GIS and Asset Management

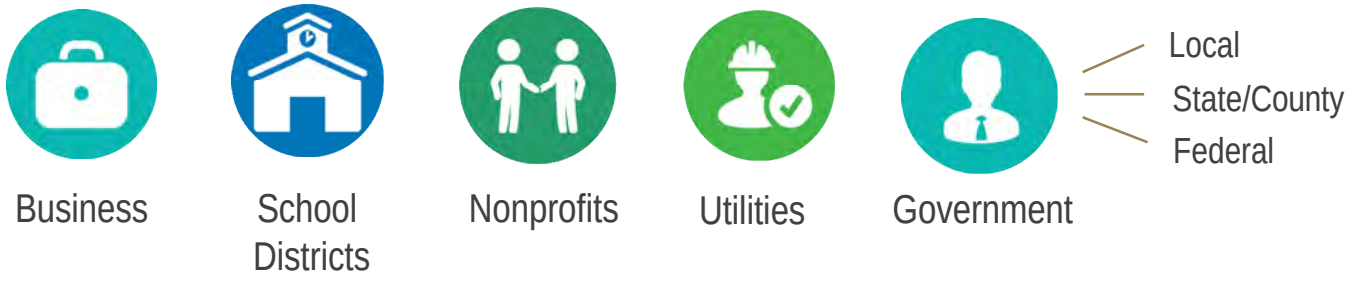
FROM SIMPLE TO ENTERPRISE

GRANT HERBERT IACC 2022

FLO Analytics

About FLO

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



esri Partner Network Bronze

esri ArcGIS Online Specialty

esri ArcGIS System Ready Specialty

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Topics

About Asset Management – and Asset Management Systems (AMS)/Computerized Maintenance Management System (CMMS)

Geographic Information Systems (GIS)

GIS with AMS

GIS deployment options

GIS beyond AMS

Asset Management

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Asset Management

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Asset Management

ROLES:

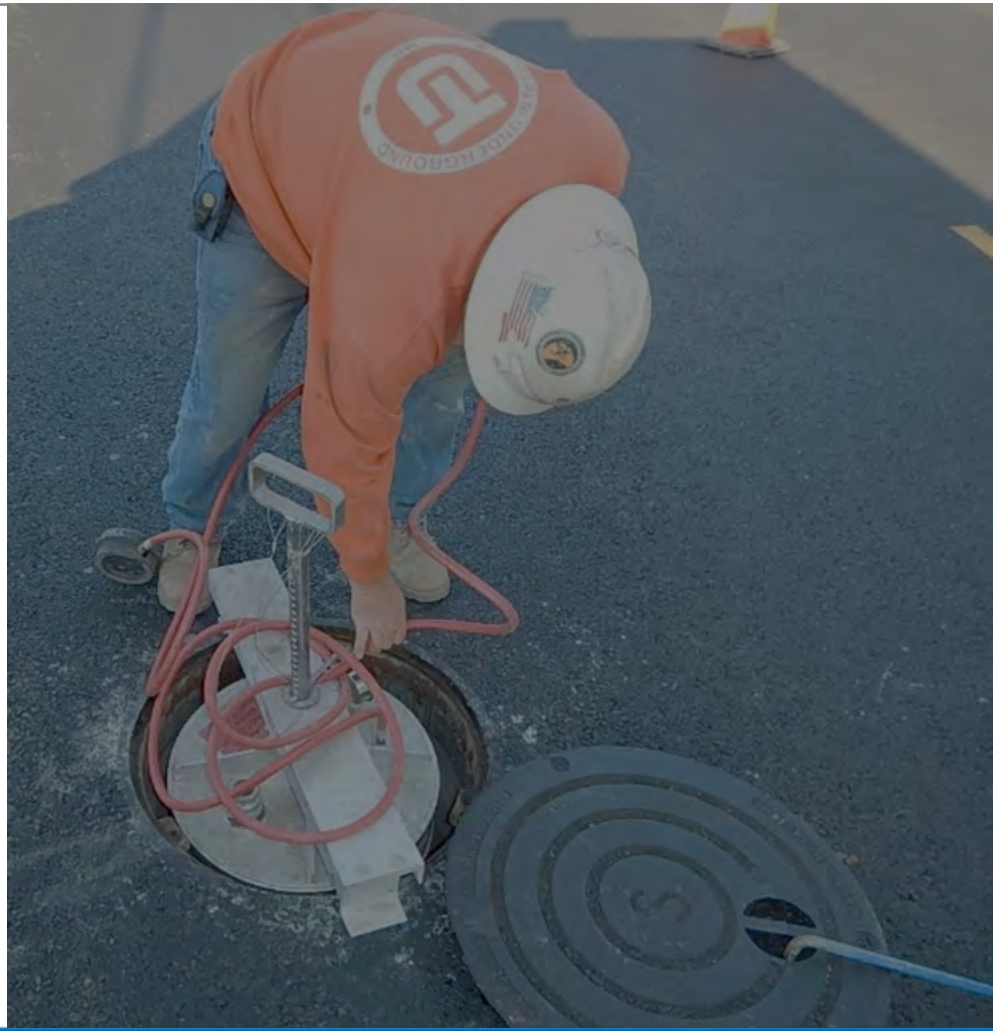
1. Identify and locate assets

2. Schedule and track maintenance

3. Track condition

4. Identify likelihood and impact of failure

5. Evaluate consequences of failure



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Asset Management

Asset lifecycle activities

- Installation, removal
- Testing, cleaning, repairing
- Pruning, mowing, sweeping
- Can be non spatial assets

Handle maintenance, work orders, etc.

- Costs, parts
- Labor

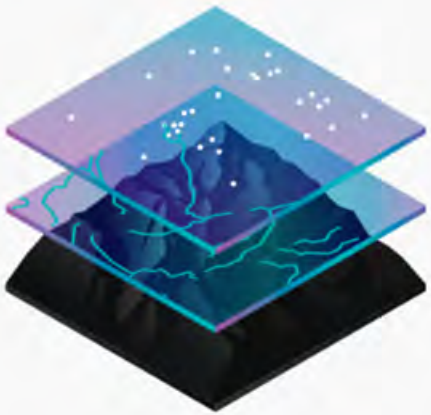
History

- History becomes important for long term management, planning, identifying risks/issues

GIS

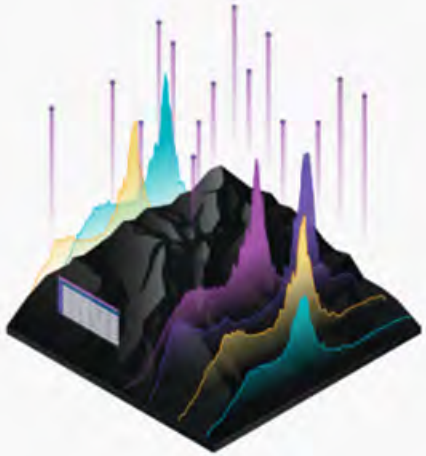
How GIS Works

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.



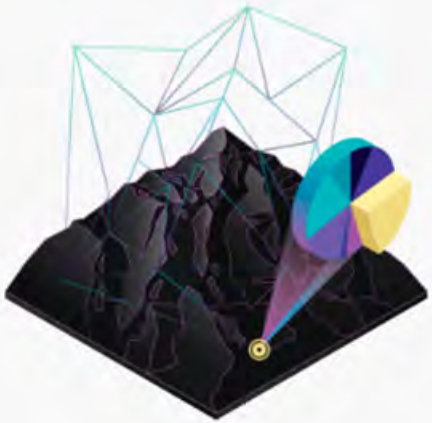
Maps

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.

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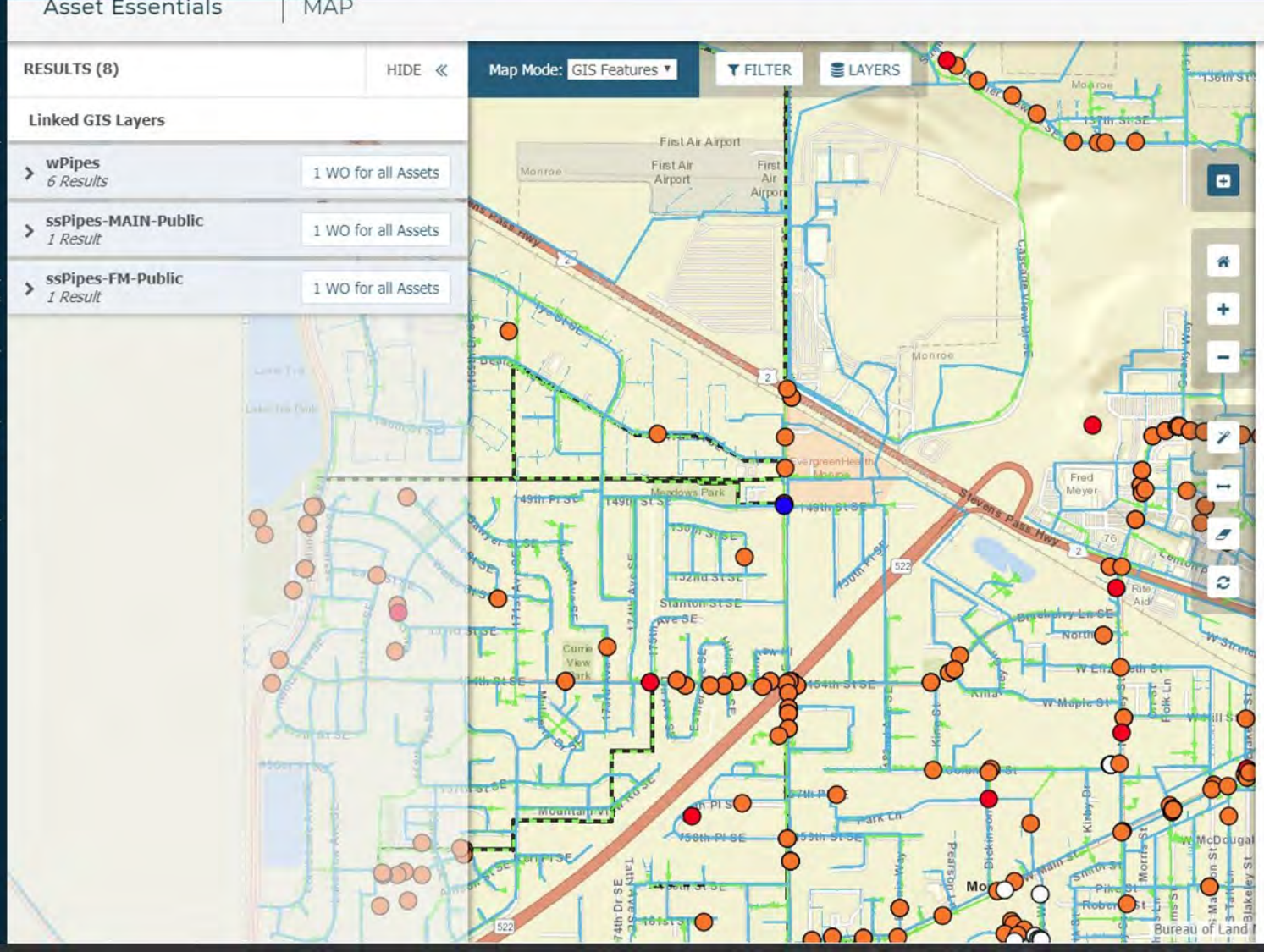

GIS and AMS together

This is what you want to see

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Barriers

- Complexity
- “We are too small”
- Costs too much
- No staff
- No data
- Don’t know where to start

Breaking the barriers

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What do staff need?

Field data access and tools?

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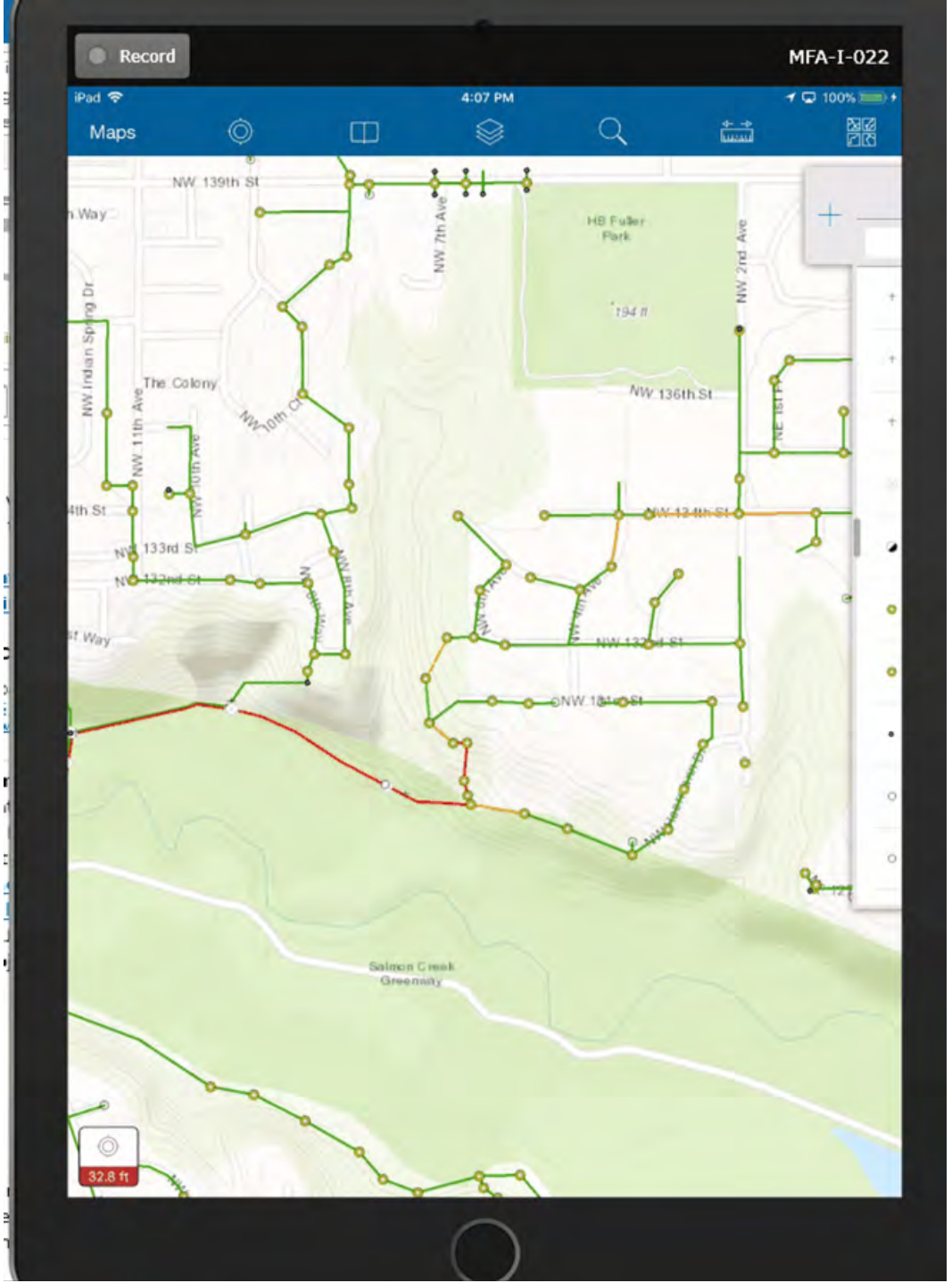
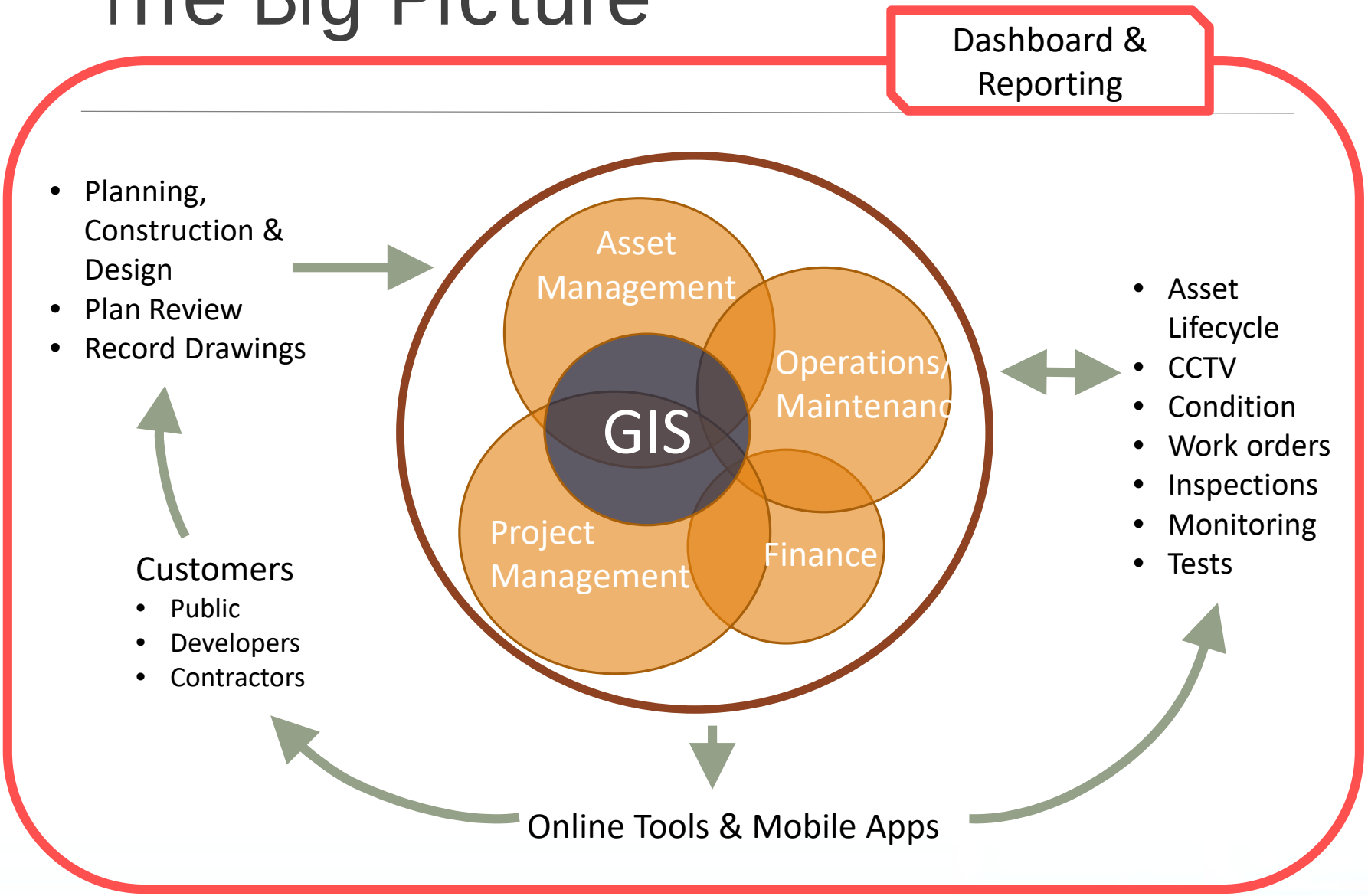


The Big Picture



Implementation

- The Vision – what would your system have to do?
  - Data
  - Tools
  - Workflows
  - Decision making
  - Efficiency/savings

Implementation

- The Plan
- Assess your need
  - Use cases, users
- Assess your capabilities
  - Software, hosting, people, knowledge
- Plan Data capture
- Give yourself enough time

Data Maintenance

Cad data

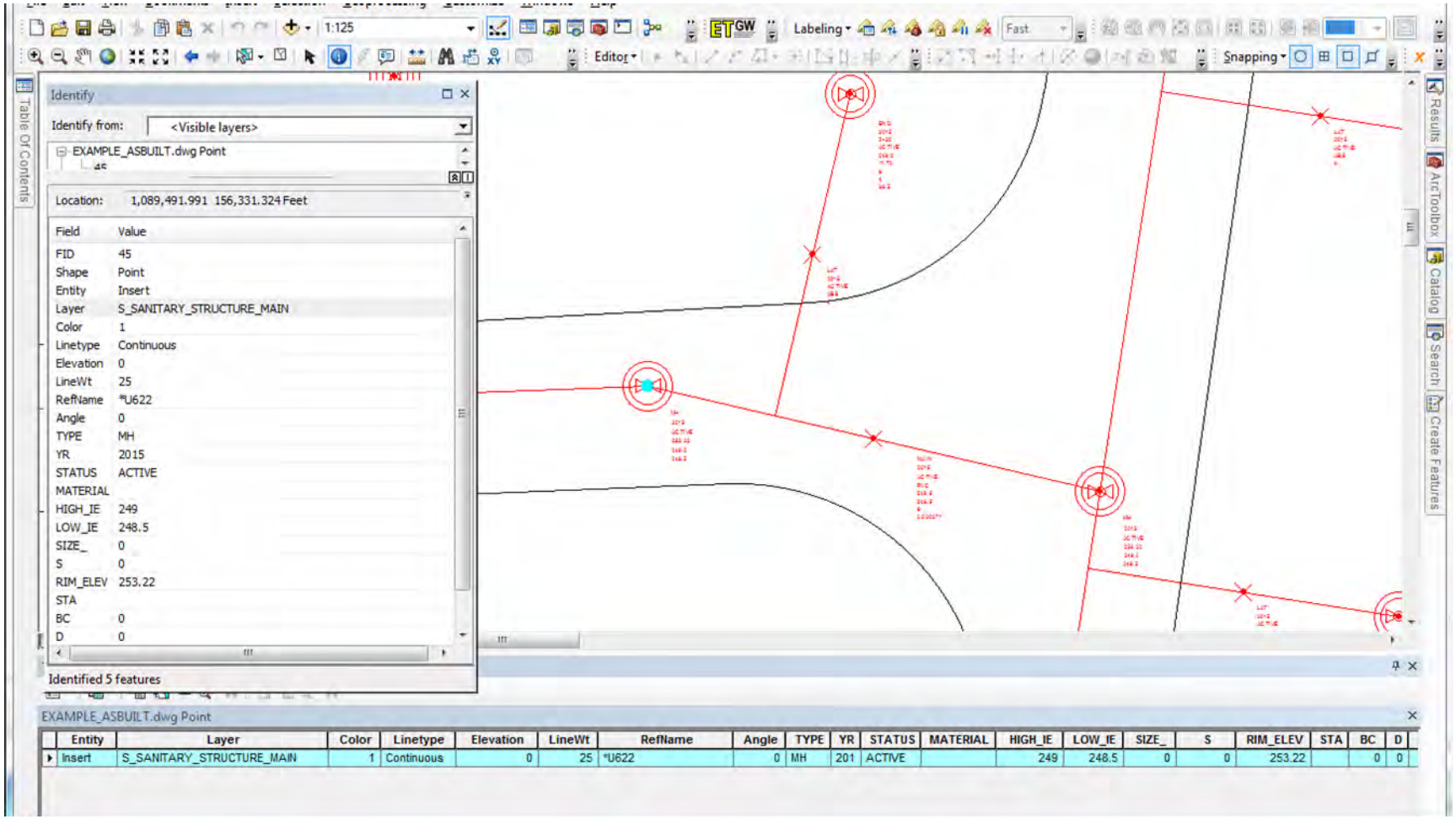

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Table Of Contents
Results
ArcToolbox
Catalog
Search
Create Features

Considerations

- Data accuracy required
  - Cost implication and do you need it?
- Get outside help
- Grants and discounts
- Include other departments
- Training
- How much change can you handle?

Is Cloud best?

Budgeted differently – not capex

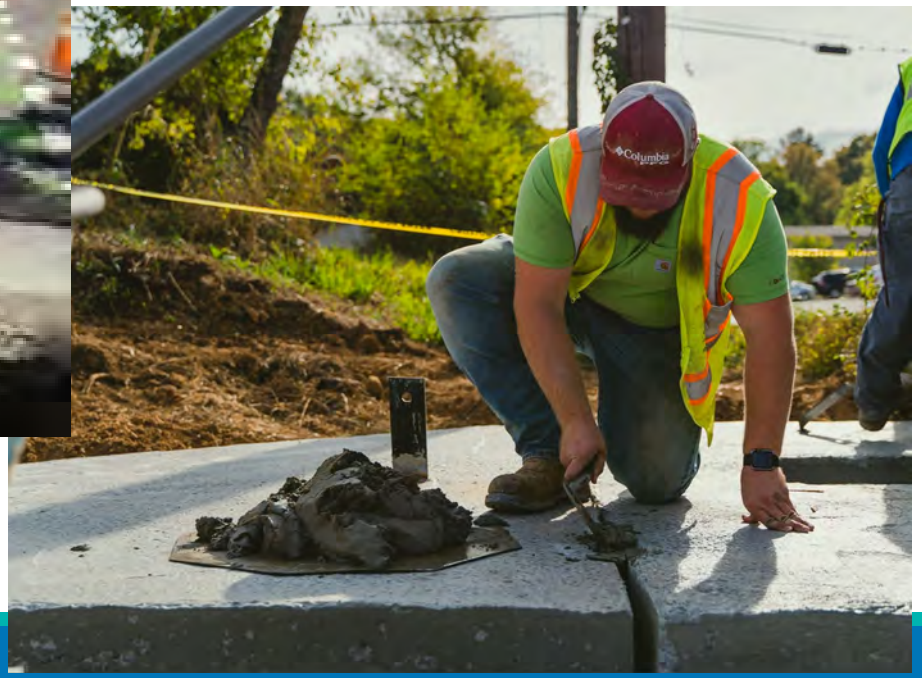
Hosted software offers a lot of advantages, especially with GIS and AMS

- No software installation – any device
- Usually easy to use (after setup)

Most AMS have a cloud hosted offering, with mobile and web apps

GIS does too (e.g. Esri ArcGIS Online)

Migrating between vendors can take some work – mostly for apps (data migration is easy)



GIS/AMS Scenarios

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The Minimalist (AMS only)

No GIS staff, all cloud

Minimal/no location data, infrequent asset updates

Use contractors

Send to AMS provider to host

Pro:

- Easy to set up
- Know it works
- Low cost
- One system

Con:

- Less control
- Data maintenance and frequency limits
- Cost of data additions and changes
- AMS will not convert data

The Minimalist (GIS only)

No GIS staff, all cloud

Minimal/no location data, infrequent asset updates

Use contractors

Set up GIS maps and basic functionality in AGO

Pro:

- Easy to set up
- Know it works
- Low cost
- One system
- Extra GIS tools included

Con:

- May have to build AMS–type functions
- Cost of data additions and changes

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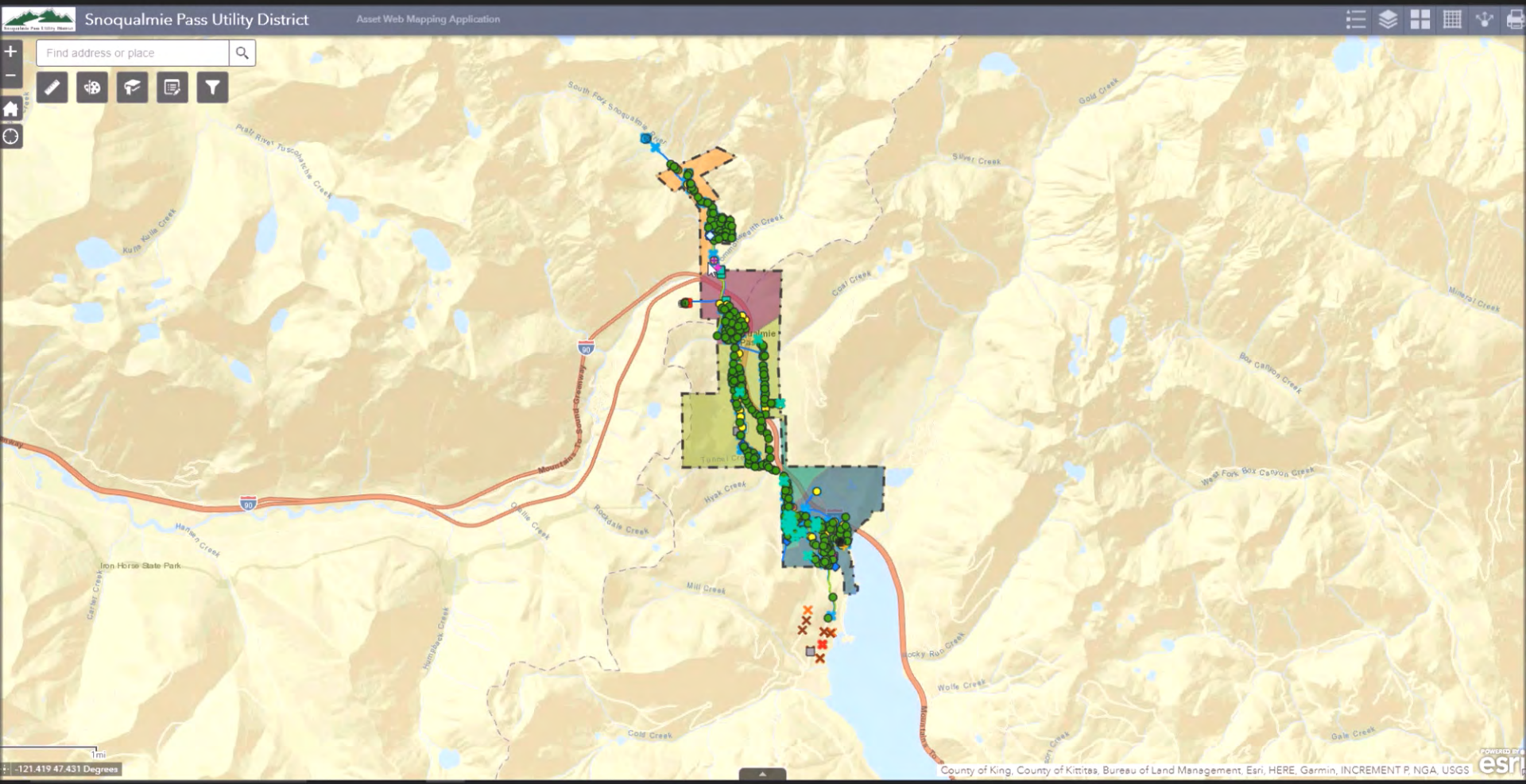

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The Best-in-breed

Any level of GIS staff/skills, cloud preference

Minimal to good data, irregular but time sensitive updates

Want additional maps and tools

Specialized systems: Host in own cloud GIS, connect to AMS

Use contractors as needed for capacity

Pro:

- Lots of control
- Applications (maps, dashboards, field tools) outside AMS
- Highest functionality

Con:

- Additional cost
- Data maintenance decisions
- Training

The Enterprise

Have GIS and IT staff, happy to host or cloud

Lots of data, frequent updates

Want additional maps and tools and capabilities

Integrate with internal systems

Enterprise GIS

Pro:

- Lots of control
- Applications (maps, dashboards, field tools) outside AMS
- Integrations like CCTV DB
- Most flexible
- Can still use cloud

Con:

- Generally the most expensive option
- Needs staff to manage it
- More complicated

GIS beyond AMS

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Maps

About
Content
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Legend
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Size_
> 48
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Other
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4" CSP
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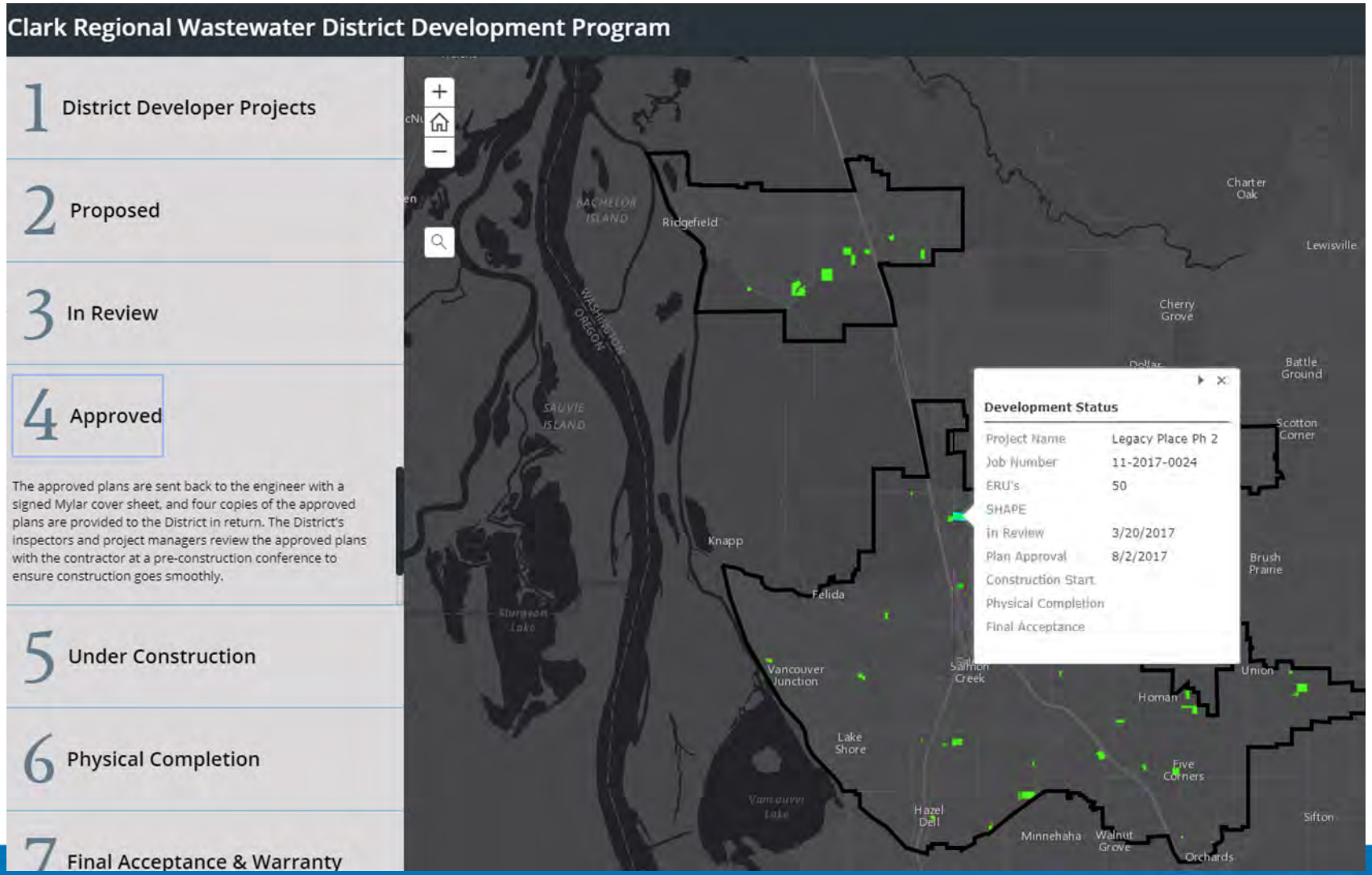
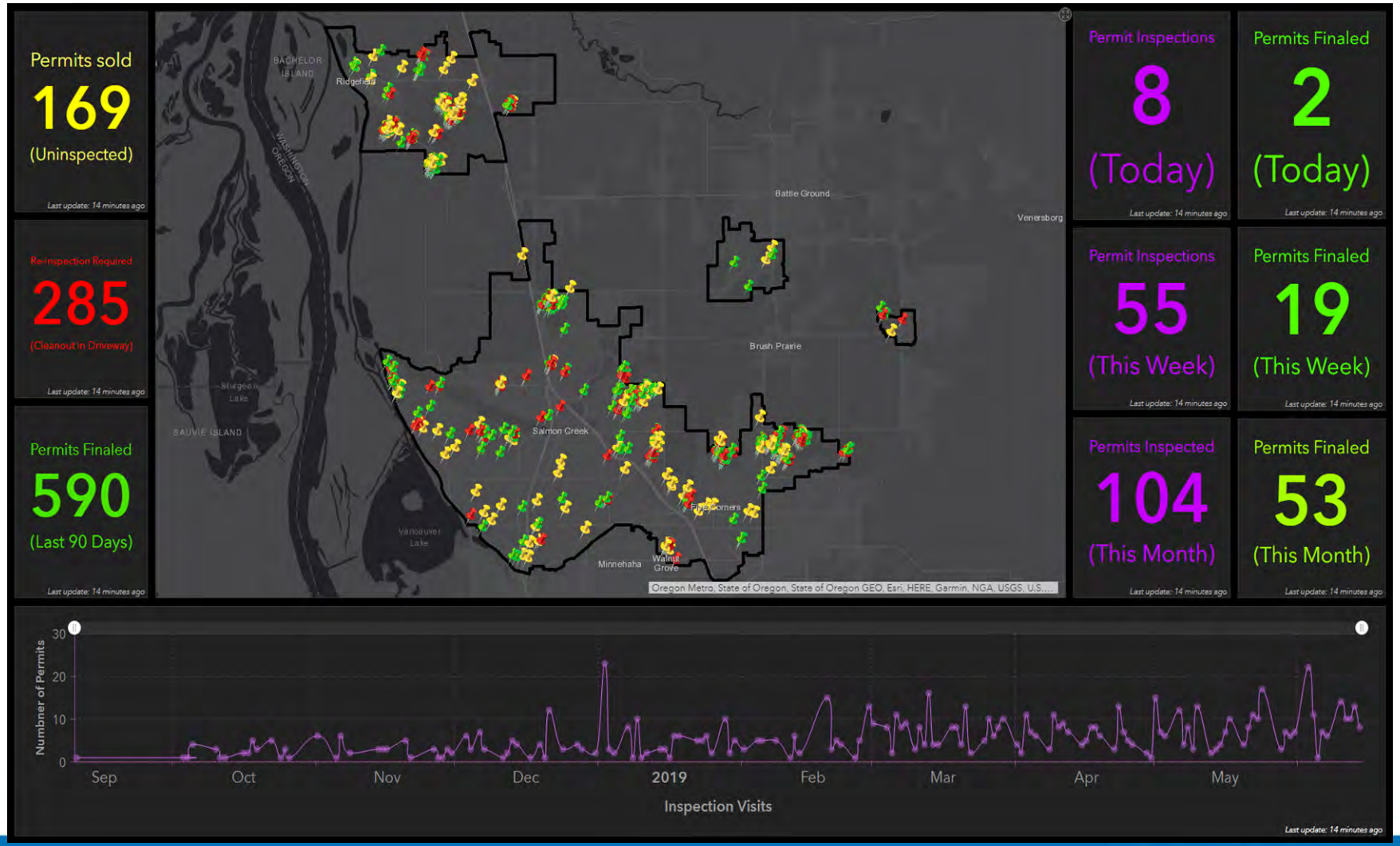
Contextual apps



Dashboards



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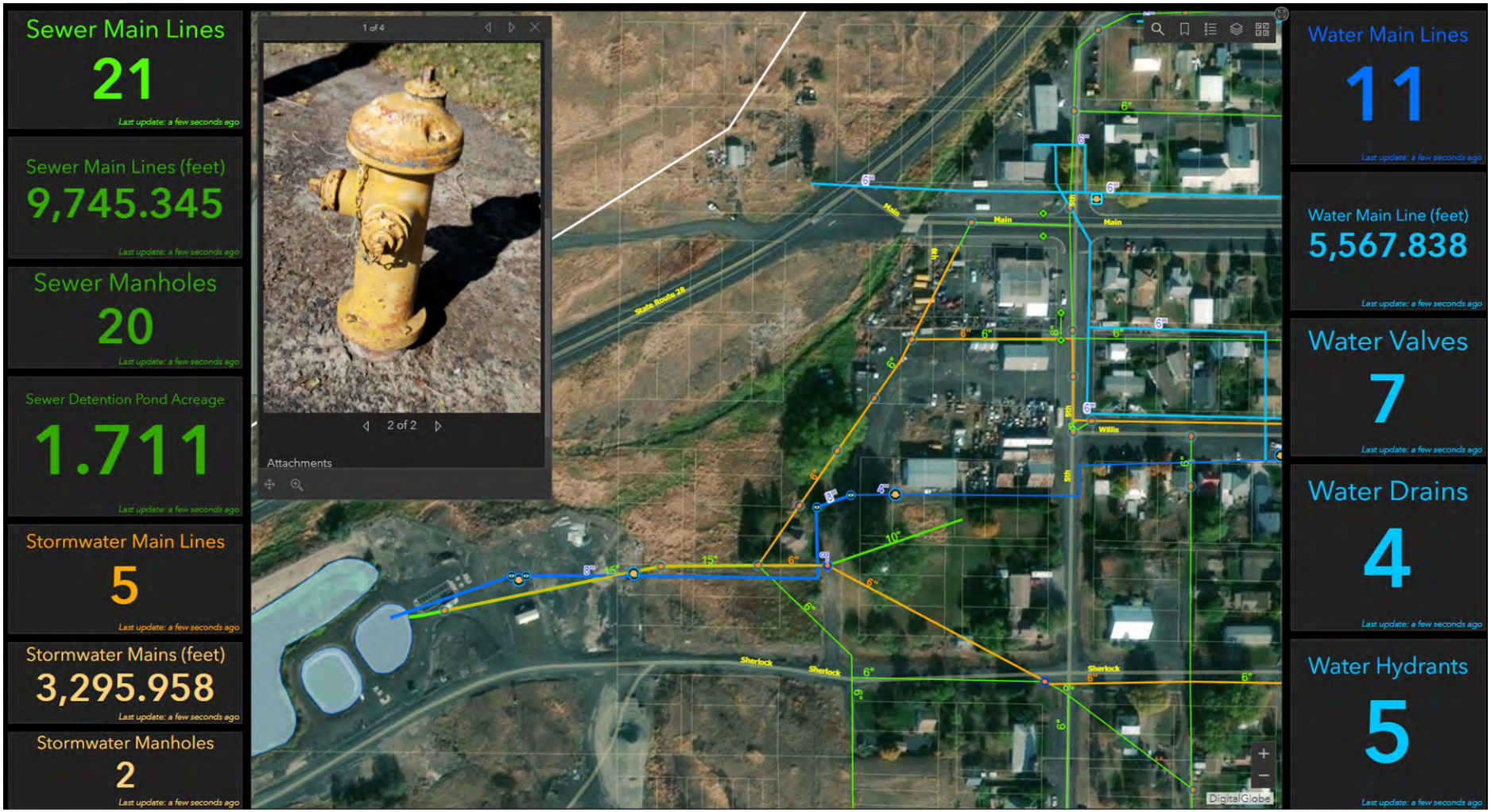
Dashboards



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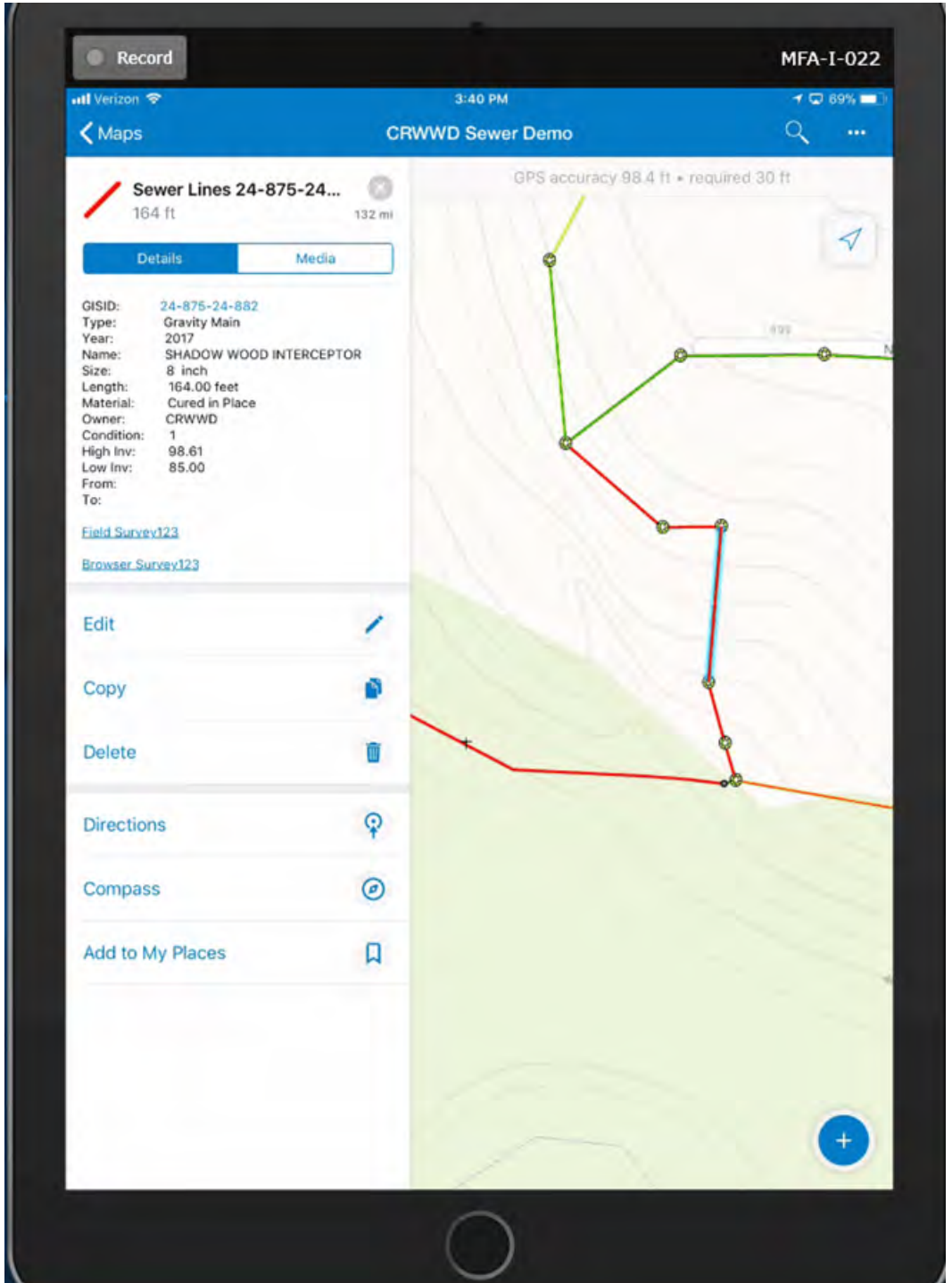
Integrations

Multiple systems working together



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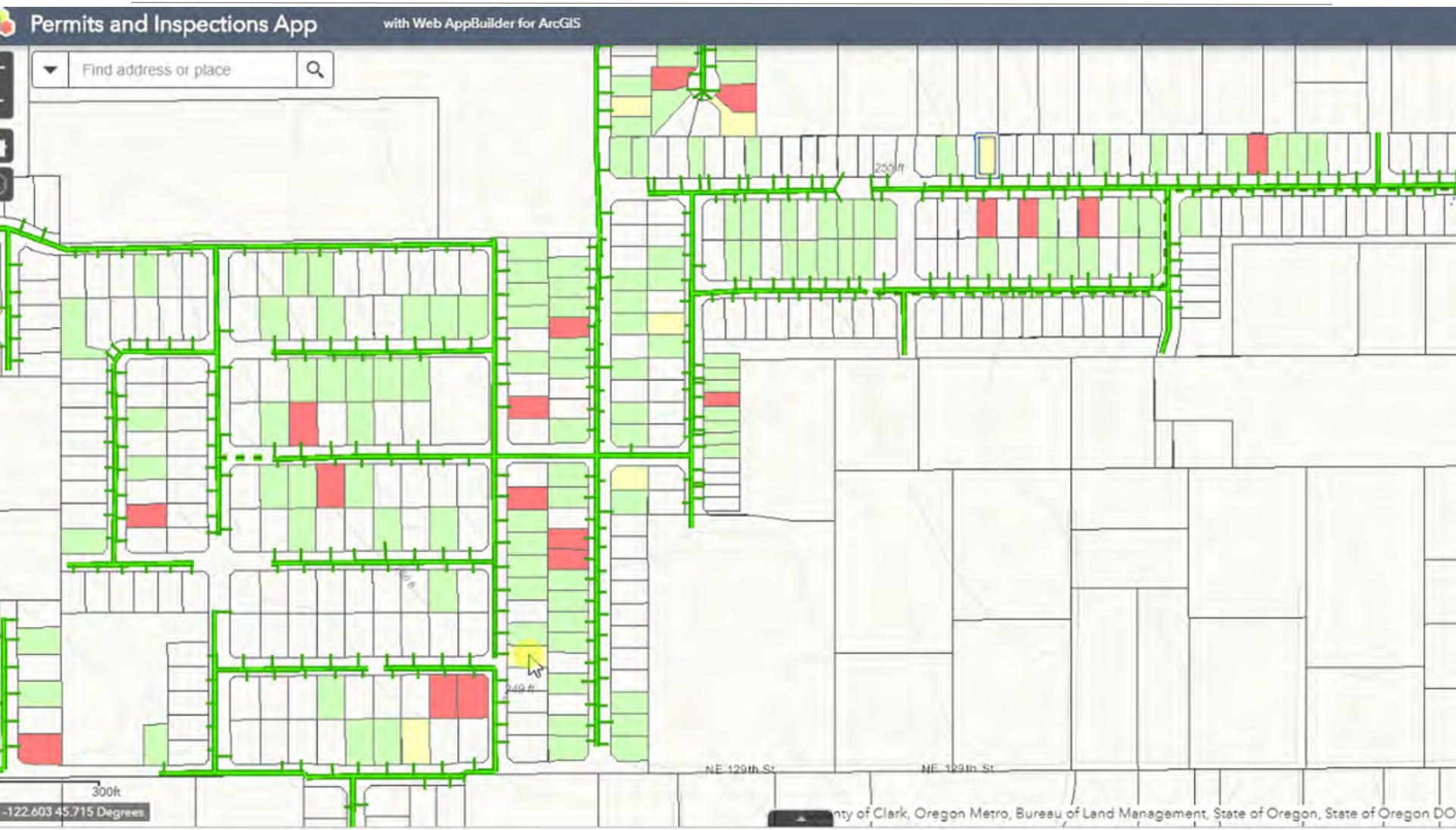

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Analytics

Augmented Reality

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Summary

Start with your vision

GIS data is your foundation

AMS+GIS returns tangible efficiency gains and savings

- Hours of time
- Quicker answers

Build as you go

AWC
ASSOCIATION OF WASHINGTON CITIES

GIS Consortium

BUILDING SMARTER COMMUNITIES

Questions?

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