Applying GIS and Business Intelligence Technology to Support Asset Management and Utility Operations

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Like it Or Not... We Are Now a Technology-Driven Society

We All Want Immediate Access to Data

It’s a Mobile World

Predict Problems & Visualize Results
We are Also Seeing The Rise of the Data-Driven Organization

Decisions Based on Data

Big Data & Internet of Things
Because of This...
We have Piles and Piles of Information and Maximizing the Use of It Has Become Vital
Technologies to Support Utility Asset Management

1. Asset Inventory & Condition Assessment
2. Web & Mobile Solutions
3. Business & Operational Intelligence
Asset Inventory & Condition Assessment
The Foundation of Any Asset Management Program is a Comprehensive Asset Inventory and Baseline Condition Assessment
There are Several Options for Effectively Collecting Data in the Field
ArcGIS Online or Portal - Leveraging to Support Enhanced Data Collection

Esri’s Cloud-Based Offering

- **Publish** Data to the Cloud
- **Consume** via Desktop, Web, and Mobile Apps
- **Visualize** results to support Decision Making
ArcGIS Online
Cloud GIS Environment
Case Study

Execution of a Hydrant Asset Inventory and Flushing Program With ArcGIS Online
Hydrant Inspection and Flushing Program
* Prepared Data Back at the Office
Hydrant Inspection and Flushing Program
* Pushed/Referenced Data to ArcGIS Online
Hydrant Inspection and Flushing Program
* Prepared Mobile Apps for the Field

Explorer
Collector
Survey 123
Hydrant Inspection and Flushing Program

* Sent Crews into the Field
Collector – What the Person in the Field Sees
Hydrant Inspection and Flushing Program
* Tracked Progress Back at the Office
One Quick Example…

Summary of Results

3,000 Hydrants & Valves inventoried

30%* Estimated Reduction in Time

44 Critical Deficiencies Identified

100+ Workorders Generated

“big savings in logistics and program execution”
Wastewater & Stormwater Inventory

Pump Station Inspection
There Are Other Data Collection Options
* US Navy Asset Management Program
500,000 Data Records Generated
There Are Other Options
* US Navy Asset Management Program
Data Access & Visualization
Custom Web & Mobile Apps Provide Simplified Access to Complete Data
Coming Soon…. Mixed & Augmented Reality
The Next Step is to Leverage Your Data to Support More Effective Utility Management
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Business Intelligence
Dashboards
Business Intelligence is a technology-driven process for analyzing data and presenting actionable information to help organizations make more informed decisions.
Making Sense of a MOUNTAIN of Data
Turning **DATA** into **KNOWLEDGE** so Organizations can **MAKE DECISIONS**
Many Good Business Intelligence Software Platforms

Maximize Your Investment in Data

1. Blend Data from 345+ Sources
2. Enrich and Manipulate the Data
3. Load Data Into Tableau (One-Time or Scheduled)
If You Have Good Information, BI Tools Can Help You Maximize It
Bottom Line... Critical Information at Your Fingertips is an Easy to Digest Manner
Main Menu

- Financial Performance Dashboard
- Baseline Budget Reporting Dashboard
- Capital Projects Dashboard
- Documents & Resources
- Wastewater/SSO Performance Dashboard
- Workorder Performance Dashboard
PM & WO Performance
Energy Consumption

Water Works Energy Consumption Dashboard

KPIs
- Facility Count: 58
- Billing Cycle (Months): 29
- Total Usage (KWh): 20.09M
- Electricity Cost: $2.67M
- Demand Charges: $410K
- Total Electricity Cost: $3.08M

Facility Details

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<th>Facility Name</th>
<th>Facility Type</th>
<th>Energy Consumption (KWh)</th>
<th>Total Electricity Cost</th>
<th>Total Demand Charges</th>
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Energy Cost by Facility

Energy Cost by Facility Type

Facility Energy Consumption & Cost

Energy Cost Heat Map
CIP and Project Tracking
Predictive Analytics

Optimize CIP & PM Programs to Address Life Expectancy Issues

Predicted Pipe Failures over Next 10 Years
Data Governance is the Key

The Software is Secondary!
There is No Silver Bullet Software Product
Comments and Opinions

• Let Your Data Work for YOU

• Predict Where Problems May Occur and Plan for Them.

• Apply the Right Technology Tools to Fit the Job

• Support More Effective Utility Management

Questions
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