Managing a Water Utility requires keeping costs low, customer service high, and solving aging asset rehabilitation. St. Johns County Utilities accomplished our goals by mobilizing our information and our workflows. We empower our staff and connect with customers through service applications, and defeated two hurricanes along the way. Mobile Information’s success initiated using Esri Insights to identify water infiltration for prioritizing rehabs and identifying pump performance improvements.

We are seeing the power of GIS to empower managing people and what gets done.

St. Johns County Utility Department
http://sjcutilities.maps.arcgis.com

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Cityworks: Mobile Asset Management

Department Wide
- Lift Stations, Lines & Taps, Compliance, Warehouse, SCADA, Water Facilities, Wastewater Facilities, Customer Service, Administration

Asset Management Functions:
- Customer calls managed by Service Requests
- Maintenance tasks managed by Work Orders
- Asset conditions managed by Inspections
- Resources by Labor, Equipment & Material
- Administration through Reports, Charts & KPIs
- Warehouse & Inventory managed by Storeroom

Tracking to Managing Transition
For Assets and People
Better Business is Mobile GIS

- Collaboration
- Looking at the Same Thing
- Chained SOPs
- No Data Transfers
- Utility System and all Layers.
- All smart phones get Mobile GIS.
- Contractors are get accounts.
- Collector Powers the Mobile Worker
Objective:
- Improve Line Break Response
- Improve Customer Advisories
- Field Response. Reduce Steps
- Improve Capability and Service

Implementation:
- Line Break Identification
- Network, Valve & Meter Tracing
- Public & FD Advisory Publishing
- Reverse 911 Integration
Mobile Grows: https://sjcutilities.maps.arcgis.com
Hurricane Matthew. Go Mobile or Don’t Go Home.
Response and recovery tracked through Cityworks and mobile GIS, and recording all asset damage and repairs. FEMA and insurance reporting directly from Cityworks and GIS.

Mobile GIS: Sewer Overflows and Sampling, Water Advisories, Damage Assessment

Lessons Learned:
- Expand technology to operational awareness, share information quickly and reduce noise.
- Improve Call Center and Operations Work Orders. Create Dispatcher to coordinate response.
- Improve power outage and critical information map services.
Utility Work Order Management
Hurricane Irma. Lessons Learned, Applied & Results
Hurricane Irma Mobile Solutions

- A **managed** response and recovery through between Call/Dispatch Center, Operations, Management and EOC Command Center providing situation-aware decision making.

- Power: 10% day 1, 25% day 2, 50% day 3, 75% day 4, 10% day 5.

- Manually operated our sewer collection’s 350 stations through heavy equipment, available staff and contractors.

- Mobile Apps: Lift Station Power, Work Orders, Service Requests, SCADA, Vehicle Locations, Water & SSO Advisories, Damage Assessments, Customer Response
Esri Insights, A Platform for Better Business

- A mobile, collaborative platform that empowers engaging analysis that encourages data exploration to quickly step through inquiries and answers.

- Operational Awareness

- Measure Initiative Effectiveness

- Manage at the 40,000’ level

- Stakeholder Engagement

- Integration Platform: GIS, AMI, SCADA, Hydraulic Modeling, CIS, LIMS, WIMS, Finance ...
Esri Insights: System Design

- Implement Portal Platform
- Implement Insights 1.2
- Upgrade Insights to 2.2
- Implement DataStore
- Integration with ArcGIS Server
- Connectivity with Enterprise Geodatabase and other databases.
Esri Insights Business Solutions

- Lift Station Pump Performance Analysis
- Pipe Inflow & Infiltration Analysis
- Capital Rehab Projects Analysis
- Cityworks Analytics & Esri Insights Beta.
- Real Questions:
  - Treatment facilities maintenance and Lift Station Division support?
  - Velocity reports for materials?
  - Manhole rehabs and budgeting?
Insights: Pump Performance Analysis

- Automated analysis of lift station pumps and their run times and high usage.
- Pump on/off times from SCADA converted into 1’ groupings as all, some or no pumps on.
- Spatially filtered account consumption table using the lift station collection basin.
- Create a variety of cards that show all the necessary information for analyzing lift station pump run-times.
- All the necessary information is in one place, making analysis more efficient.
Insights: Inflow & Infiltration Analysis

- Automated Statistical Analysis
- Operates on some assumptions of average dry/wet period flows
- Uses statistical distributions to smooth the data out
- Rainfall data collected from WIMS DB
- Inch Diameter Mile Spatial Summary
Insights and Cityworks Analytics: Manhole and Sewer Main Rehab Projects and Budget Planning

- Manholes Rehabilitations
- Sewer Main Rehabilitations
- Inspection Scores
- Rehab Schedule Progress
- Risk Analysis: Age, Material, Pump Proximity, Force Main Proximity...
Facility assets impact operations, expertise and scheduling.

Management level review of maintenance, repairs, costs, crews to engage and discover through data.

Configure Cityworks Analytics on Esri Insights.
Warehouse and Operations store $1,300,000 of utility materials on average each day, requiring receiving, transferring and issuing.

New Manager with new approaches, requested stock velocity report, and reports to show material usage, and frequency and type of transactions.
Insights & Cityworks Analytics: Material Velocity, Stock Quantities, Frequency & Quantity of Use
Insights: Pump Performance Analysis
Insights: Inflow & Infiltration Analysis
Insights and Analytics: CIP Manhole and Sewer Main Rehab Projects and Budget Planning
Insights and Analytics: CIP Manhole and Sewer Main Rehab Projects and Budget Planning
Insights & Analytics: W/WW Treatment Facility Maintenance Repairs and Lift Stations Division Support
Better Business.
Mobile Response for Solutions and Insights in Water Utilities

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