

GIS and Asset Management

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A Little About FLO

- Employee Owned
- Located in Portland and Seattle
- Experts in the design, implementation and use of GIS & data analytic solutions



Business



School Districts



Non-Profits



Utilities



Government

Local
State/County
Federal



Topics

How to get started with:

- Asset Management Systems (AMS/CMMS)
- Geographic Information Systems (GIS)
- Steps to ensure a successful implementation



Asset Management

The process of maintaining and managing assets once acquired or built



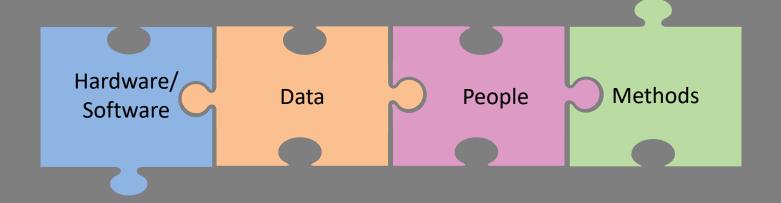
Role of an AMS/CMMS

- Manage lifecycle activities related to your assets
- Handle maintenance, work orders, etc.
- Stores asset and work history
- Valuable data that can be used to assess asset performance and identify issues



Geographic Information System

A system to gather, manage and analyze spatial data



 ROI through data visibility, new capabilities, integrations and efficiencies

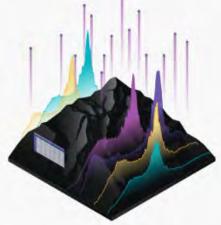


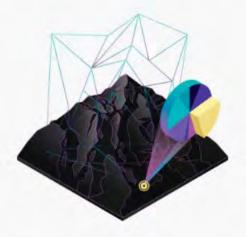
GIS Technology

How GIS Works

GIS technology applies geographic science with tools for understanding and collaboration. It helps people reach a common goal: to gain actionable intelligence from all types of data.









Maps

Maps are the geographic container for the data layers and analytics you want to work with. GIS maps are easily shared and embedded in apps, and accessible by virtually everyone, everywhere.

Data

GIS integrates many different kinds of data layers using spatial location. Most data has a geographic component. GIS data includes imagery, features, and basemaps linked to spreadsheets and tables.

Analysis

Spatial analysis lets you evaluate suitability and capability, estimate and predict, interpret and understand, and much more, lending new perspectives to your insight and decision-making.

Apps

Apps provide focused user experiences for getting work done and bringing GIS to life for everyone. GIS apps work virtually everywhere: on your mobile phones, tablets, in web browsers, and on desktops.

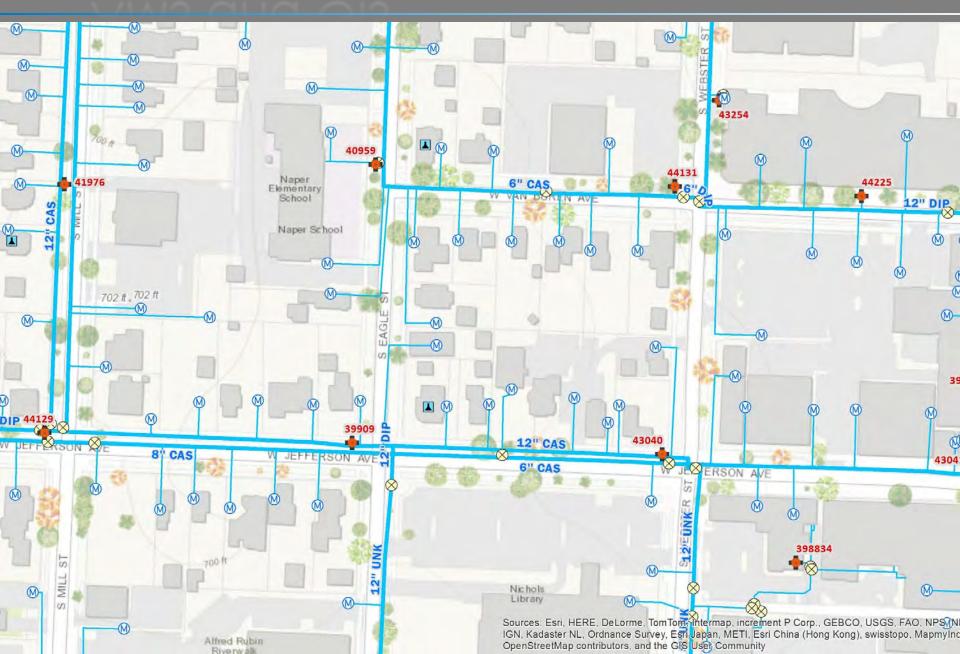
<u>Naps</u> <u>Analysis</u> <u>Apps</u>

Role of GIS

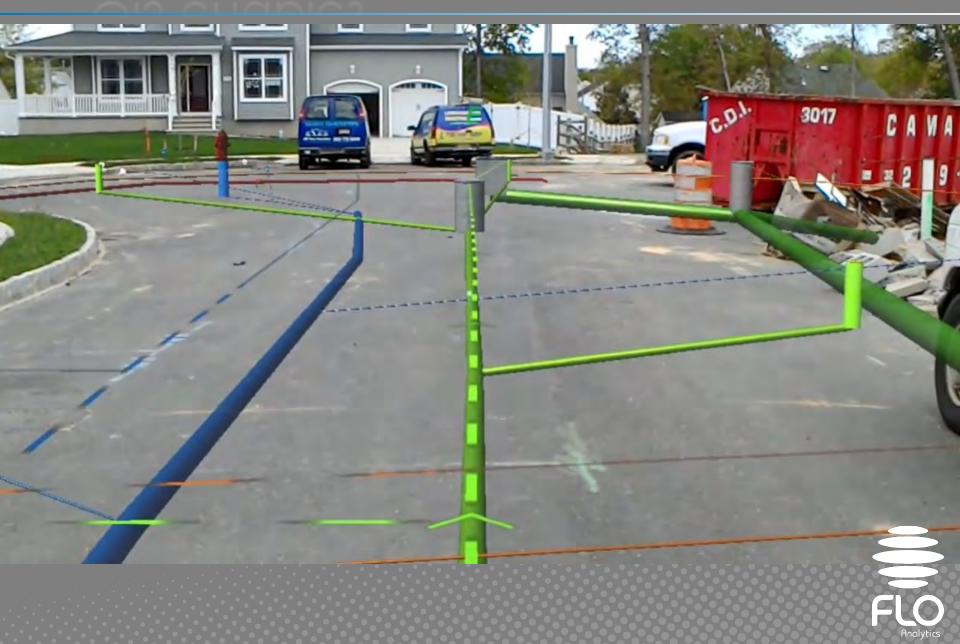
- Manage asset location, see related information (addresses, etc)
- Planning, design and construction
- Visualize assets by attributes see condition across the network
- Analysis –asset failures, nearby assets, analyze consequences



AMS and GIS

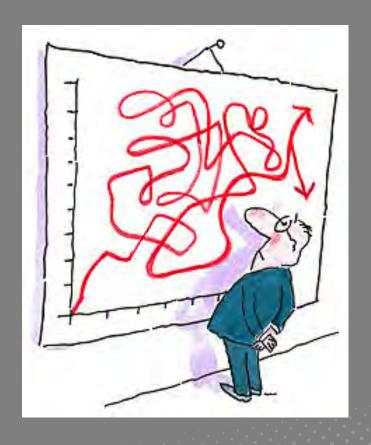


GIS enables



Common "barriers"

- Complexity
- "We are too small"
- Unsure about GIS
- Costs too much
- Personnel and Skillsets
- Data Availability
- Not sure where to start!





Successful Implementation

- IACC 2019
- Make a Plan
- End Use Case
- Data and Inventory
- Data Maintenance
- And Beyond





Strategic Planning

Key Performance Indicators

A vision of what you would like to do with your ideal system

- Data, Tools
- Workflows and Processes
- Decision Making
- Efficiency and savings

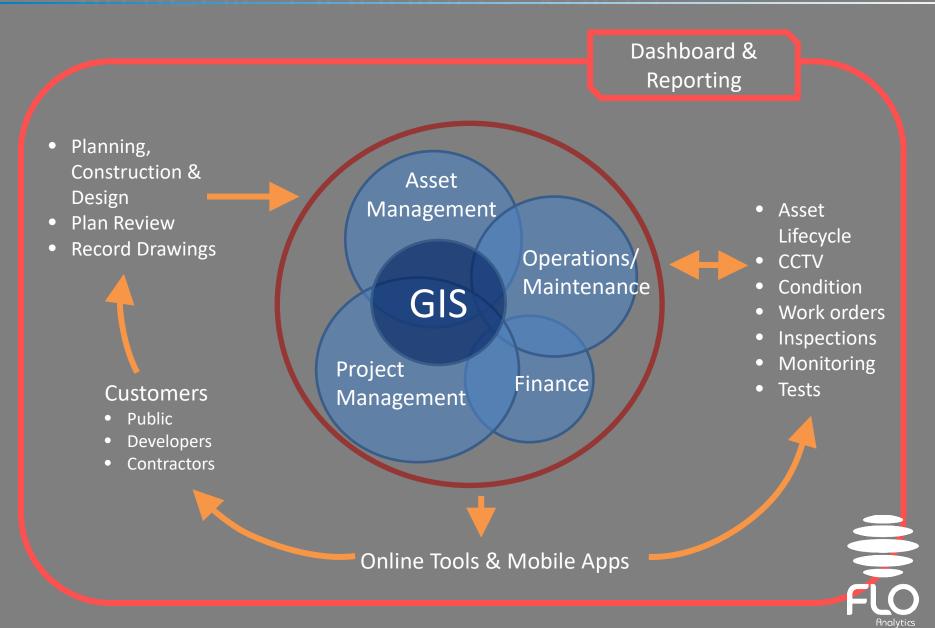








Strategic Planning - Vision



Current Resources

- Staff skills and responsibilities
- What Data you have and how you get it
 - Asbuilts
 - -CAD
 - Paper
 - Institutional Knowledge



GIS questions to ask an AMS vendor

- "Describe how you integrate GIS data"
- "Do you have an option to synchronize data between the AMS and GIS?"
- "Are there any special requirements around GIS data formats or schemas?"



Considerations

- Enough time to capture data
- Field crews: Workflow changes, available tools, devices?
- Office staff: What data and tasks?
- Do you have any existing software or data formats that may be affected?



Data Inventory

- Priority Task
- GIS First
- Data Sources
 - GIS
 - CAD/Electronic
 - PDF
 - Paper
 - Staff



Data/Inventory

- Establish asset inventory and locations
 - Attributes/Schema
 - Field capture
 - Records capture
 - Markup





City of Kelso



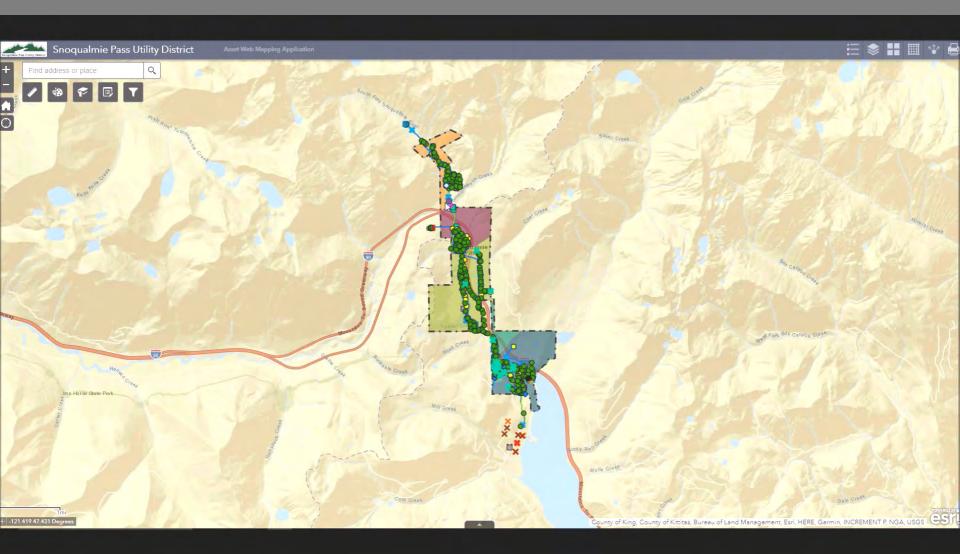
Snoqualmie Pass Utility District

- No existing GIS data
- Location of assets unknown or difficult to find (snow)
- Entire utility system was mapped in 2.5 working days
 - √ 657 features
 - √ 19 feature types
 - ✓ Down to 3" accuracy





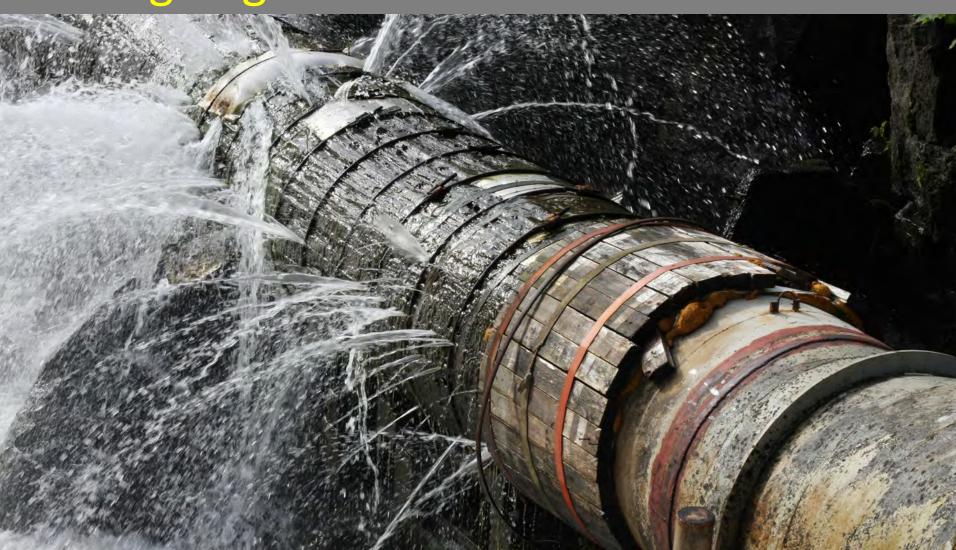
Snoqualmie Pass UD Asset Inventory





Data Maintenance

Ongoing corrections and verification



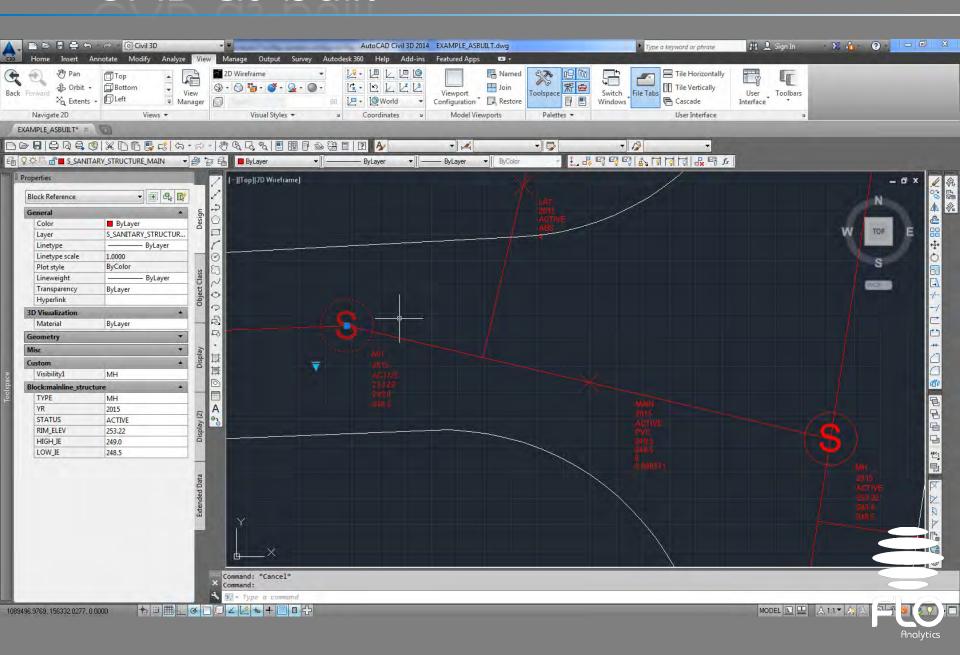
Data Maintenance

- What parts of the data will be updated by who?
 - location vs attribute
- What processes will you need to use?
 - As-builts (standards)
 - Field updates

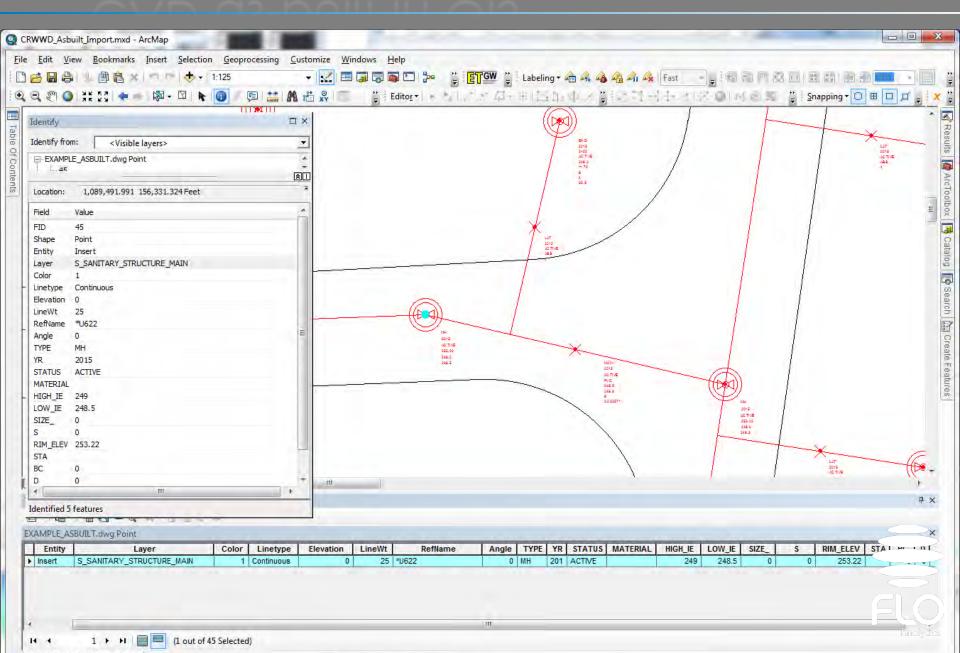


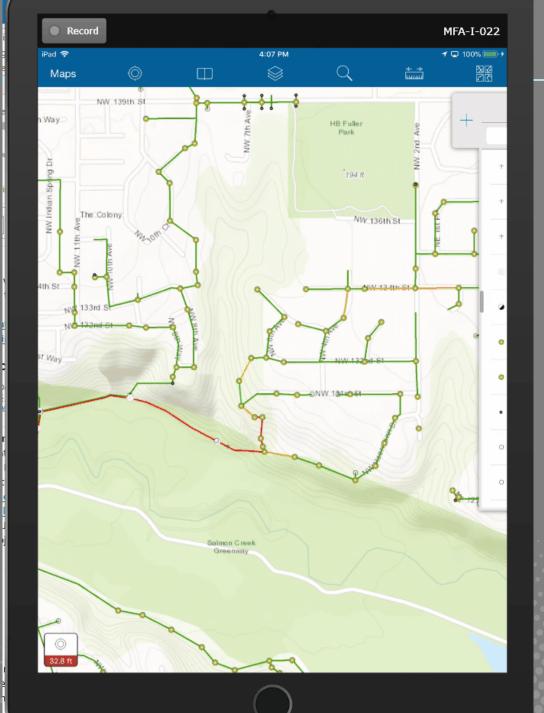


CAD as-built



CAD as-built in GIS







Integration

Combining data from different sources to provide a unified view

- Get the information required to do the job effectively
- Streamline reporting and management activities



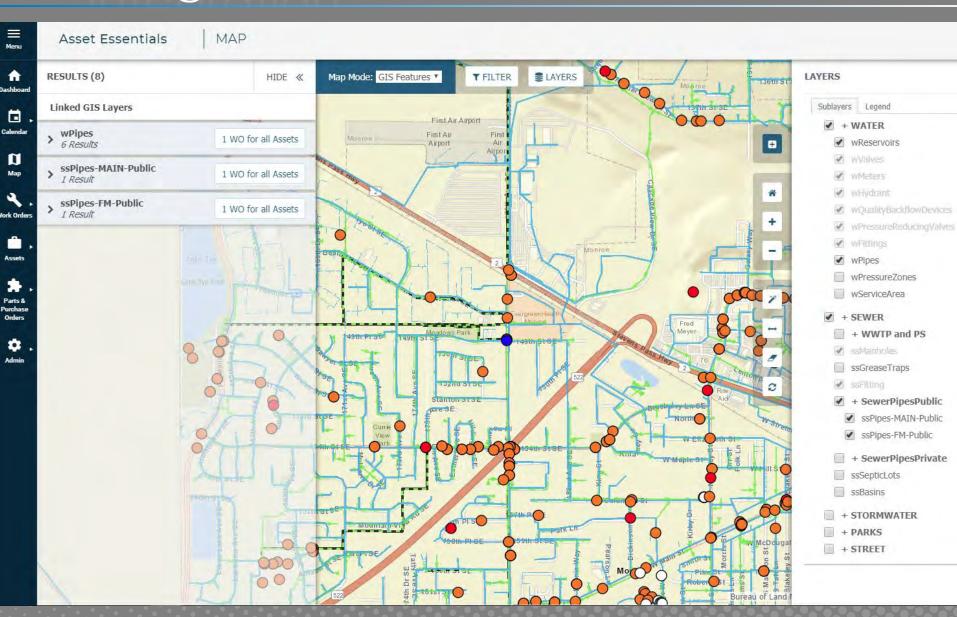


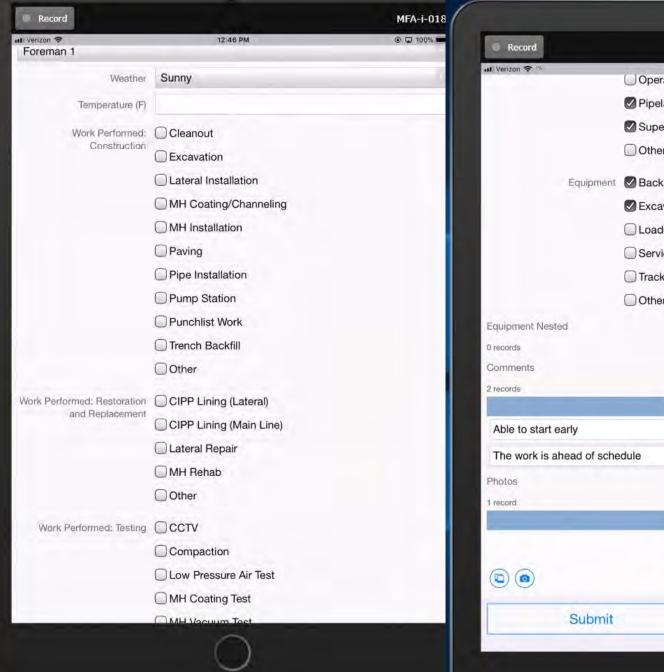
Integration

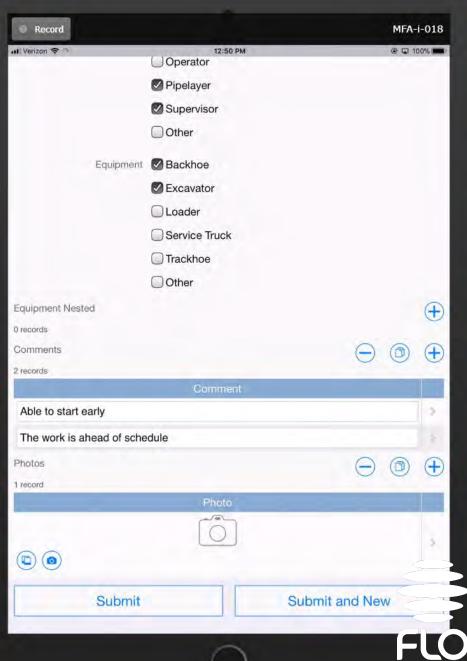
- Most asset management systems are designed to work with GIS
- Your GIS can integrate with other systems readily
- Connecting systems can help maximize the return

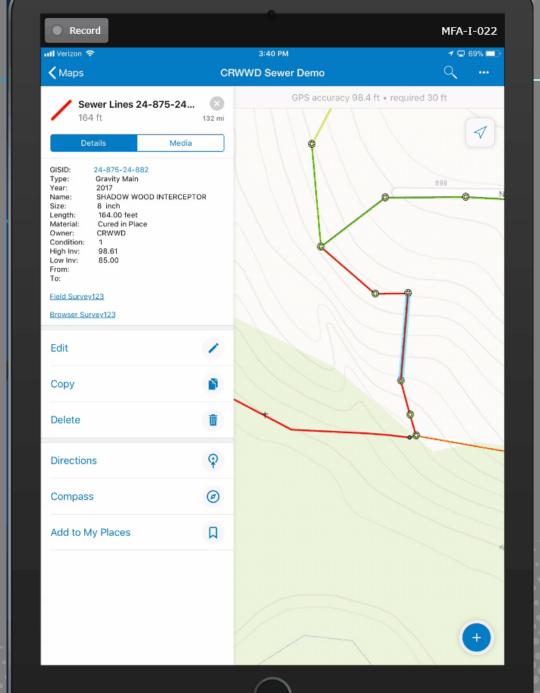


Integration











Data Visualization and use

- Maps
- Field/mobile tools

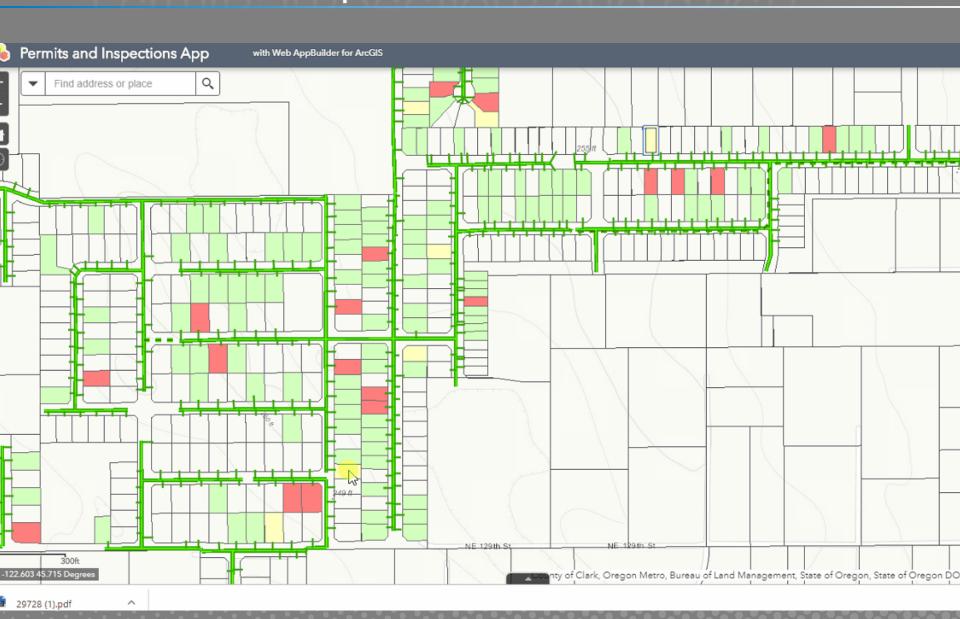




Detailed Asset Maps



Permits, Inspections and assets



Dashboard



Water Main Lines

11

Last update: a few seconds ac

Water Main Line (feet) **5,567.838**

last update: a few seconds a

Water Valves

7

Last update: a few seconds ag

Water Drains

4

Last update: a few seconds

Water Hydrants

5

Last undate: a few seconds



Dashboard



Summary and status

Clark Regional Wastewater District Development Program

District Developer Projects

2 Proposed

3 In Review

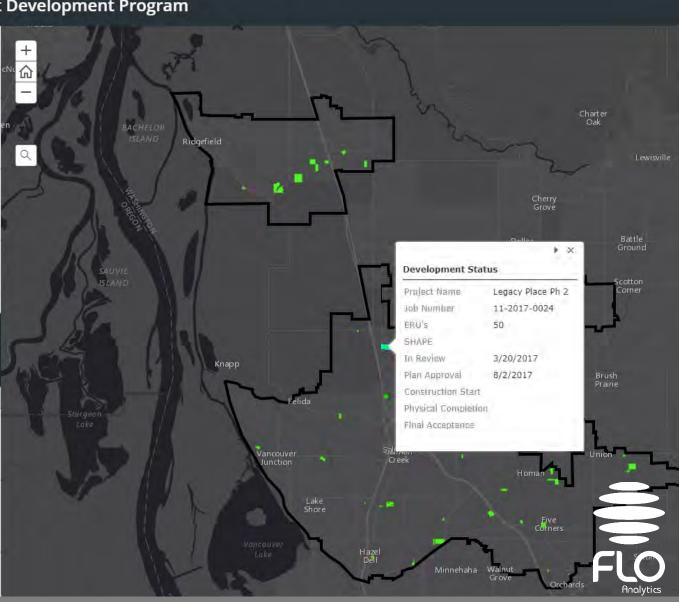
4 Approved

The approved plans are sent back to the engineer with a signed Mylar cover sheet, and four copies of the approved plans are provided to the District in return. The District's inspectors and project managers review the approved plans with the contractor at a pre-construction conference to ensure construction goes smoothly.

5 Under Construction

6 Physical Completion

7 Final Acceptance & Warranty



Summary

- Start with a general vision and some goals
- GIS data forms the foundation for your AMS
- System of record containing institutional knowledge
- GIS/AMS Integrations return tangible costsavings
- Visualizations to answer questions





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GIS Consortium

BUILDING SMARTER COMMUNITIES

