Case History: City of Rock Island
GIS-Based Electronic Operations & Maintenance System for a Water & Wastewater Utility
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Outline

▪ Project Background
▪ Existing Practices
▪ Project Goals
▪ How it works
▪ Capabilities and Benefits
▪ Technology Leveraged
▪ Future Enhancements
Background – City of Rock Island Project

- Symbiont in process of completing Electronic O&M
- Located in Western Illinois, one of the Quad Cities
- Population is approximately 40,000 people
- City water supply is Mississippi River
- Wastewater system is Combined Sewer System
- Desktop GIS & Cityworks since 2005 (Conveyance)
Project Driver: New Wet Weather Facility and WWTP Upgrades
Existing Operational Practices

Review

- Maintenance (independent & manual)
- SOPs and O&Ms (hard copy only)
- Drawings, Photos (dispersed)
- Institutional Knowledge (retiring)

Compressor t-1-ss

4/1/09 replaced compressor Oil
Project Goals

- **Simplify Access to Information**
  - Streamline access to asset, operational, and maintenance data
  - Better, more informed decisions

- **Leverage Existing Technology**
  - Using ArcGIS & Cityworks
  - Opportunity to expand current GIS capabilities
Project Goals

- **Easy to Use Interface**
  - Operators Familiar with Facility Human Machine Interface (HMI) Screens
  - Non-GIS Users

- **Centralized Data Storage**
  - Standardize Information Storage
  - Reduce the need for paper copies
  - Update information as needed

- **Expandable/Configurable**
  - Expand to other facilities
How it works

1. Assets organized by HMI screens

2. User zooms to area of interest

3. User selects asset; asset info includes documents and operational history

4. User open/edits operational documents or maintenance history, generates work order
Capabilities and Benefits

- **Improves overall operational efficiency**
  - View and Update Information
    - Vendor & Designer Operation Manuals
    - Photos
    - Work Order History
    - Maintenance Schedules
    - Training Materials
    - Link to videos and websites

- **Interactive and Dynamic**
  - Visual means to access Asset Information
  - Designed for Non-GIS User
  - Familiar Interface
Capabilities and Benefits

- **Improved Knowledge Base**
- **Extend Asset Life Cycle**
  - Preventative and Routine Maintenance
  - Replacement Planning
- **Enhance City Technology**
Technology Leveraged

- **ESRI**
  - Enterprise GIS Database
  - ArcGIS Server
  - Silverlight Viewer

- **Azteca**
  - Cityworks Server
  - Cityworks Work Order API

- **Amazon**
  - EC2 Cloud Server
Future Enhancements

- Real time SCADA feeds
- Document Management Software Integration
- Mobile Apps
- Extend to other facilities