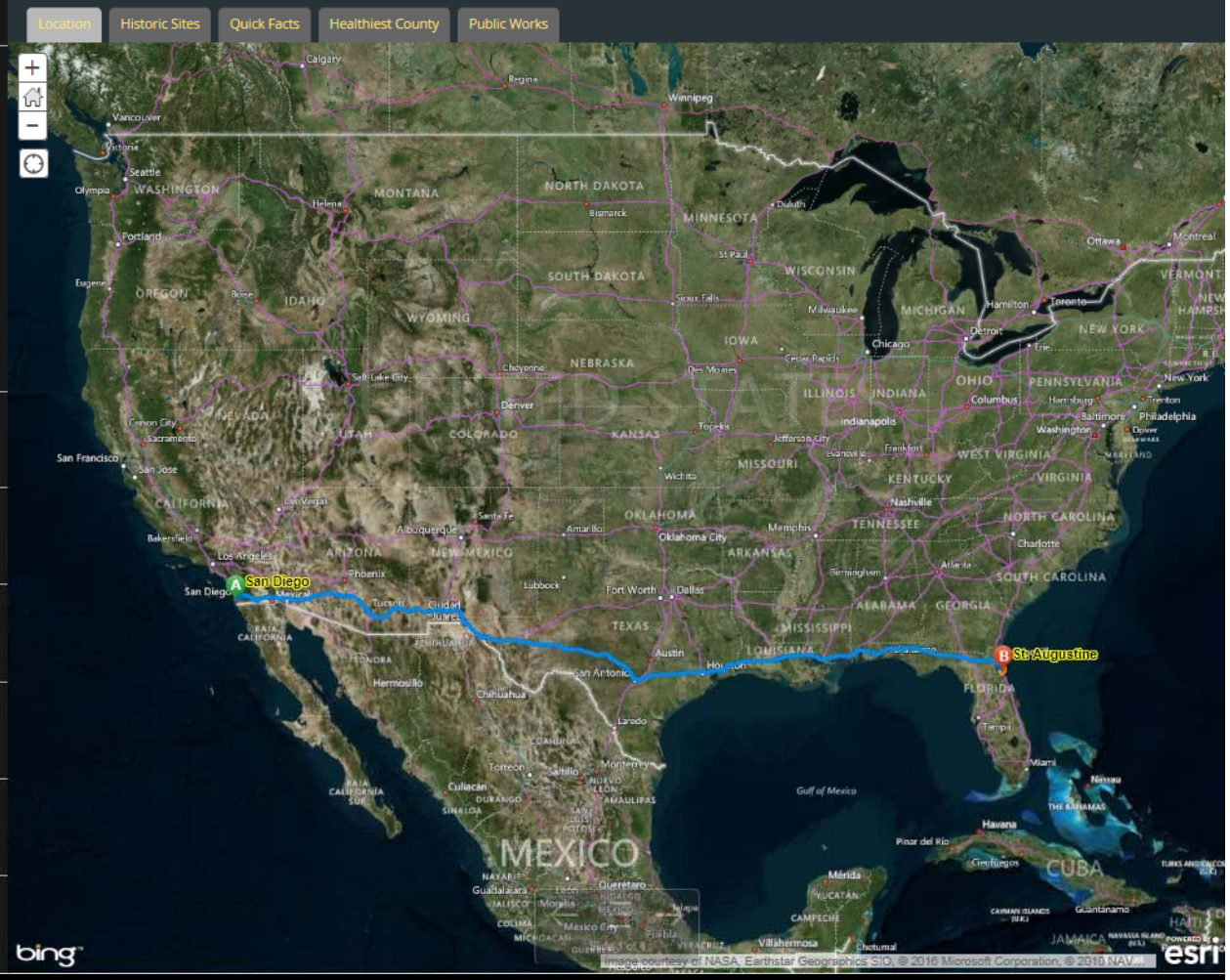

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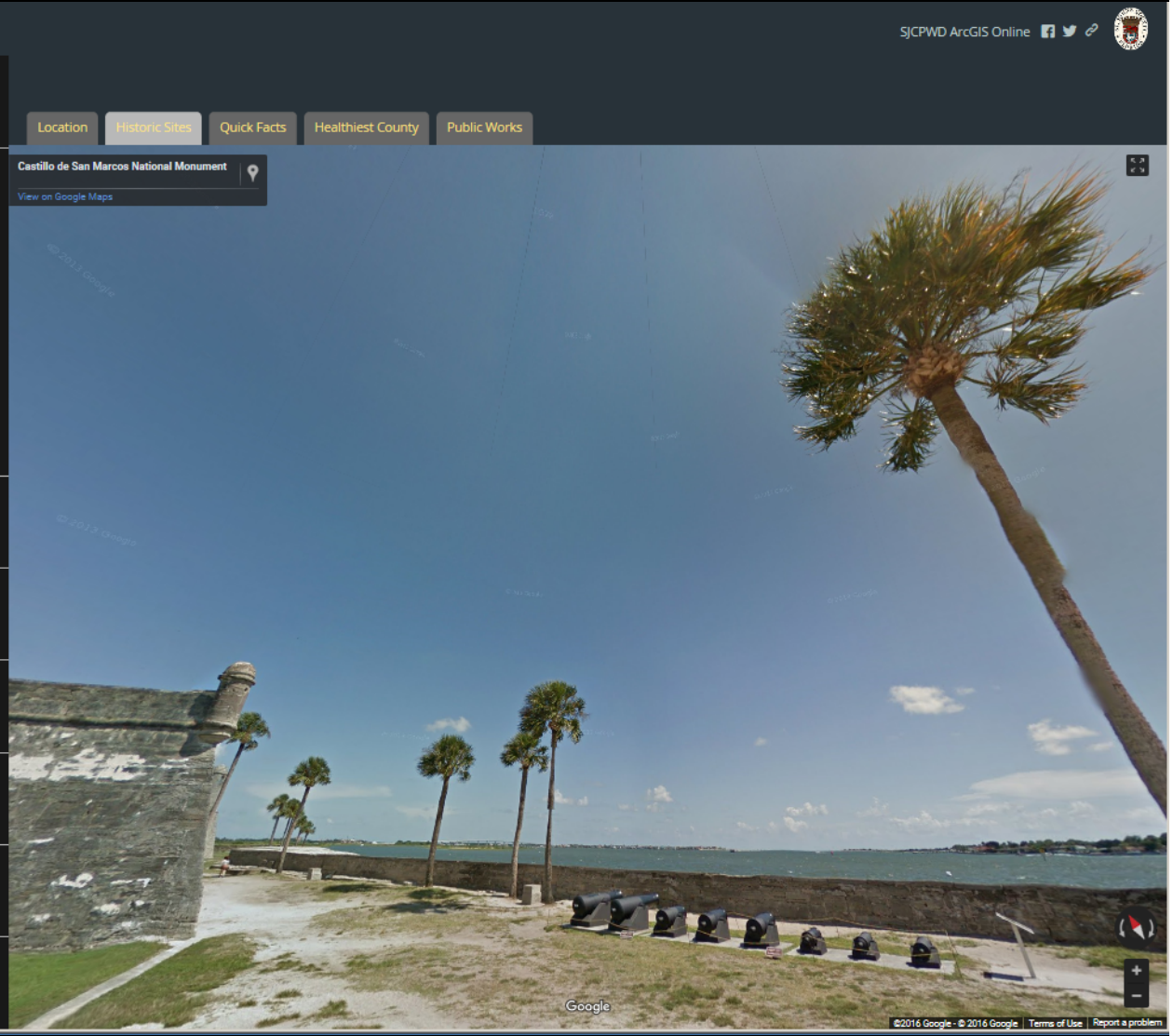

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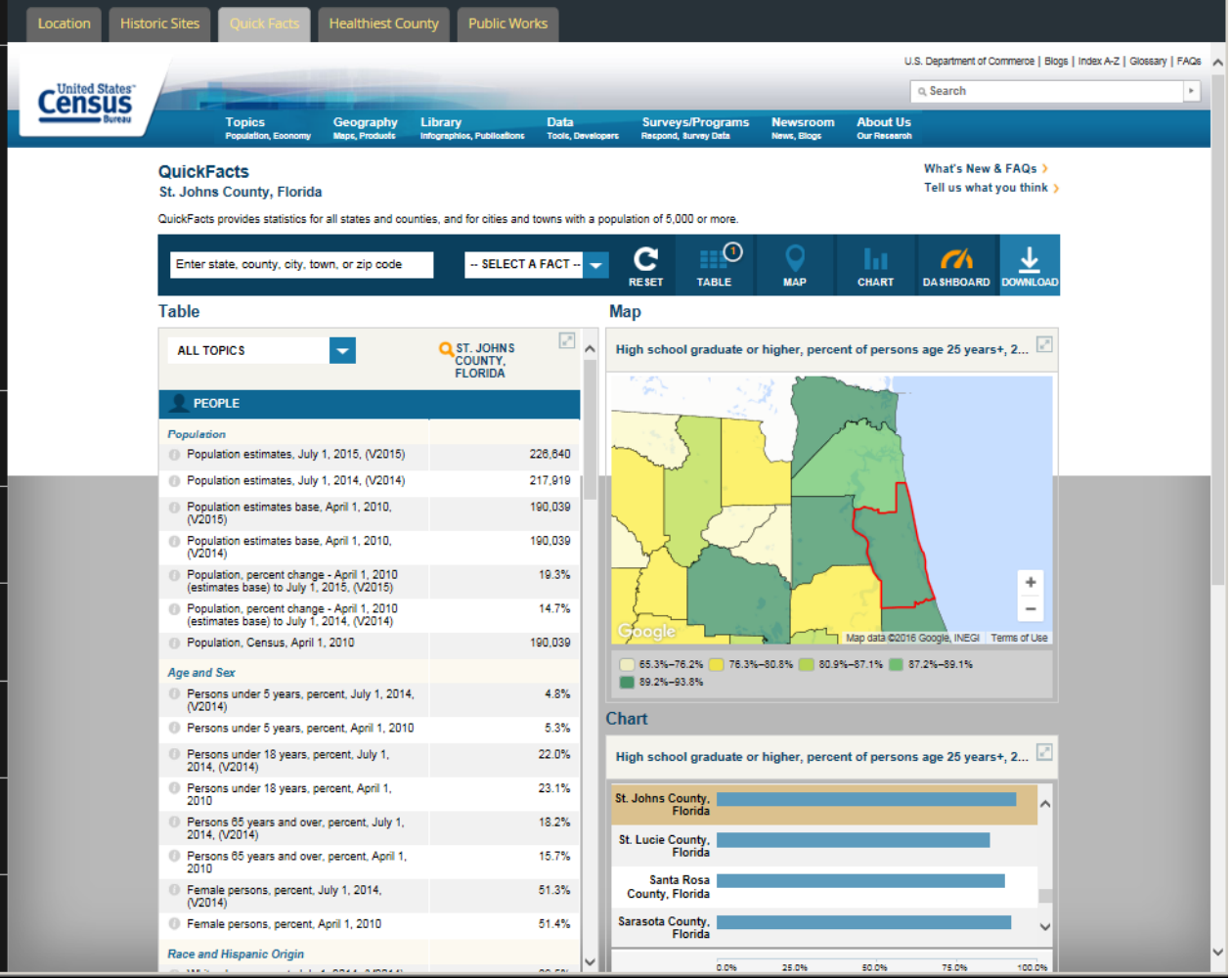

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Location | Historic Sites | Quick Facts | Healthiest County | Public Works

A story map

St. Johns County, the Healthiest County in Florida

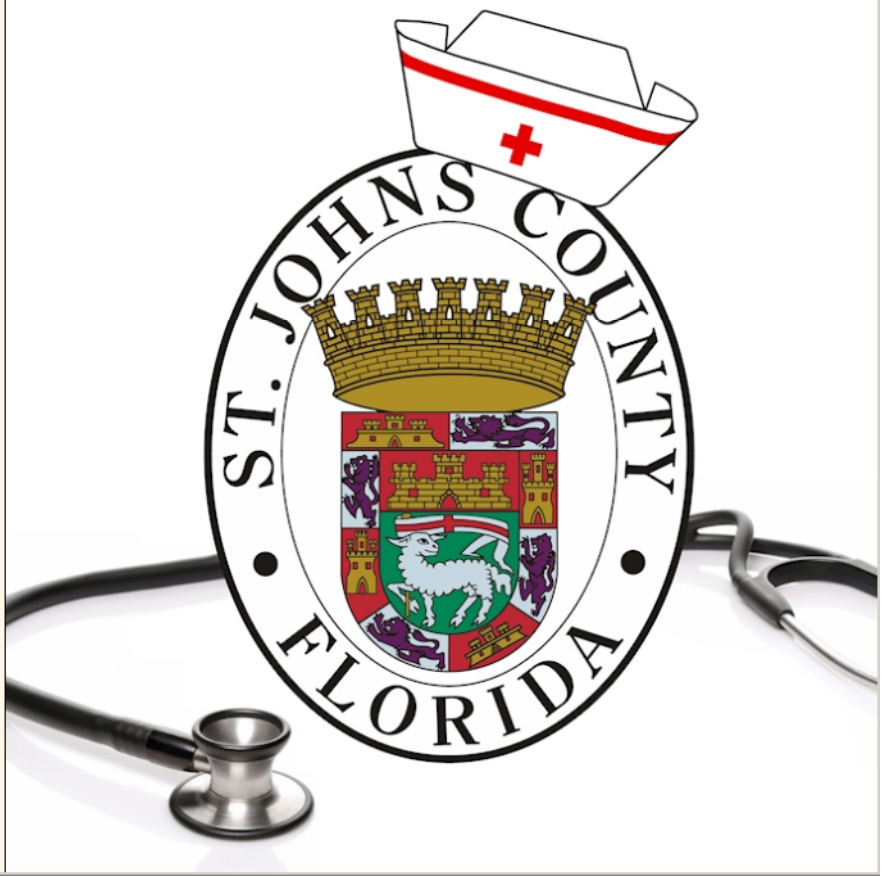
St. Johns County has been named the healthiest county in Florida for the fourth consecutive year by the University of Wisconsin Population Health Institute and the Robert Wood Johnson Foundation.

An annual report is published ranking the quality and quantity of life in each county using 30 factors that include education, income levels, crime rates, parks and community recreational facilities, proximity to grocery stores, the availability of health care, and the quality of air and water.

The Healthiest Counties in the United States

Explore the map and click on the marker symbols to see the healthiest county in each state according to the *2015 County Health Rankings* report and then click the link to view the detailed report.

(St. Johns County, Florida is shown as a blue



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About SJCPWD

The St. Johns County Public Works Department maintains, preserves and protects the infrastructure resource of the County in the most efficient and effective manner possible.

Divisions

- Engineering Services
- Fleet Maintenance
- Road & Bridge
- Solid Waste Management
- Transportation Operations

Acknowledgements

- Esri Special Achievement Award
- Cityworks Exemplary User Award

Assets Maintained

- Culvert Network & Cross Drains
- Stormwater Related Features
- Traffic Sign & Signal Network
- Pavement Management Conditions
- Road Related Features
- Transfer Station & Landfill Post Closure
- Fleet Object Records

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SJCPWD ArcGIS Online

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2. St. Johns County, FL
3. Gov't in the Sunshine
   - Open government & accessible to the citizens.
   - Florida has the most expansive open gov't law.
   - Best practices for sharing in AGO.
   - Sharable live authoritative oped datasets.
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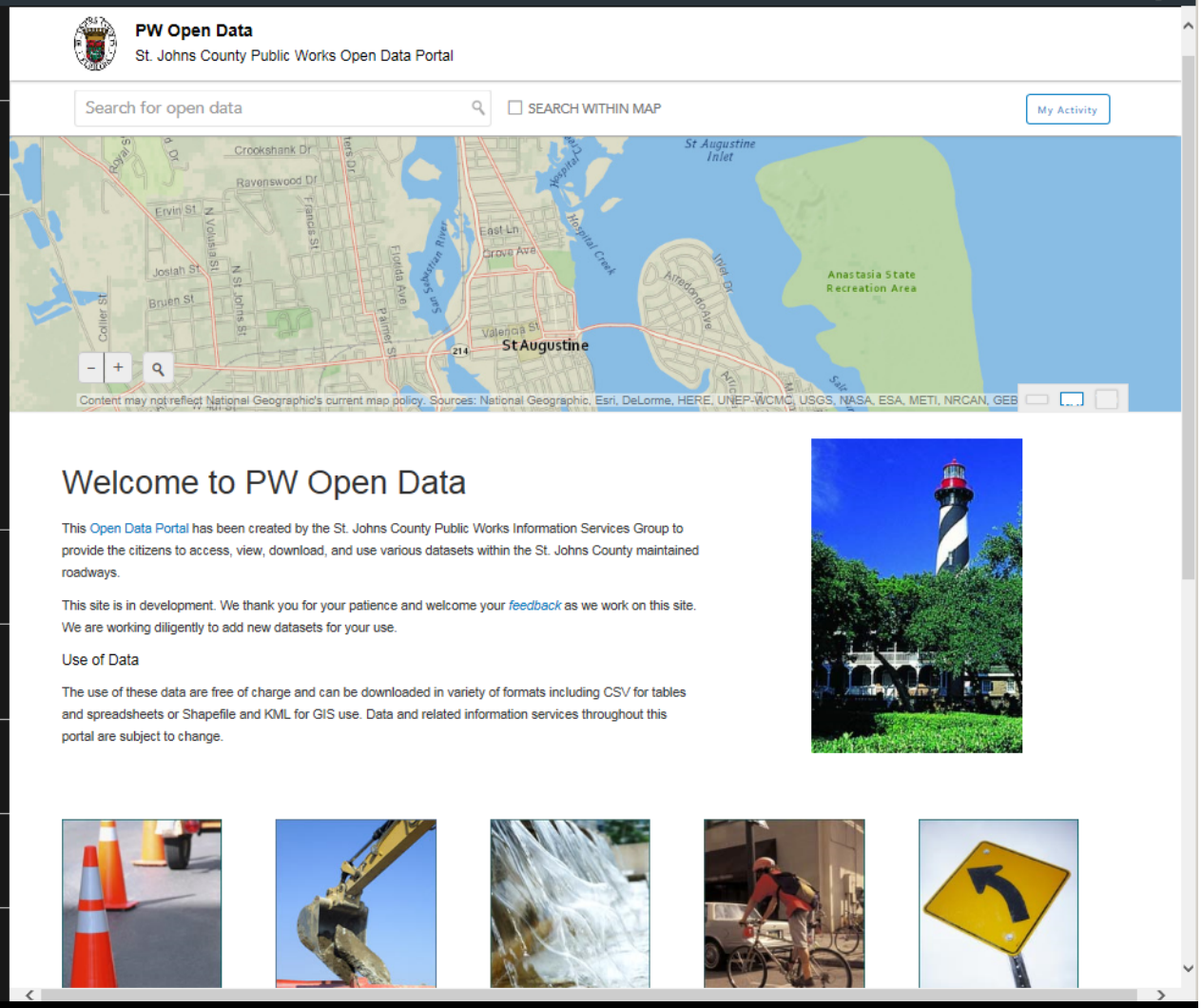

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4. Drone To Map

- Interactive presentation for community meeting.
- Integrating with new emerging technology.
- Affordable devices and easy to use.
- Processing raw imagery into orthomosaics with **Drone2Map**.
- Possible uses: event monitoring, inspections, & land analysis.

5. Strategic Management
6. Justifying Needs
7. Ground Truthing
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A Public Works Map Journal

CR 210 Widening Project

(Design & Permitting Phase)

The four-laning of CR 210 from Greenbriar Road to Cimarrone Boulevard is a distance of approximately 2.3 miles. The roadway will be rebuilt and widened as a typical four-lane rural with a right-of-way from 125ft to 155ft with intersection improvements at the Greenbriar Road and CR 210 intersection. This project is part of the **Shearwater DRI** proportionate share contribution.

Scroll down to view some details about this CIP by the St. Johns County Engineering Division

ROW Map by St. Johns County Land Management

Greenbriar Road to Shearwater Parkway

An East bound aerial view of CR 210 from Greenbriar Road to Shearwater Parkway. The right-of-way width along this

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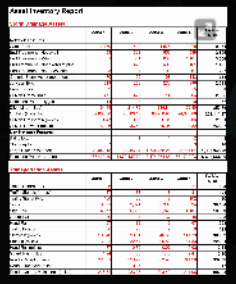
4. Drone To Map
5. Strategic Management
   - Gathering data/facts of ongoing activities & processes.
   - Aligning resources and actions mission, vision and strategy.
   - Strategizing execution of operational plans and action items.
   - Re-evaluate performance.
6. Justifying Needs
7. Ground Truthing
8. Summary

Vegetation Control Management Program

Summary | Activity Analysis | Vegetation Control Area Map | Mowing Area Map

Vegetative Related Maintenance

- Brush Cutbacks
- Tree Cuts
- Tree Trimming
- Mowing (Small & Large)



FY '11 - '15 Vegetation Related Activities

- Brush Cutbacks - 2,757 miles
- Tree Cuts - 4,594 each
- Tree Trimming - 29,727 each

St. Johns River

Slide 8 of 8

Esri, HERE, DeLorme, USGS, NGA, EPA, USDA, NPS | Esri, HERE, DeLorme, NGA, USGS, NPS

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SJC Public Works...

esri

Justifying a Pit

Abstract/Project Description
List of Requirements/Challenges
Process/Logic of Labor Report
Process/Logic of Spider Mapping Analysis
Impact on growth in North region of county
Describe that PW work is split into North and South

Background Information

Simms Pit History

Simms Pit was originally acquired by St. Johns County as a quarry for mainly coquina rock. Coquina is building material found in Florida that has been used for over 400 yrs. In the past St. Johns County used coquina to pave roads. Other materials were also dug here including hard pan and fill dirt.
(Black & White Imagery, 1999)

Coquina from Florida (By Wilson44691, Wikipedia 2008)

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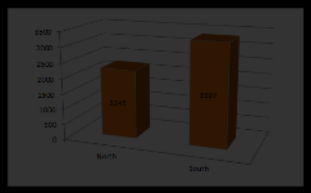
Justifying a Pit

(click to see Work Order locations)



Density of Work Orders (FY 2015)

(click to see Density of Work Order locations)

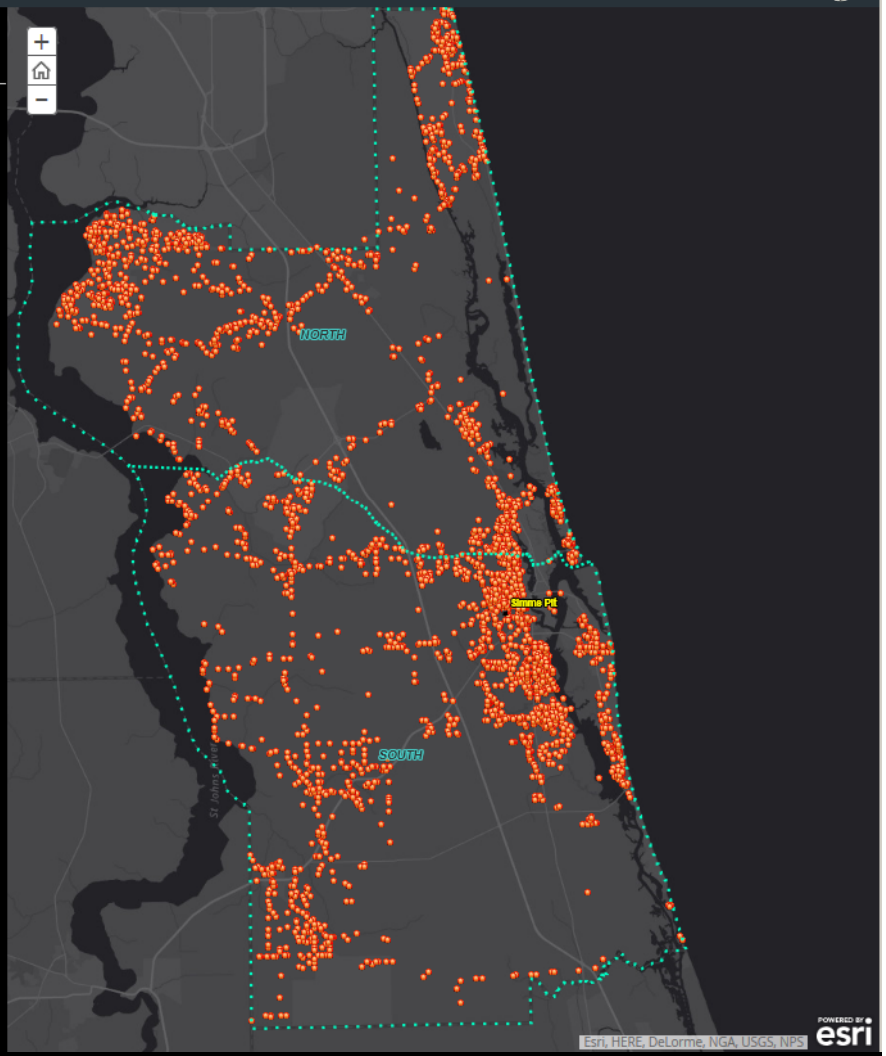
Distribution of Labor Hours

Initial analysis did not appear to support the justification for a new staging area in the north part of the county. After locating the work orders and looking at them spatially. It was important to dig a little deeper into the data.

The next step was to look more in depth at the work orders and the data being collected within the work order management system. This step required a more advanced query of the data. With the help of our partners, Jones Edmunds, the total labor hours for each work order were mapped, accounted for, and summarized in a report. (see main panel)

The report did not reveal the pattern in the data that was expected. The expectation was that we would see more labor hours being spent in the north side of the county, and that expectation was proven incorrect.

Spider Mapping



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- Extending efficiency for field data collection.
- Leveraging field workforce to improve / update data.
- Easy to deploy for inspections and report activities.
- Supports external GPS receivers for spatial accuracy (beta).

Enhancing Field Workforce

Collector Maps | Sign Collection | Evolving Technology | Asset Updates

SJCPWD Collector Group

Search maps

All | On Device

Automated Maintenance of Signs

5/25/16 | Tim (SJCPWD)

Repeater Pole Collection Map

5/25/16 | Tim (SJCPWD)

Baffle Box Inspection

5/26/16 | Tim (SJCPWD)

Barricade Locator

5/26/16 | Tim (SJCPWD)

Culvert Cross Drain Size Update

4/22/15 | Tim (SJCPWD)

Electrical Pull Box Inventory

1/27/16 | Tim (SJCPWD)

Missing Asset Collector Map

4/23/15 | Tim (SJCPWD)

Road Under Water Sign Location Map

5/26/16 | Tim (SJCPWD)

Sidewalks Inspection & Collection Map

5/26/16 | Tim (SJCPWD)

Street Light Inventory

10/7/15 | Tim (SJCPWD)

Traffic Beacon Location Map

5/26/16 | Tim (SJCPWD)

Traffic Signal Inspection Map

5/26/16 | Tim (SJCPWD)

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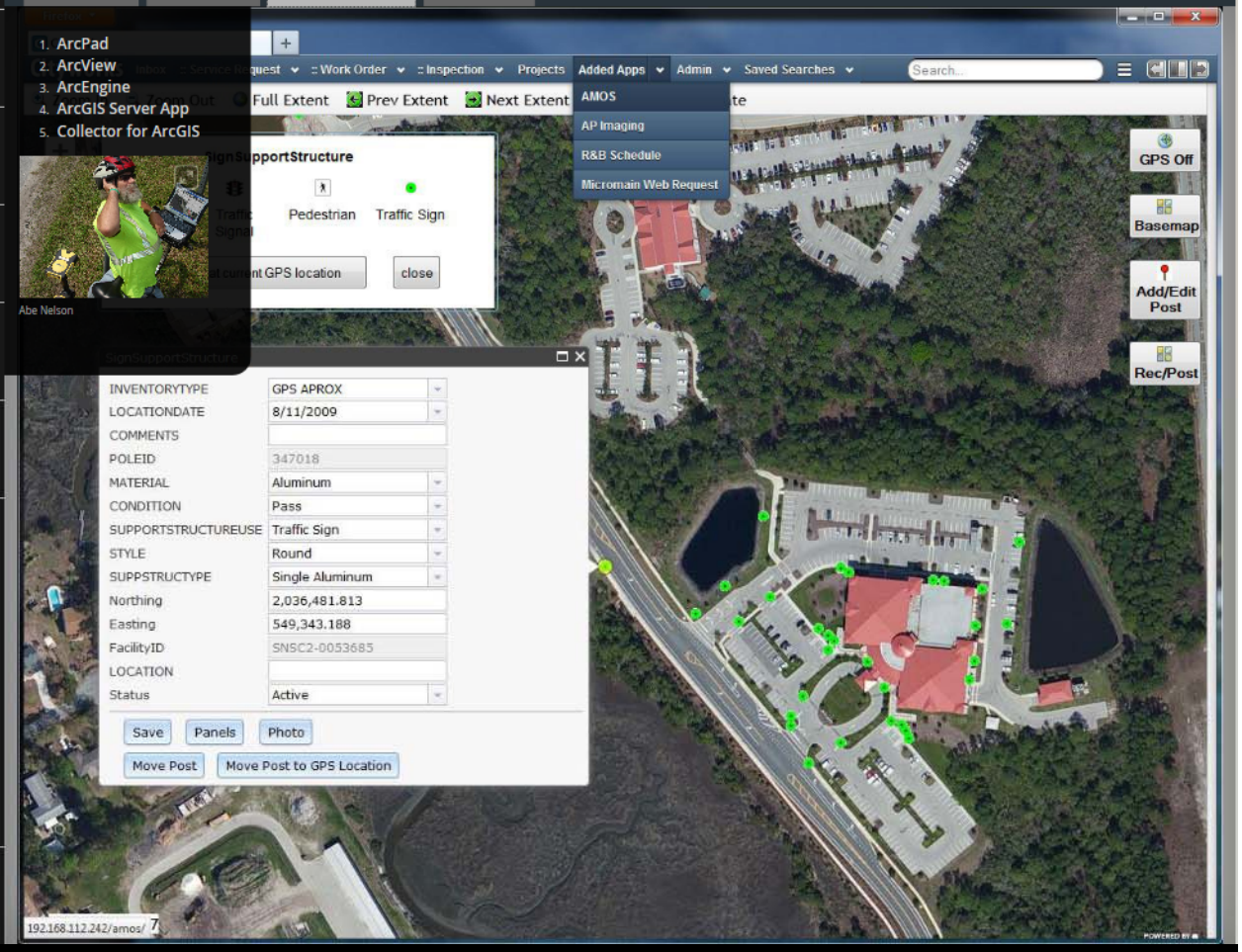
Enhancing Field Workforce

Collector Maps | Sign Collection | Evolving Technology | Asset Updates

1. ArcPad
2. ArcView
3. ArcEngine
4. ArcGIS Server App
5. Collector for ArcGIS

Abe Nelson



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Site Address:
AGO - http://sjcpwd.maps.arcgis.com
Main - http://www.sjcfl.us/publicworks

Contacts:
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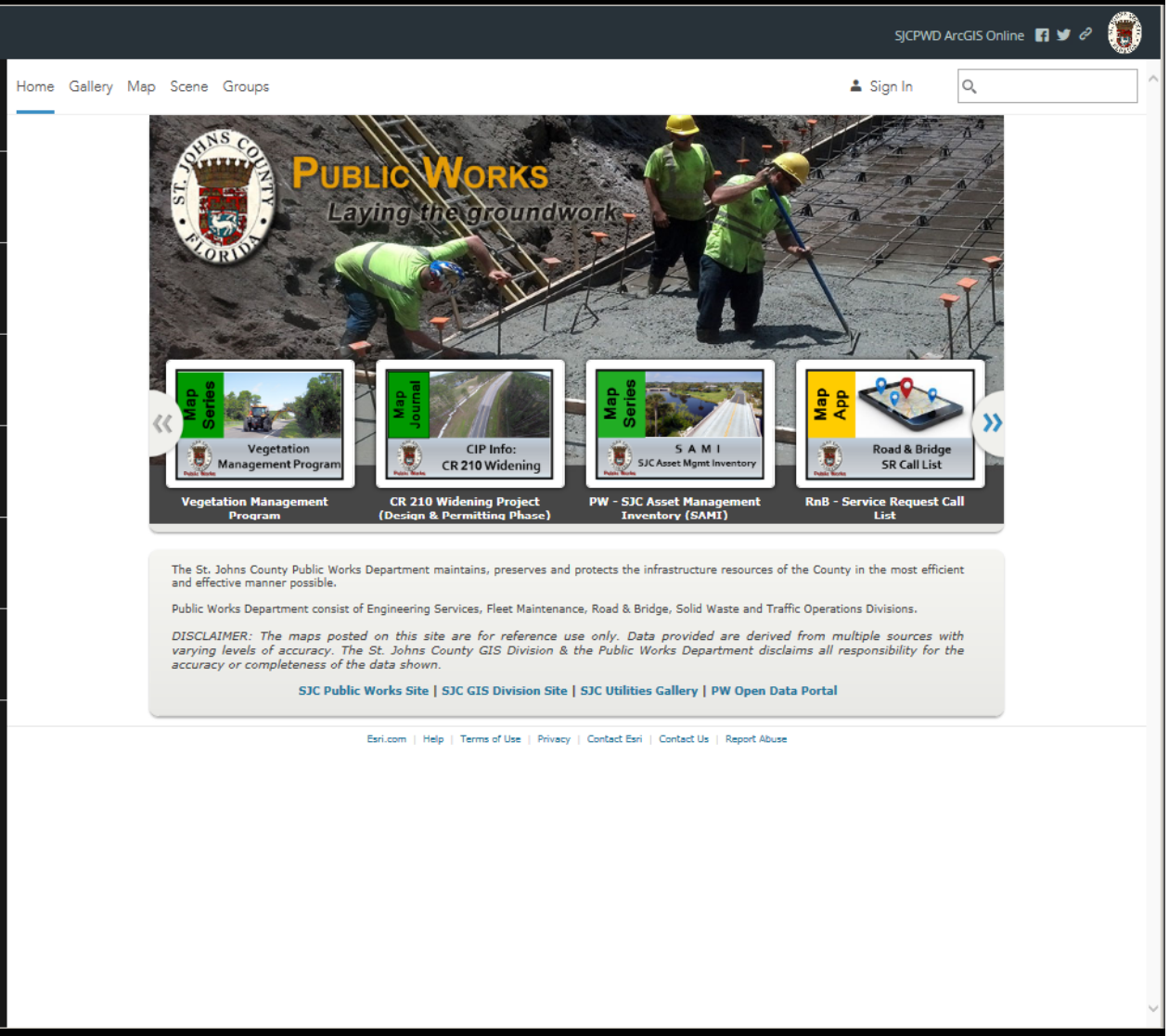
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