The Value of Digital Transformations in Water at JEA

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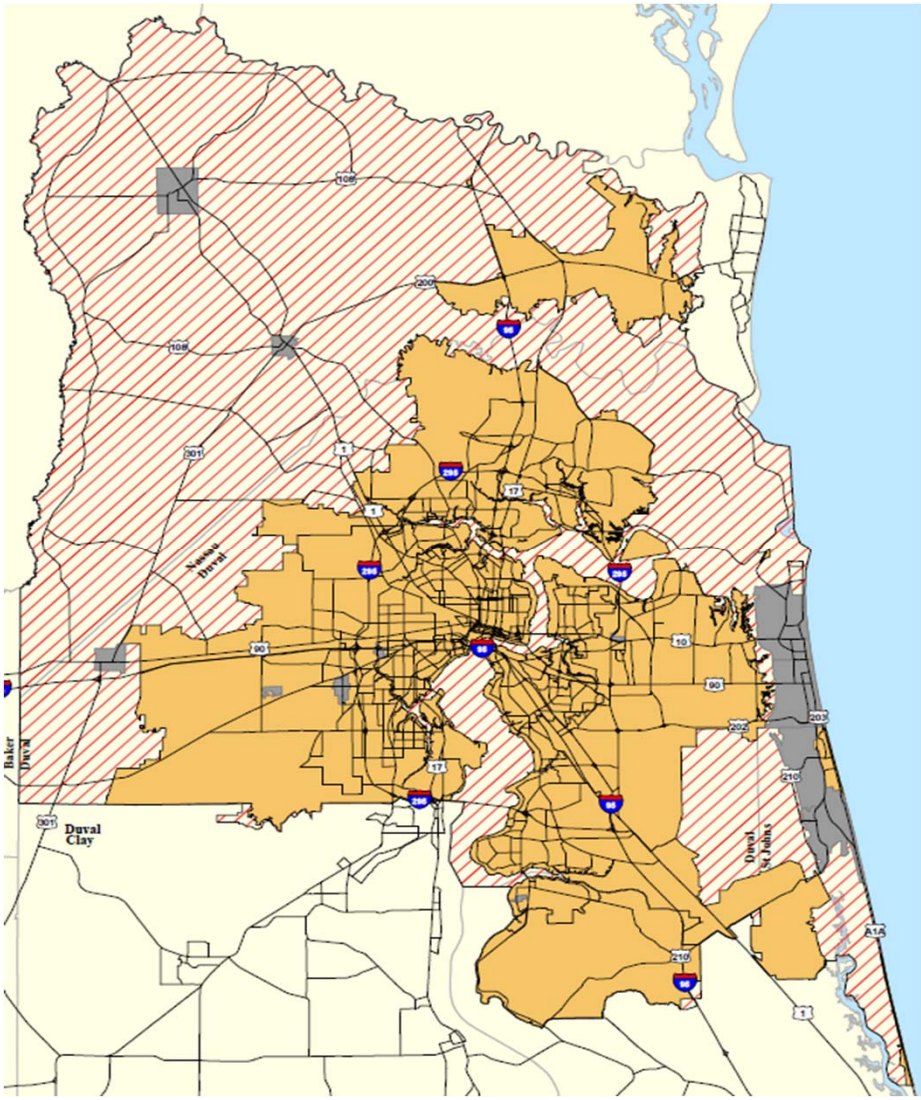
JEA Service Territory and Demographics

JEA, located in Jacksonville, Florida, is the eighth-largest community-owned electric utility company in the United States.

JEA's water wastewater system assets include

- 360,000 Water/Sewer Customers
- 1370+ km^2
- 8433 km of sewer collection pipe
- 10,548 km of water distribution pipe
  - 707 km is Reclaim water pipe
- 38 regional water plants
- 142 water wells
- 11 regional wastewater treatment plants
- 1500+ wastewater pumping stations



Challenge – Situational Awareness

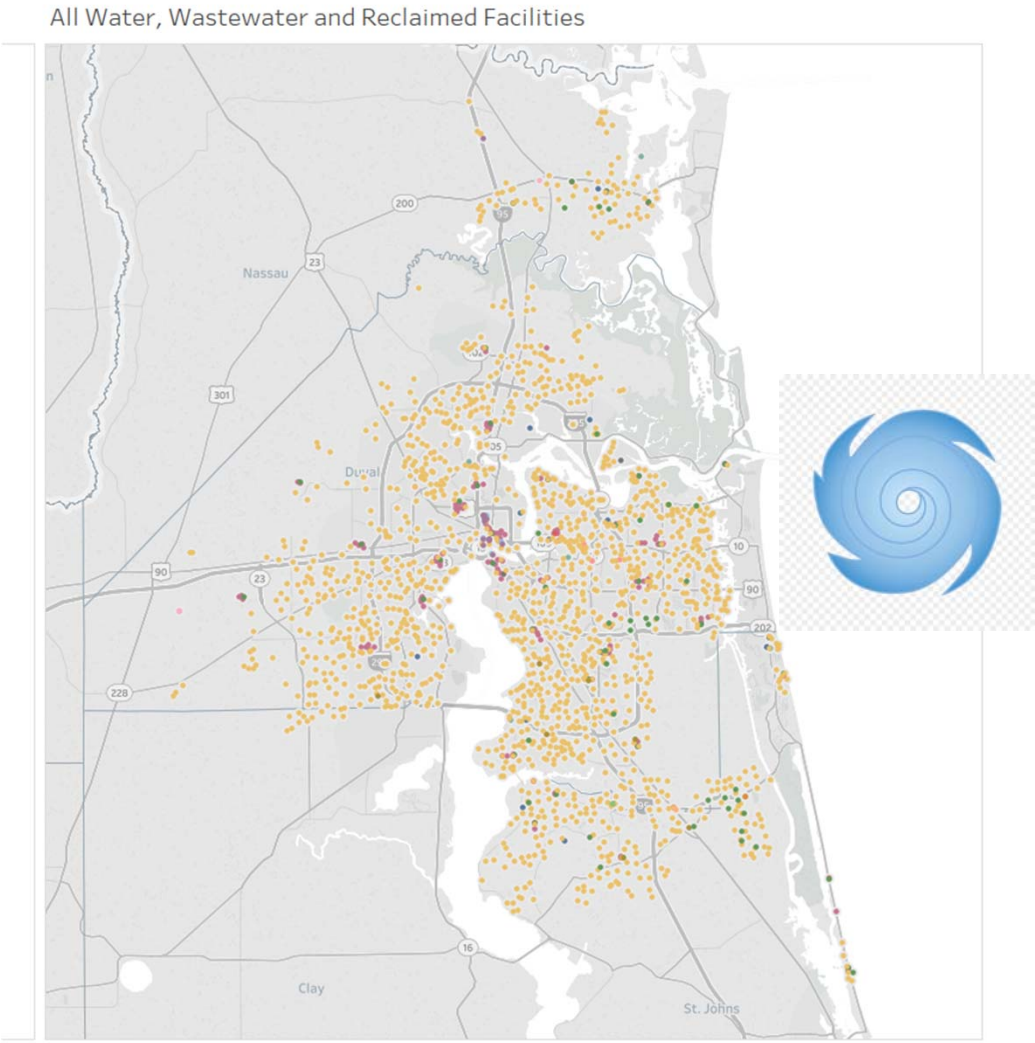
During a recent hurricane that impacted JEA's service territory, it became very clear that we needed a better way to visualize the water and wastewater asset conditions as a whole.

SCADA just wasn't enough.

Things we needed to know

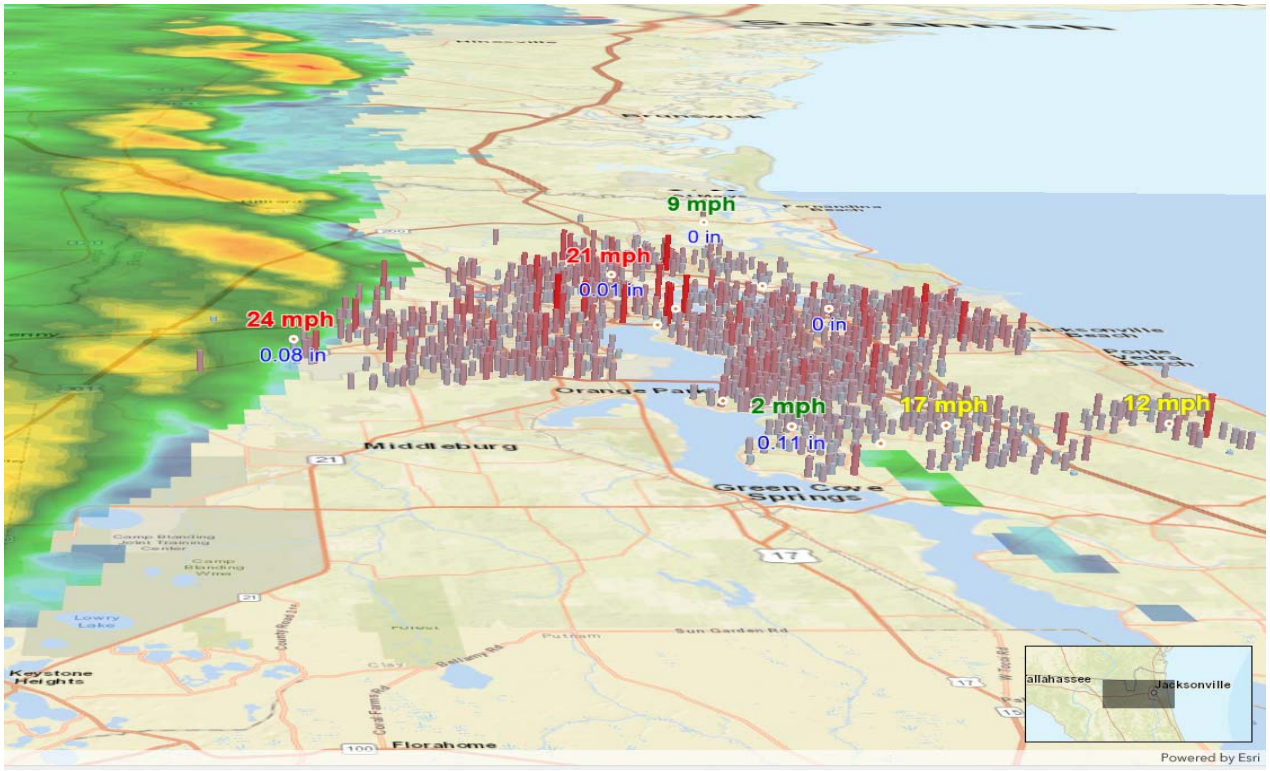
- What pumping stations were without utility power.
- Are weather conditions safe to send crews into the field.
- Which pumping stations to send crews to first.
- Which pumping stations had generators running and their fuel levels.

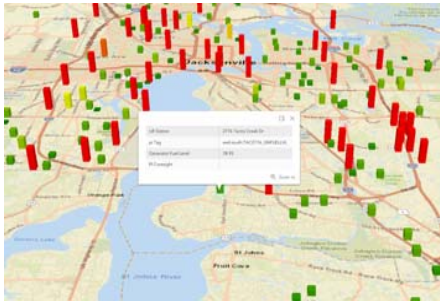
All this information had to be displayed on a map and be easily understood by members of the EOC (Emergency Operation Center) and other executives.



A.O.I.
Augmented Operational Intelligence

- Growing from the initial list of a few requirements, JEA's Data Lab team has developed a geospatial interactive 3D map that will display, in real time, discrete and continuous operational data of the W/WW assets throughout the service territory.
- The first release was just prior to the 2019 hurricane season.
- The majority of the information being displayed is being pulled from JEA's PI system.
- Some examples of the real time data that is available are
    - Pump station power status
    - Pump station well levels
    - Pump station generator fuel levels
    - Generator run status
    - Grid water pressures (500+)
    - Numerous weather stations
    - Water/wastewater GIS layers





http://gisdv/aoi/

How To Visualize the Data?

- Open source, Standards based, Cross-platform…
- Easy to integrate

- JSON – Javascript Object Notation (cica 2000)
- Location is key

  GeoJSON - Supports Geometry

- Supported by many

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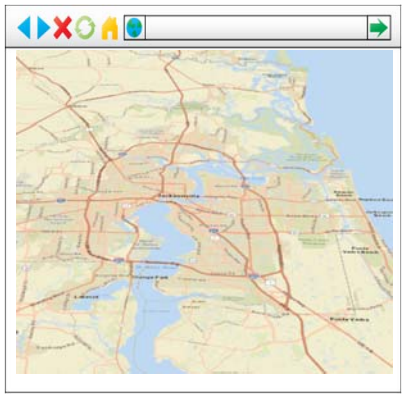
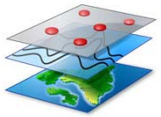
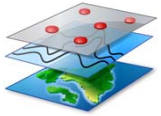
High Level Architecture

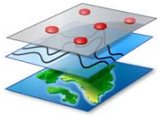


AOI



{Jea:GeoJson} Services





Restful api

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The Value of Digital Transformations in Water at JEA

Challenge

Situational awareness of 1000's of remote water and wastewater assets throughout a very large service territory

Solution

Incorporating OSIsoft PI technology including PI AF and PI Web API as the backbone to a 3D interactive map to display real-time data

Benefits

Increased situational awareness during extreme weather events as well as exposure to JEA's business of OSIsoft PI technologies and capabilities

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