Implementing an Enterprise Asset Management System and Mobile Solution

St. Johns County Utilities’ growth and expansion required implementing a mobile GIS enterprise Asset Management System (Cityworks), improving management of work order, call-center, asset, expense, storeroom, inspection and fleet logistics supporting solutions for reliability, demand, efficiency, and planning.

Maintenance, operations, compliance and development staff use office, field and mobile devices to manage expenses, inventory, collaboration, scheduling, capital improvements and financial stability. Topics include steps, lessons learned, results and further development.

St. Johns County Utility Department
Cityworks 2014 Exemplary User
Karri Thomas, kthomas@sjcfl.us
Tom Tibbitts, ttibbitts@sjcfl.us

July 2015
St. Johns County Utilities

- Water/Wastewater/Reclaim Service
- 40,261 Customer Accounts
- 157 Employees
- High Growth Rate and Variations
- Expansion and Reinvestment Planning
St. Johns County Utilities

- 8 Water Treatment Plants (27 mgd)
- 11 Wastewater Treatment Plants (14 mgd)
- 336 Liftstations
- 747 miles of Water Mains
- 550 miles of Sewer Mains
The Challenge: Aging infrastructure, fast-changing population patterns, changing technologies, plus the increased demand for reliable and efficient systems are driving greater investments in infrastructure.

- Direction for a Developing Utility
- Asset Management System (AMS)
- Enterprise Asset Management System (EAMS)
Karri Thomas, GIS Analyst

- Implementation of AMS
- Design of the GIS and AMS
- Using the AMS
- Real World Examples of AMS
- Warehouse, Inventory and Storeroom
- Going to 2014
Implementation of AMS

- Going To Cityworks
- Divisions, Field Devices
- Work Orders
  - 488 Work Order Templates
  - 71,426 Work Orders
  - 2,528 Active Work Orders
- Call Center
- After Hours Call Center
Design of the GIS and AMS

- GIS Data Model
- Geodatabase Design
- AMS Design
Using the AMS

- Complete WO live in the Field
- What it is like for them to use it
  - Remote Assistance
- Divisions are working together
- Paperless
- Staff notices of needed updates
Real World Examples of AMS

Cost and labor estimates – Labor and material cost estimates are linked to each work order and asset.

- Our Management Team now have the ability to request detailed financial reports
- A recent request from our financial analyst looking to obtain the average annual cost of maintenance per liftstation we were able to provide over 330 data observations and obtain an average cost per liftstation basis

<table>
<thead>
<tr>
<th>Summary</th>
<th>Cost</th>
<th>10 Year Cost</th>
<th>Present Value</th>
<th>Interest Cost</th>
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<tr>
<td>2014 Average Liftstation Maintenance</td>
<td>$2,468</td>
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<td>Total Maximum Cost of Moultrie Liftstation Rehab</td>
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<td>Total Cost of Liftstation Rehab and Maintenance</td>
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<td>$148,364</td>
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Real World Examples of AMS

All of our easements and agreements are mapped with hyperlinks to the documents, so that field crews know if we are right-of-away to right-of-away or manhole to manhole with restoration responsibilities.
Real World Examples of AMS

- Galvanized Water Main Replacement Impact on Customer Calls
- Pump Information for Water Modeling
- Directional Boring, Miles by Diameter of Pipe

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<tr>
<th>Install Date</th>
<th>Warranty Date</th>
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Real World Examples of AMS

- Monthly Corrections for Incorrect GL Codes
  - Financial monthly reports
- Line Replacement CIP Tracking
  - Distribution, Warehouse and Engineering-CIP
- Hydrant Maintenance Program
  - With work Cycle every 2 – 3 years
Warehouse and Inventory

- Storeroom Solution
- GL Budget Codes
  - 160 Active and Inactive GL Codes
- Monthly Balance Reports
- Inventories
  - Storeroom Inventories Match to 10%
  - Semiannual, Live Corrects via Wi-Fi
Warehouse and Inventory

- Material Catalog
- 130 Pages
- Uniform Naming Convention
- Easier Inventories
Going to Cityworks 2014sp3

- Server Replacement
  - Scope
- Designer
  - Retire GL Codes, Equipment
- Storeroom
  - Web based
  - More user friendly
- Inspections
Operational Impact

- Information is throughout the organization, including in the field
- Employees are empowered and motivated
- Data is better, with notice of updates and ‘ownership’ of data
- True cost tracking for expenses and planning
- Improved awareness of operations and functions
- Improved customer service, with tracking and shorter response times
Tom Tibbitts, IS Coordinator

- Management Solution
- GIS Centric Enterprise Asset Management System
- GIS EAMS Results
- Developing Solutions
Management Solution

- Organizational Awareness
- Comprehensive View
- Operational & Financial
- Monthly Activity Reports
  - Work Order, Asset, Cityworks
- Management, Data QC, etc.
- Over 60 Report Templates
GIS Centric EAMS

- Accessible and Intuitive to Staff
- Micro and Macro Solutions – Scalable Data and Systems
- Drives Business Decisions and Solutions
- Transitioned to Preventative Maintenance Approach
- Asset Identification, Awareness and Management
- Improved Information and Geographic Information
- Improved Financial Recording Records
Collaboration & Workflow Flexibility

St. Johns County Utility Department
Organization Chart
Developing Cityworks Solutions

- Data Automation Tasks
  - Service Account Features Mapped from CIS
  - GIS Data QC Tools with AMR, CIS, and GIS Features
  - Consumption Data Automation

- Water Modeling with Innovyze InfoWater

- Mobile Technologies
  - Esri Platform Integration
  - System Map, Line Break Program
Developing Solutions

Cityworks Related Developing Programs

- Condition Assessment
  - Pilot Project for Ponte Vedra
  - Establish Data Requirements, Criteria, and Decision Matrix
  - Integrate with Cityworks Tools and Data

- Inspections
  - Introduce Inspection Approach Towards Asset Management
  - Empower Field Work with Live Data Mobile Tools and Shared Information
  - Develop Natural Workflows that Serve Utility Needs
Developing Solutions

AMR/CIS/AMS Integration
- Consumption Information
- Conservation Solution
- Partnership with SJRWMD
- Performed by Jones Edmunds

*Integration is the Key to Conserve Water and Save Money.* Cityworks InPrint, Fall 2013
Developing Solutions

Fleet Logistics and AVL
- Vehicle Locations
- Vehicle Costs
- WO Integration
- CompassCom Product
- SJC Public Works
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