

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

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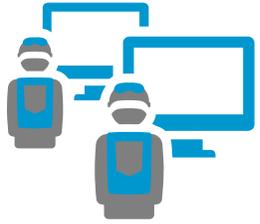
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**CDM
Smith**



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



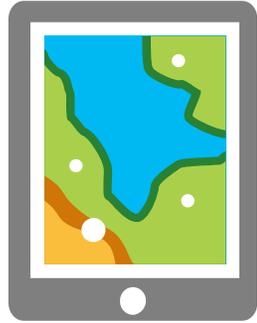
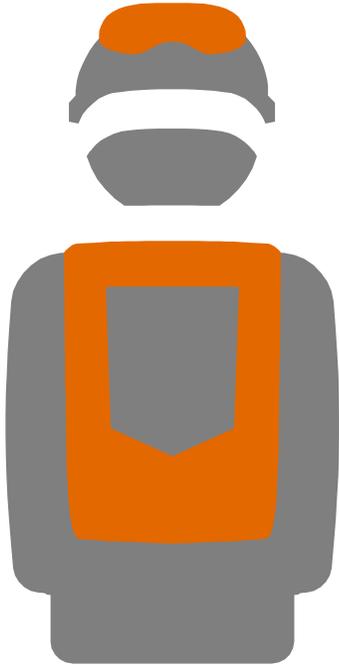
Because of This...
We have Piles and Piles of
Information and
Maximizing the Use of It
Has Become Vital

Technologies to Support Utility Asset Management

- 1 Asset Inventory & Condition Assessment
- 2 Web & Mobile Solutions
- 3 Business & Operational Intelligence



1



Asset Inventory & Condition Assessment

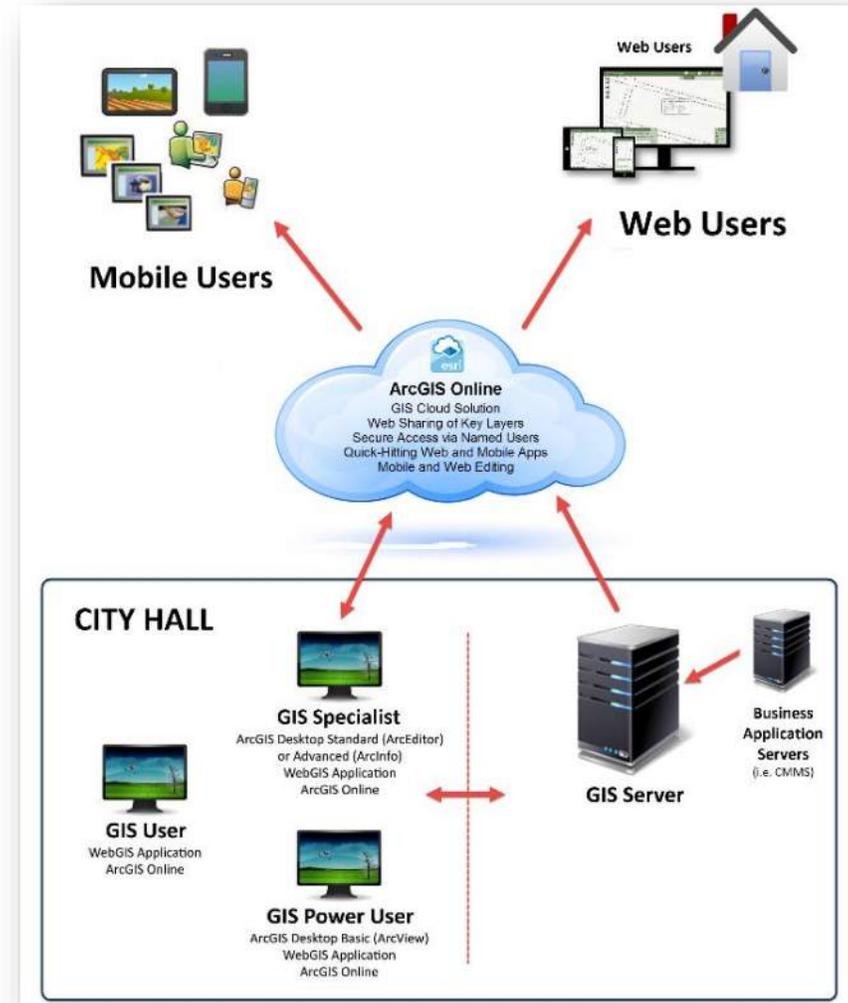
**The Foundation of Any Asset
Management Program is a
Comprehensive Asset Inventory
and Baseline Condition
Assessment**

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

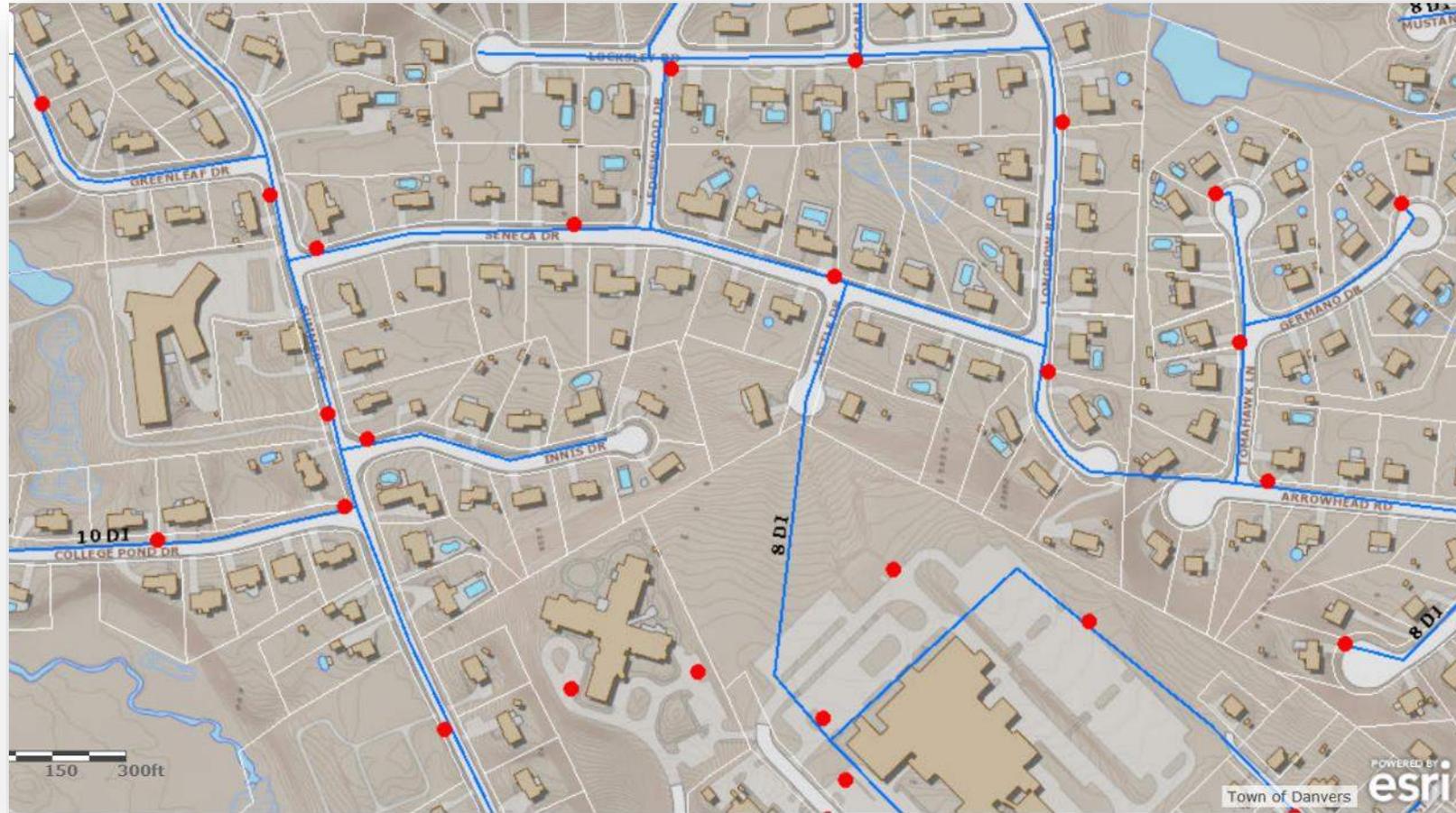


Case Study

Execution of a Hydrant Asset Inventory and Flushing Program With ArcGIS Online

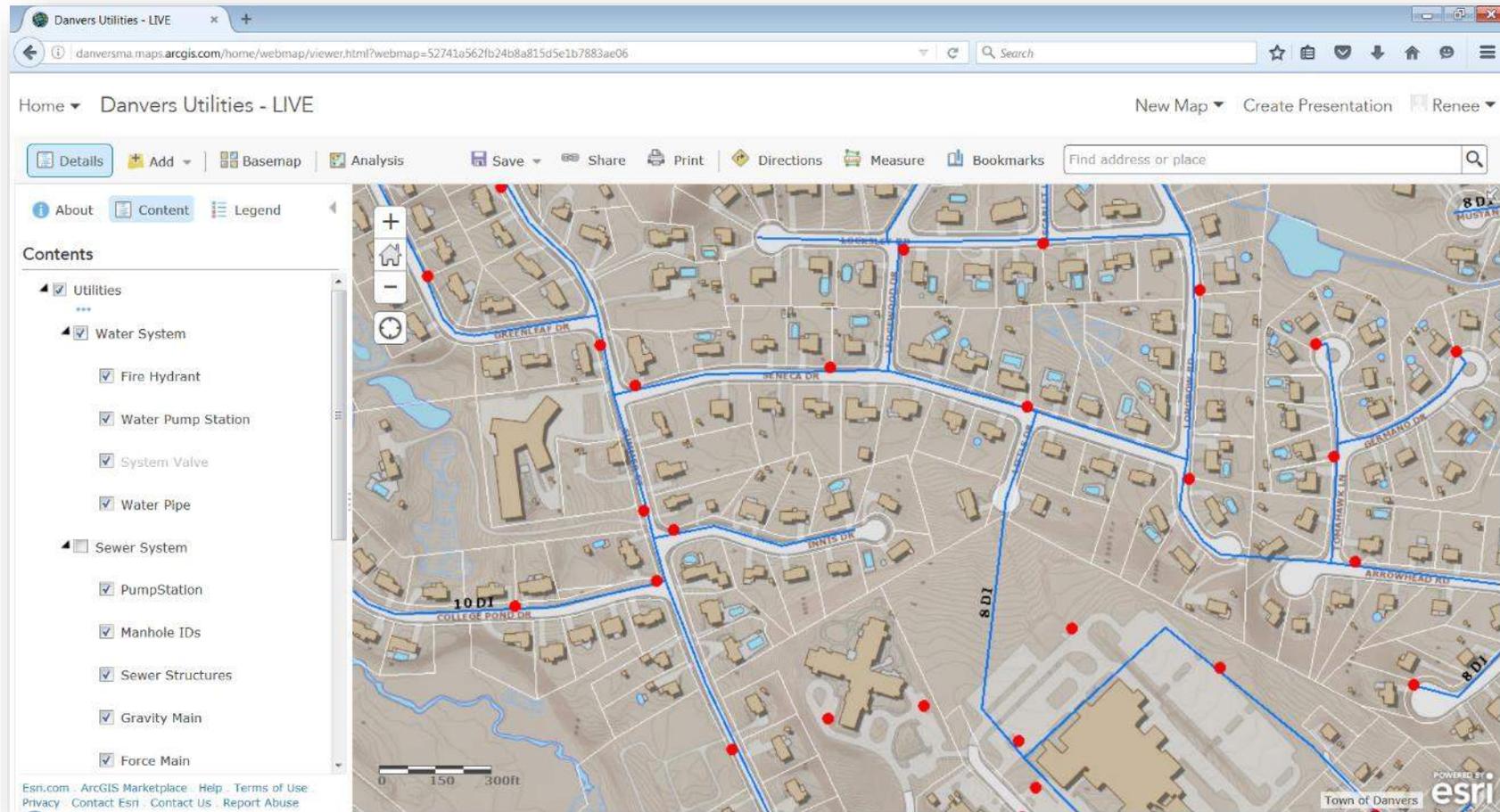
Hydrant Inspection and Flushing Program

* Prepared Data Back at the Office



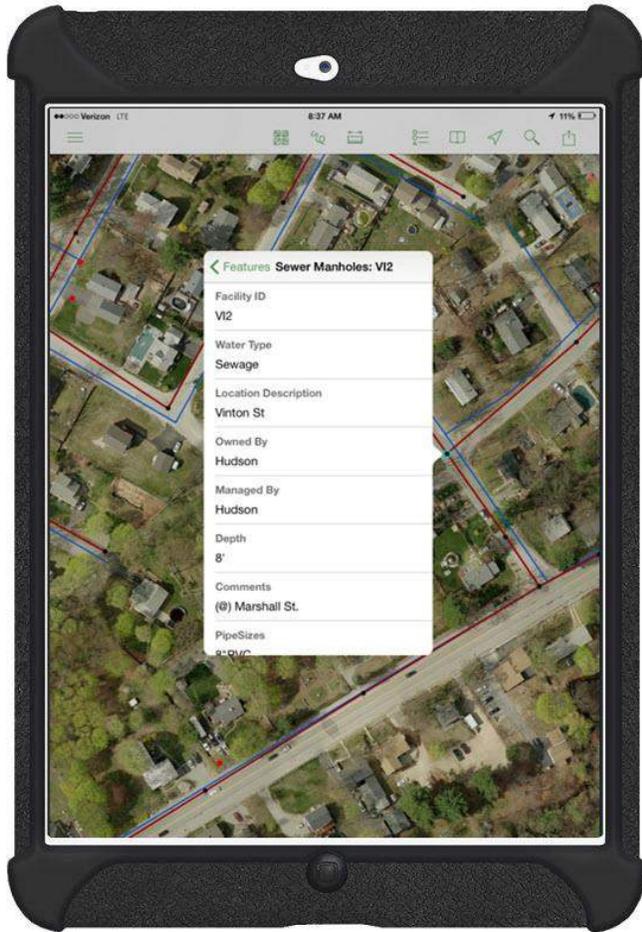
Hydrant Inspection and Flushing Program

* Pushed/Referenced Data to ArcGIS Online

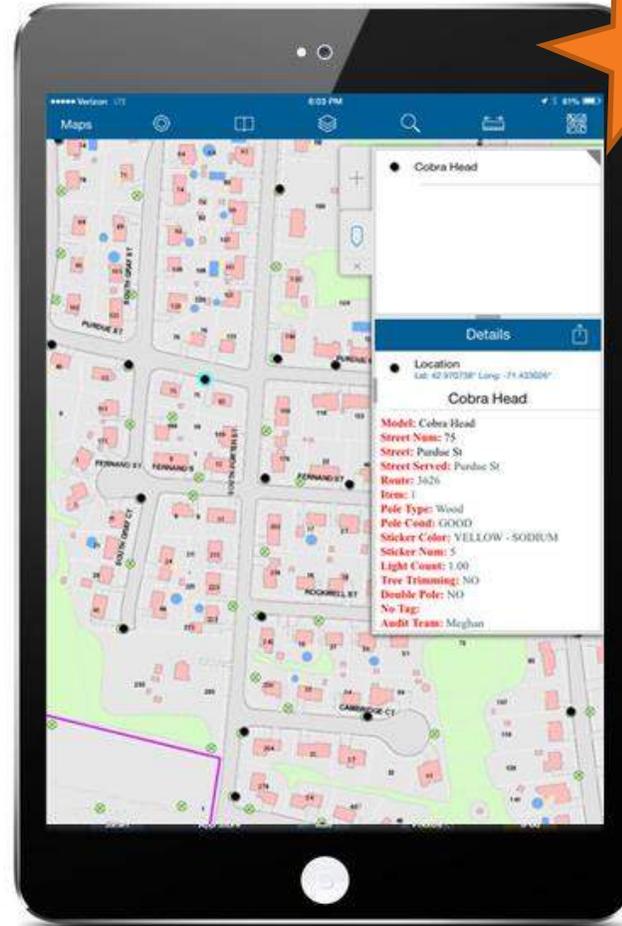


Hydrant Inspection and Flushing Program

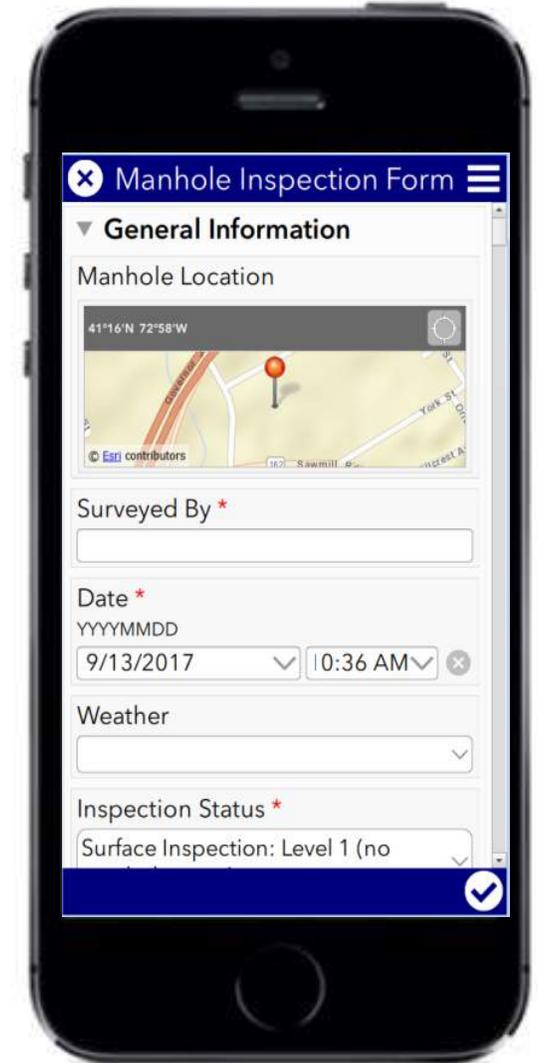
* Prepared Mobile Apps for the Field



Explorer



Collector



Survey 123

Hydrant Inspection and Flushing Program

* Sent Crews into the Field

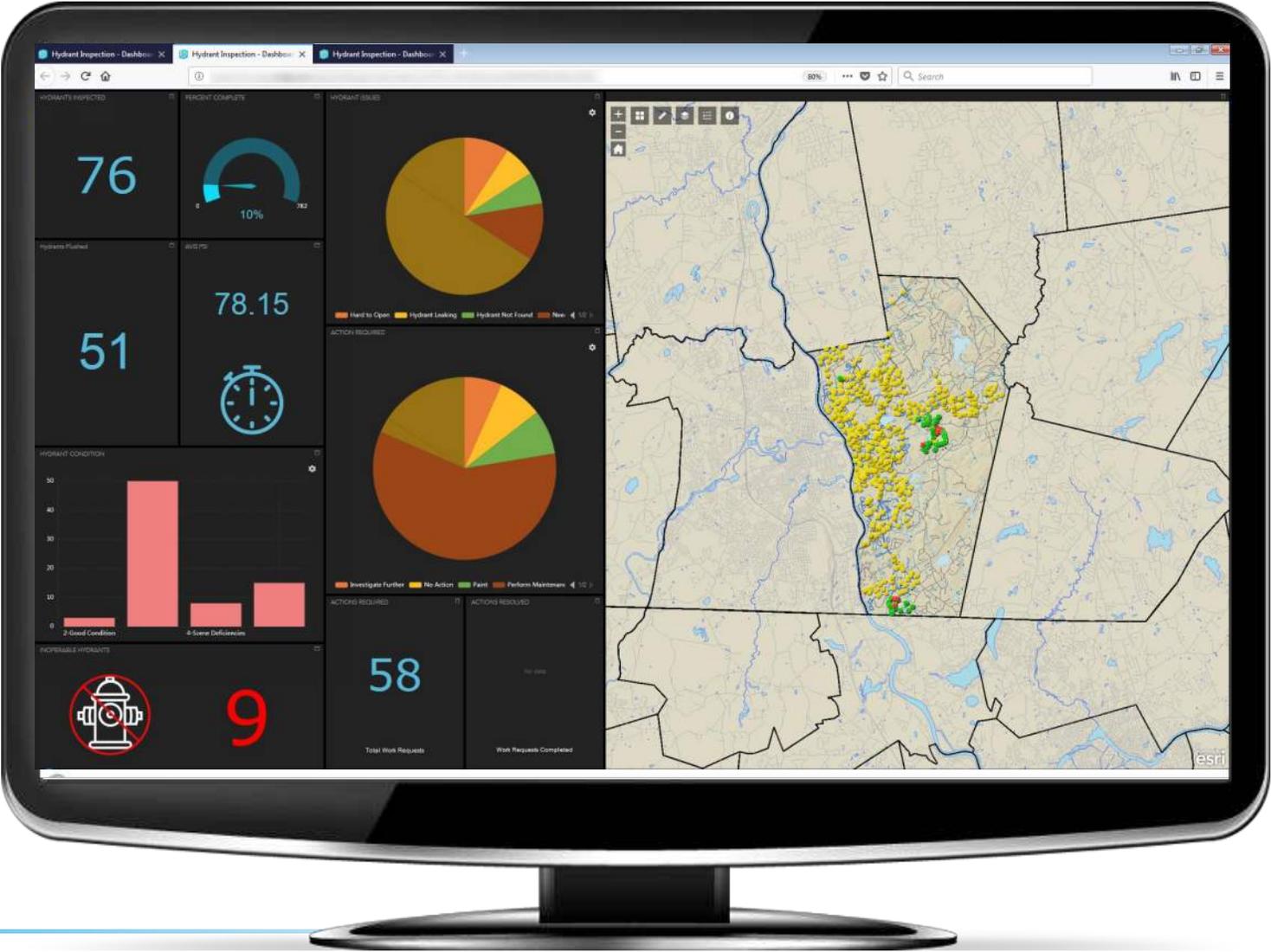


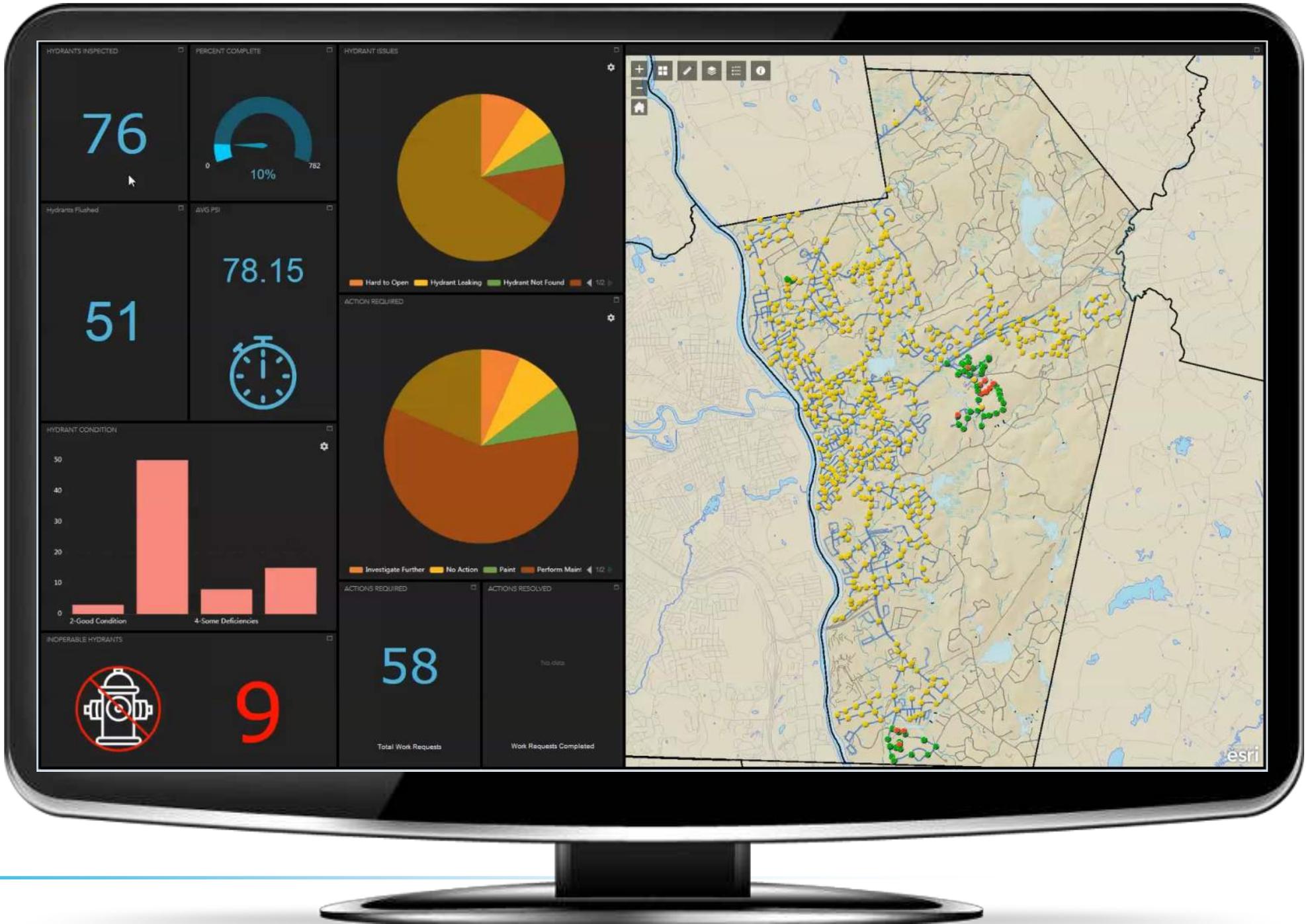
Collector – What the Person in the Field Sees



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



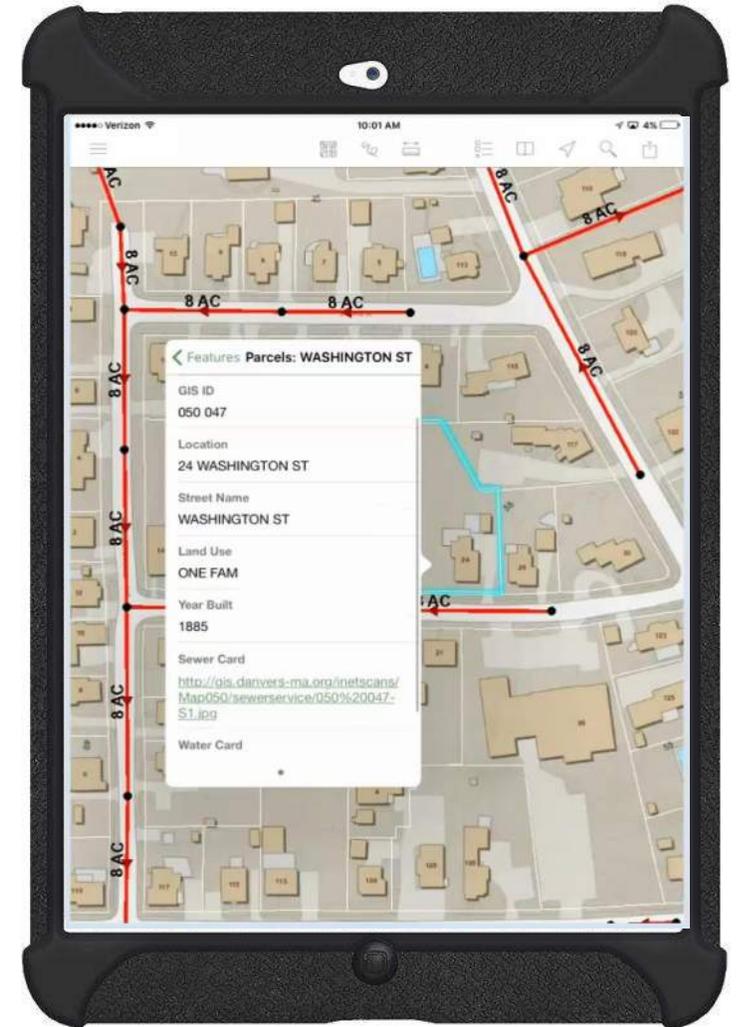
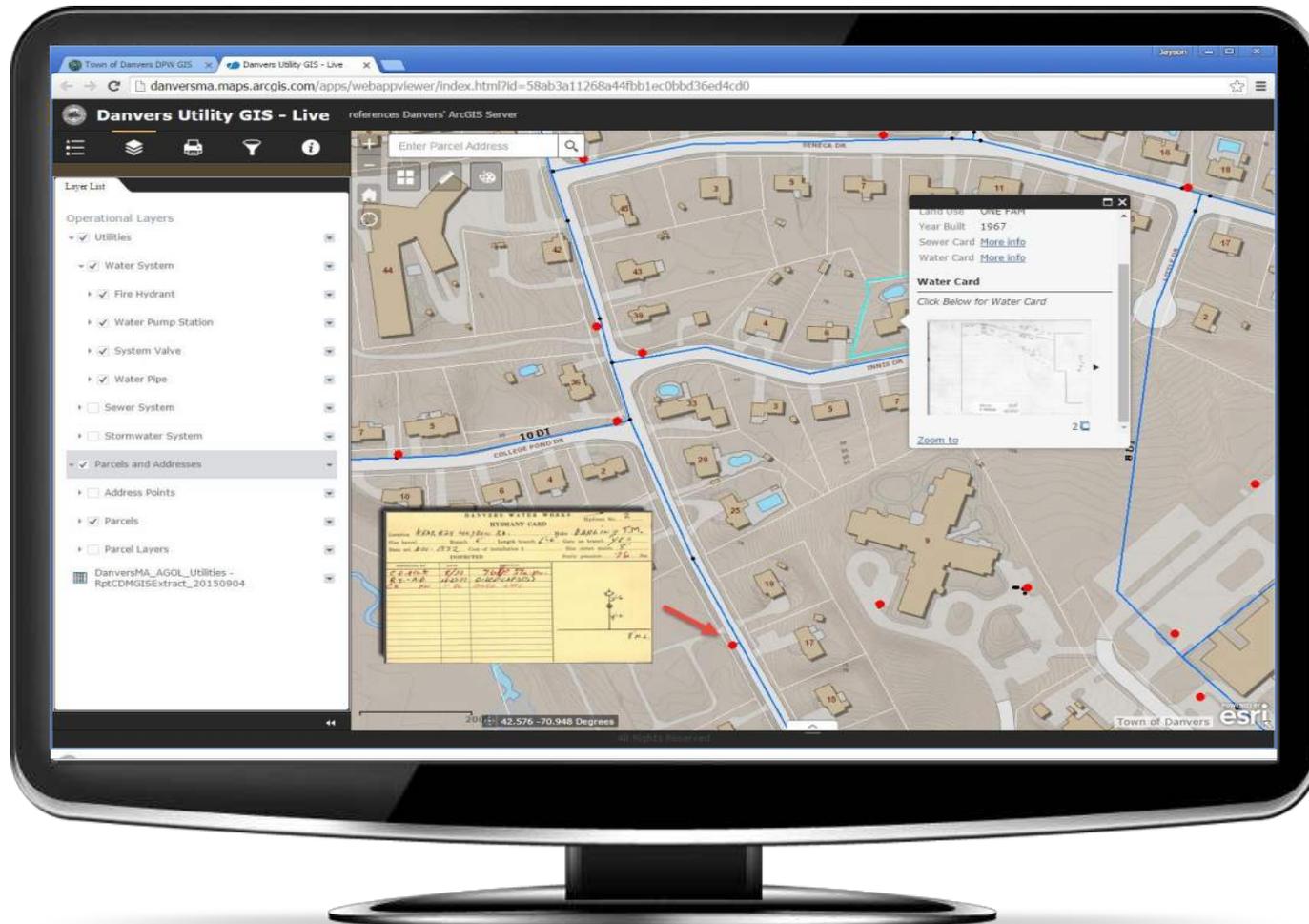
2



Data Access & Visualization

Johns Hopkins University
Smithsonian Institution

Custom Web & Mobile Apps Provide Simplified Access to Complete Data



Coming Soon.... Mixed & Augmented Reality



Esri
AuGeo

3

The Next Step is to Leverage Your Data to Support More Effective Utility Management

GIS

Billing

SCADA

Finance

CMMS

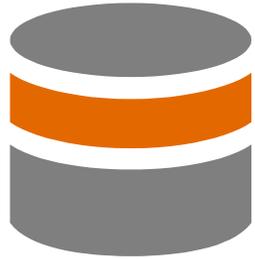
Complaints

DOC MGT

**The Next Step is to Leverage Your Data to Support
More Effective Utility Management**

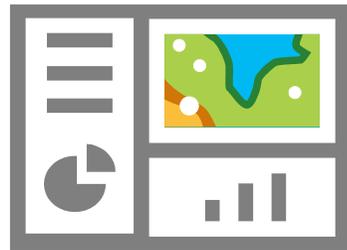
**Business Intelligence
Dashboards**

Business Intelligence



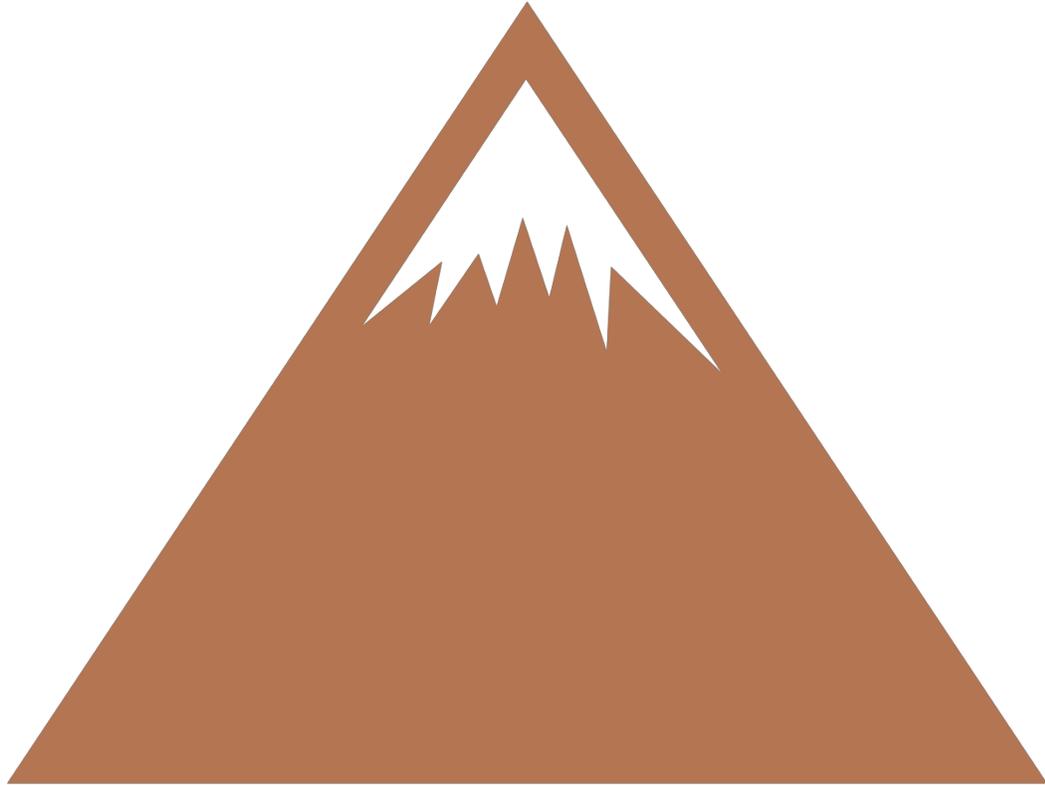
Data

Technology
& Analysis



Decision Support

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**

CDM
Smith®



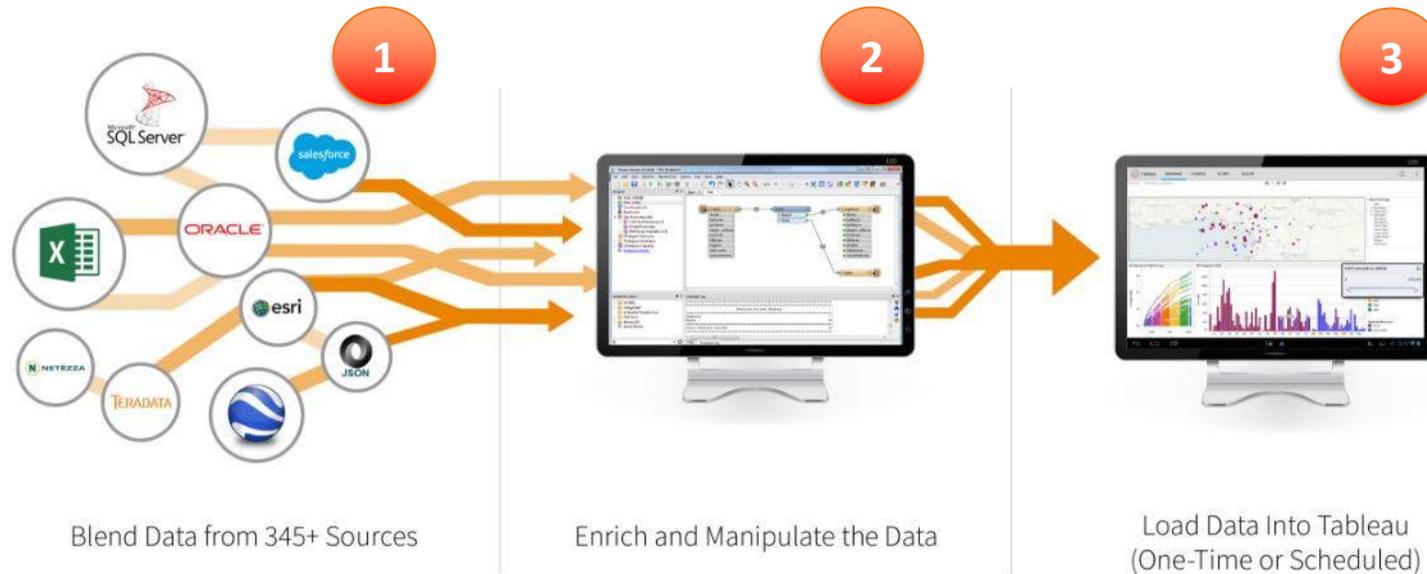
Turning **DATA** into
KNOWLEDGE so
Organizations can
MAKE DECISIONS

QDMA
Switch[®]

Many Good Business Intelligence Software Platforms



Esri
Insights



Maximize Your Investment in Data

If You Have Good Information, BI Tools Can Help You Maximize It

Track
Progress

Compliance
Reporting

Business
Analytics

Project
Problems

Project
Tracking





**Bottom Line...
Critical Information
at Your Fingertips
is an Easy to Digest Manner**



Main Menu

Financial Performance Dashboard

Documents & Resources

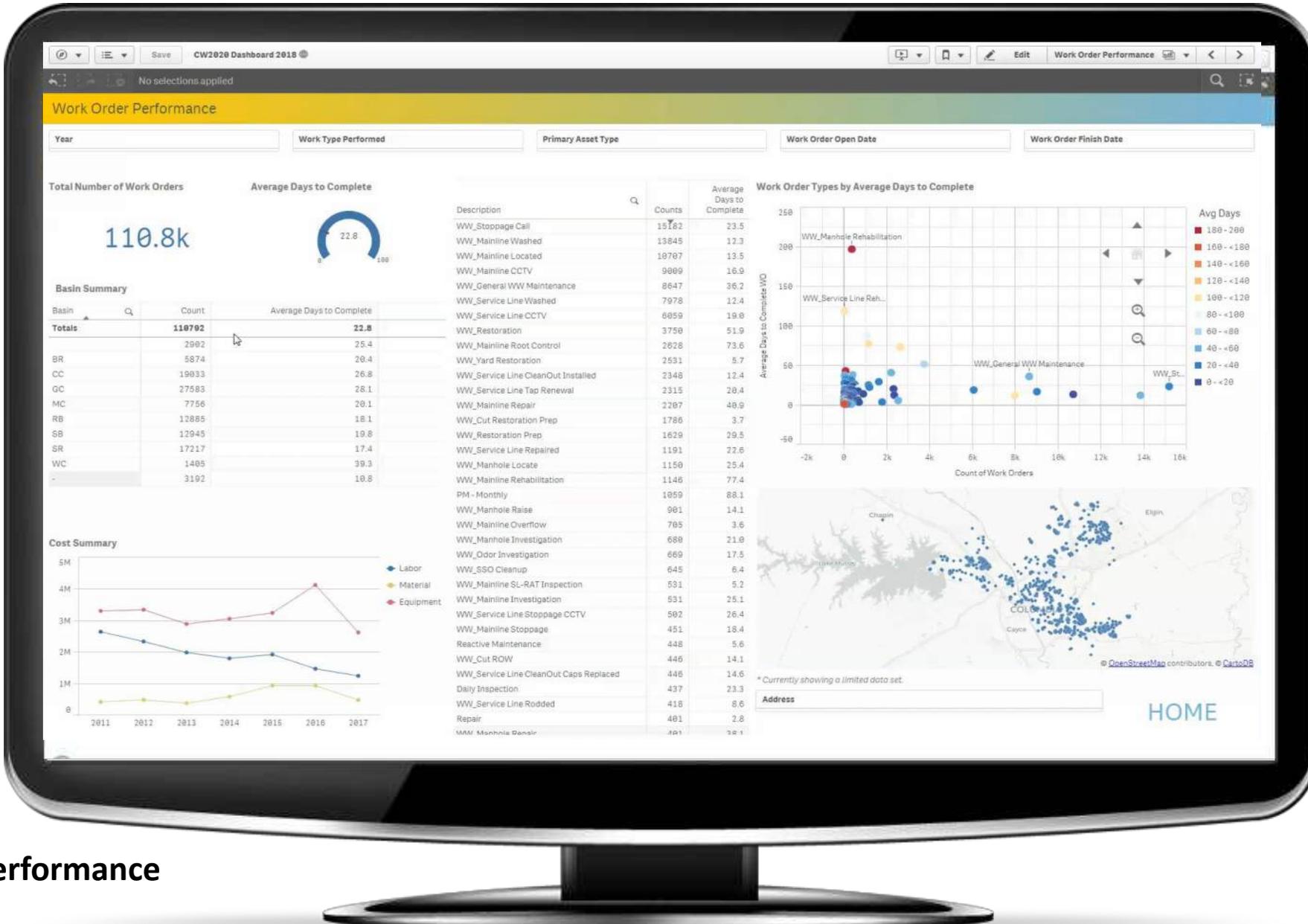
Baseline Budget Reporting Dashboard

Wastewater/SSO Performance Dashboard

Capital Projects Dashboard

Workorder Performance Dashboard

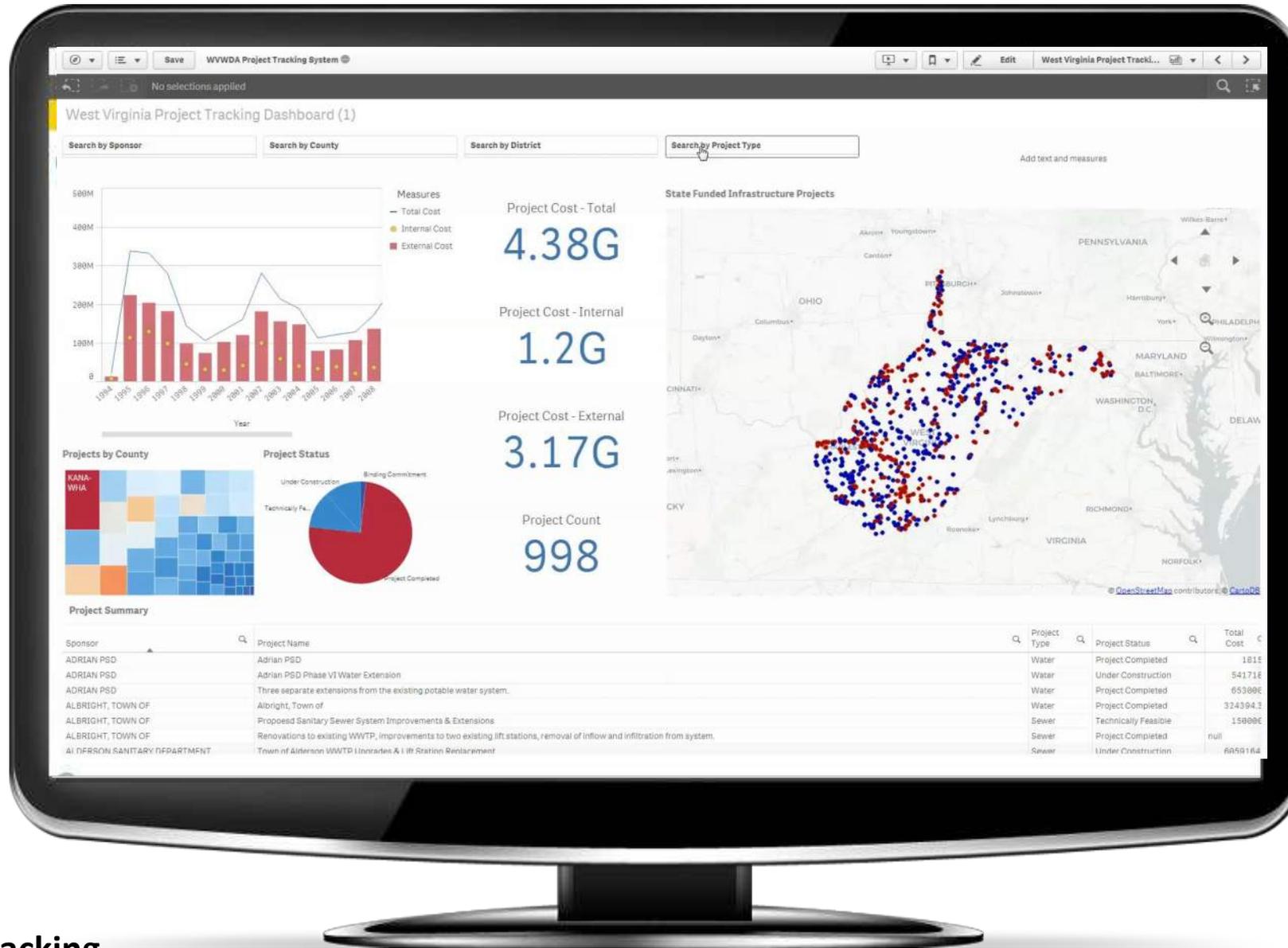
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PM & WO Performance



Energy Consumption



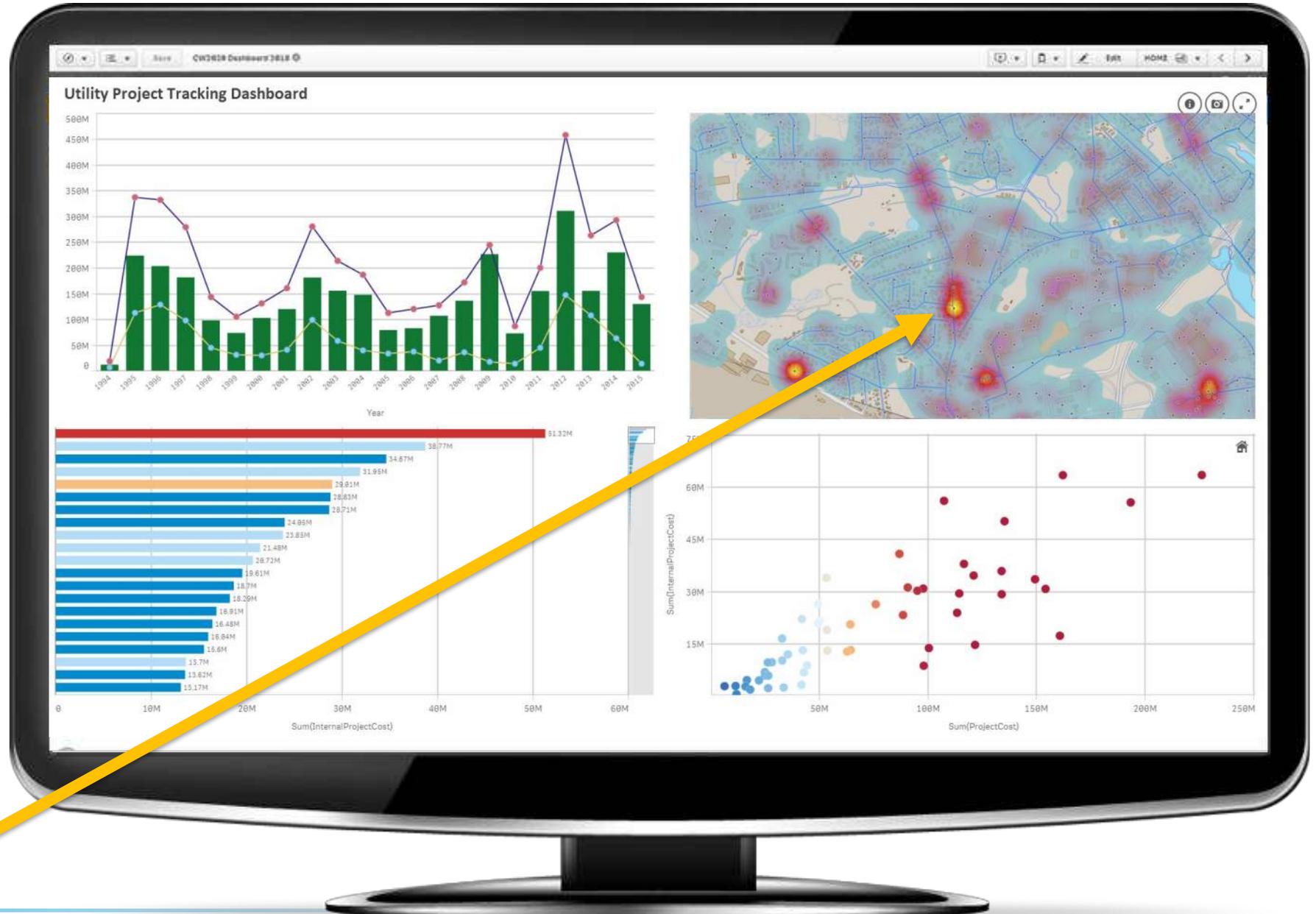
CIP and Project Tracking

CIP 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

