

Making the Most of Maximo and ArcGIS Integration

Andy Stewart
ActiveG - Managing Partner

March 19, 2024

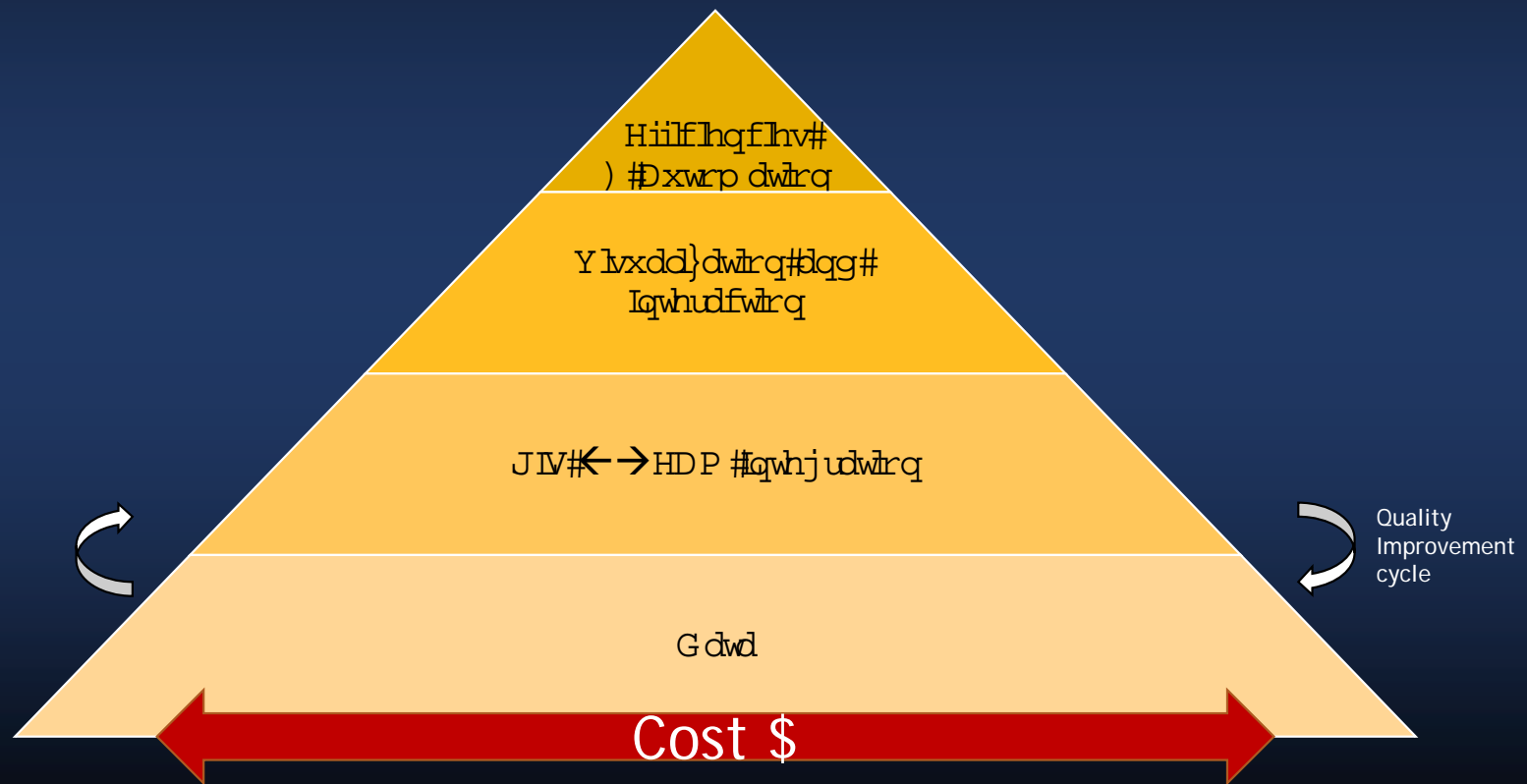


Quirkology Channel

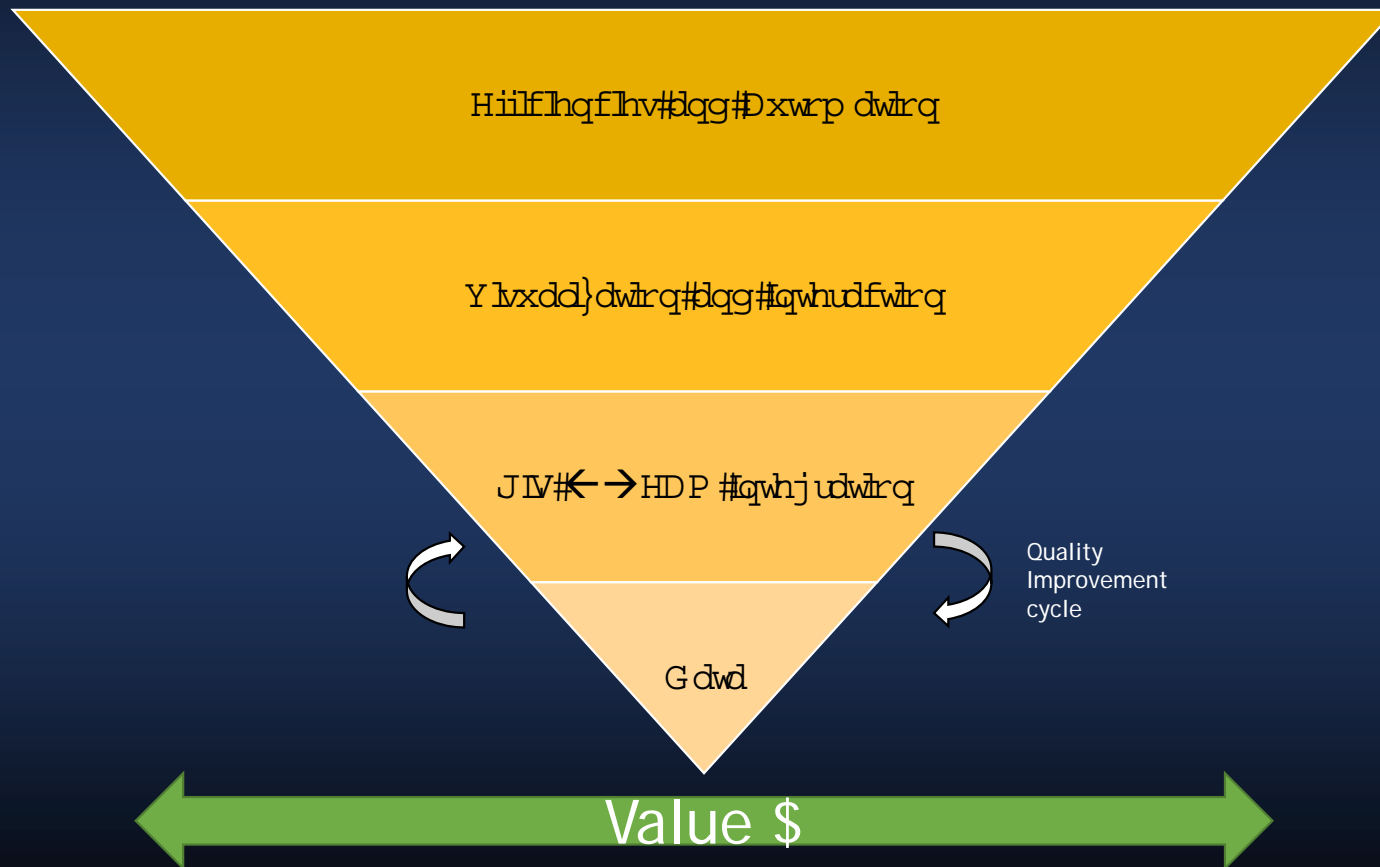
ASSUMPTIONS

www.RichardWiseman.com

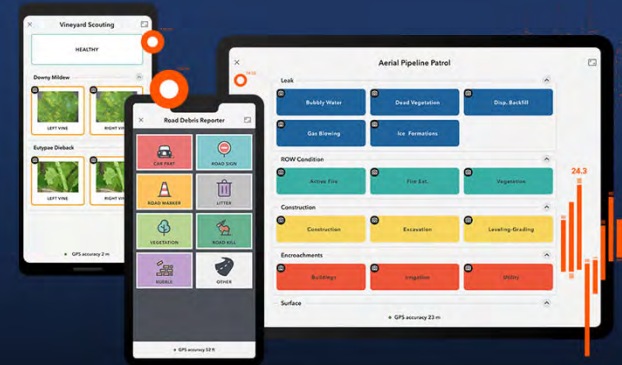
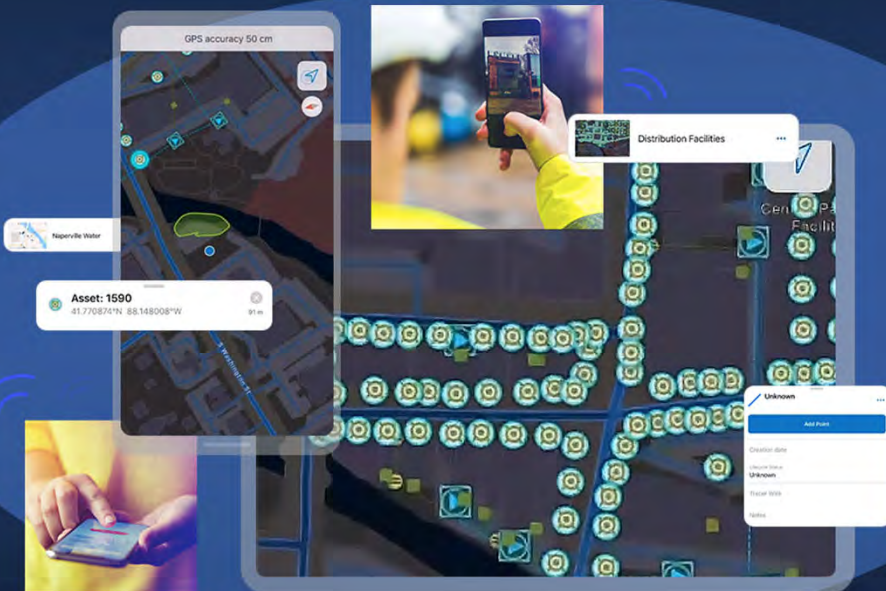
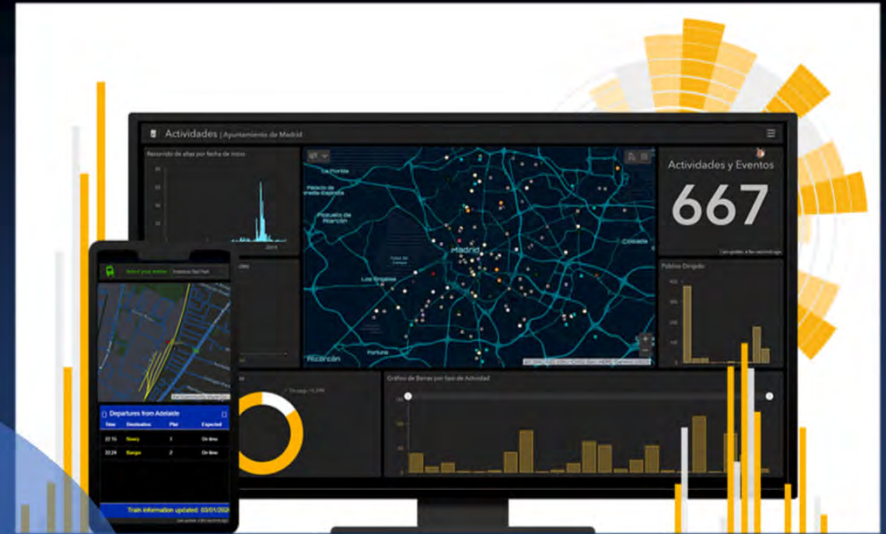
Building the GIS/EAM integration pyramid



Building the GIS/EAM integration pyramid



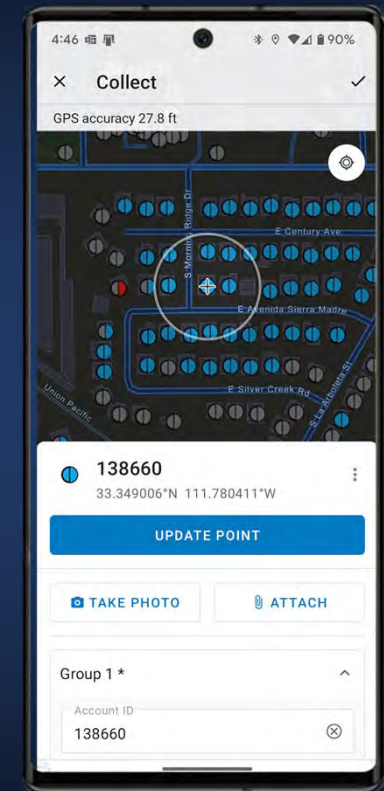
Esri Solutions



Esri Field Apps

Esri Field Apps help you to:

- Create and configure maps to fit your organization's Maximo and GIS workflows.
- Collect and update information in the field and log your current location.
- Use the apps online or offline—regardless of your network availability.



Reasons companies choose ArcGIS/Maximo Integration

Leak Report

Break Location?*

Service Line Main Line

Is Field Services needed for a repair?*

Yes No

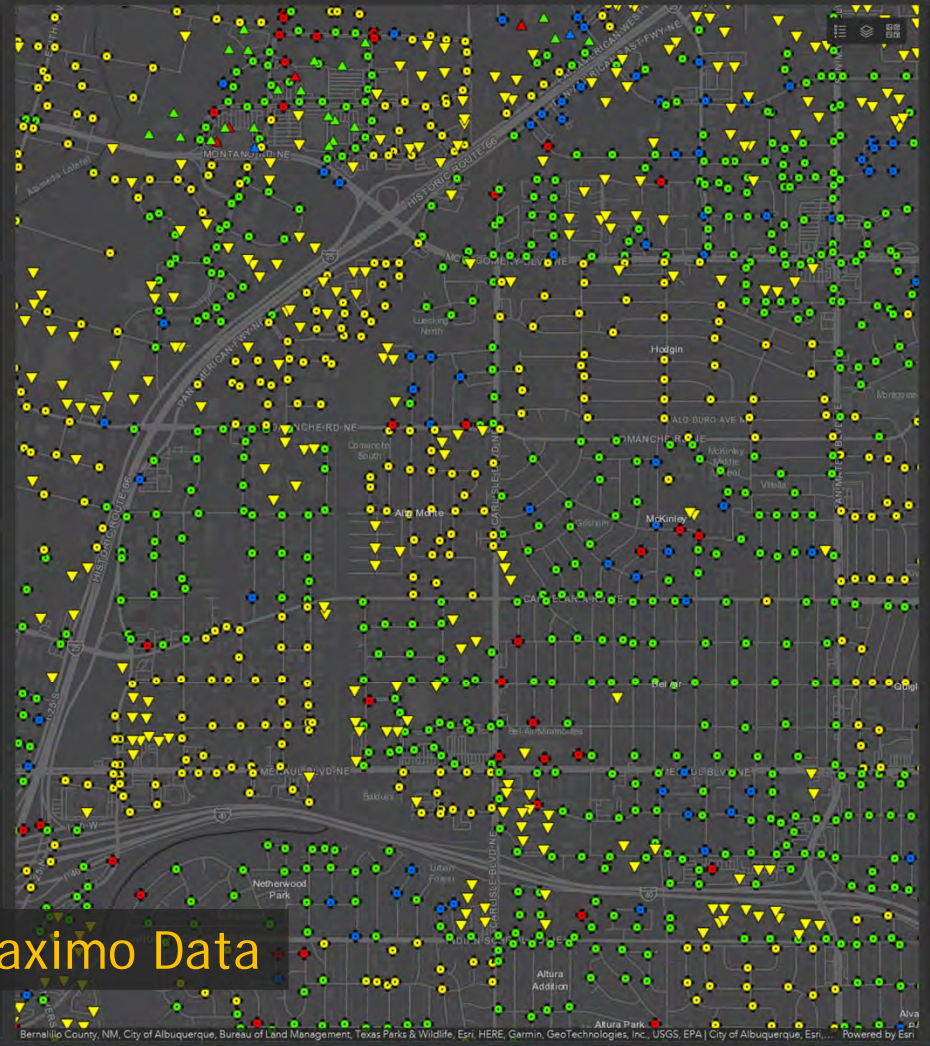
Water Loss? (Gallons)

Cause of Leak?

- Easy to configure and deploy
 - No coding required
- Spatial visualization baked into the entire process
- Easy to tailor the process to client needs
- Robust reporting
- Closed loop
 - Report → Validate → Repair → Report
- Simple, effective user interface

| | |
|--|---|
| <p>WUA Hydrants</p> <p>819</p> <p>Waiting Inspection</p> <p><small>Last update: 13 seconds ago</small></p> | <p>WUA Hydrants</p> <p>15,802</p> <p>Passed</p> <p><small>Last update: 13 seconds ago</small></p> |
| <p>WUA Hydrants</p> <p>605</p> <p>Failed (Total)</p> <p><small>Last update: 17 seconds ago</small></p> | <p>WUA Hydrants</p> <p>1,189</p> <p>Needs Attention (Total)</p> <p><small>Last update: 17 seconds ago</small></p> |
| <p>WUA Hydrants</p> <p>207</p> <p>Inoperable (Current)</p> <p><small>Last update: 17 seconds ago</small></p> | <p>WUA Hydrants</p> <p>1,142</p> <p>Needs Attention (Current)</p> <p><small>Last update: 17 seconds ago</small></p> |
| <p>WUA Hydrants</p> <p>149</p> <p>Repaired (QA)(Inop)</p> <p><small>Last update: 17 seconds ago</small></p> | <p>WUA Hydrants</p> <p>11</p> <p>Repaired (QA)(NA)</p> <p><small>Last update: 17 seconds ago</small></p> |
| <p>WUA Hydrants</p> <p>249</p> <p>Repaired (Inop)</p> <p><small>Last update: 17 seconds ago</small></p> | <p>WUA Hydrants</p> <p>36</p> <p>Repaired (NA)</p> <p><small>Last update: 17 seconds ago</small></p> |

| |
|--|
| <p>Private Hydrants</p> <p>2,276</p> <p>Waiting Inspection</p> <p><small>Last update: 18 seconds ago</small></p> |
| <p>Private Hydrants</p> <p>1,875</p> <p>Passed</p> <p><small>Last update: 18 seconds ago</small></p> |
| <p>Private Hydrants</p> <p>23</p> <p>Needs Attention</p> <p><small>Last update: 18 seconds ago</small></p> |
| <p>Private Hydrants</p> <p>198</p> <p>Failed</p> <p><small>Last update: 18 seconds ago</small></p> |



1 of 200

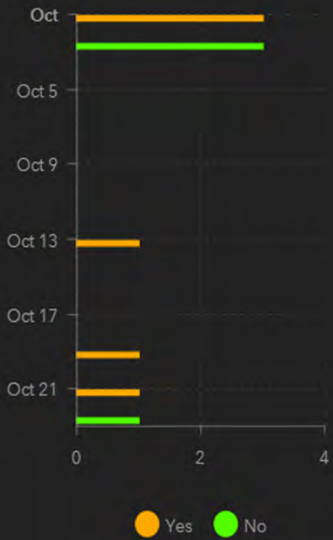
LAST 200 WUA HYDRANT INSPECTIONS

HydrantInspections: 22338

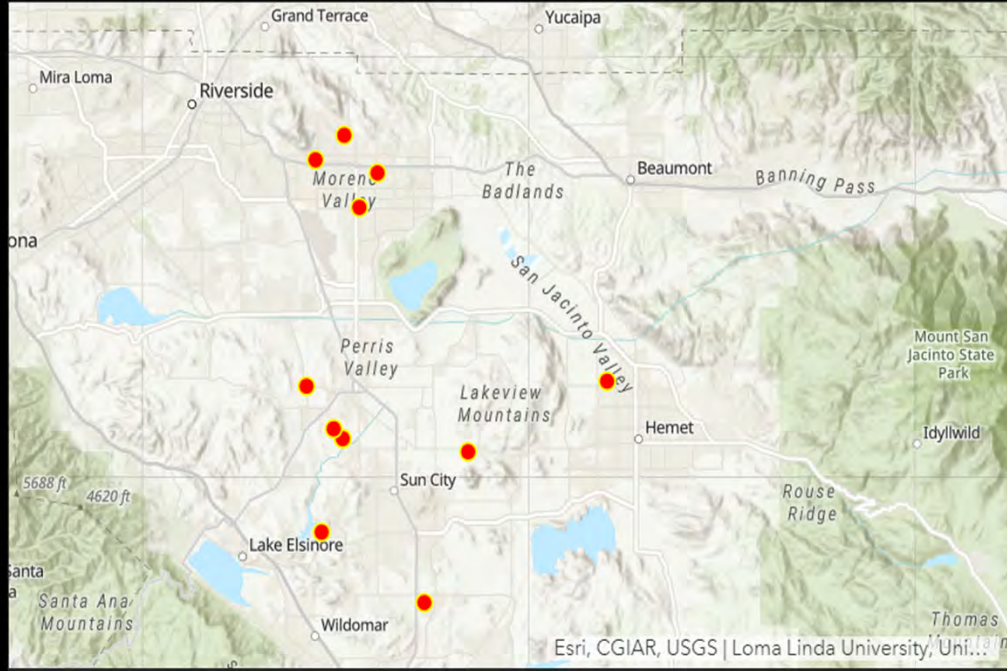
| | |
|--|------------------------|
| CreationDate | 9/20/2022, 10:56 AM |
| AssetNUM | 22338 |
| Inspector Badge Number | 163 |
| Missing hydrant? | No |
| Water flow problem? | No |
| Stem nut problem? | Operable |
| Cap frozen? | No |
| Threads damaged? | No |
| Leaking? | No |
| Will not drain? | No |
| Loose hydrant? | No |
| Damaged barrel? | No |
| Brown water? | No |
| Mapping error? | No |
| Horizontal clearance? | No |
| Needs paint? | No |
| Needs chains? | Yes |
| Turned wrong way? | No |
| Needs Lowered or Raised? | No |
| Needs attention? Leave notes. | No |
| Notes | |
| Inspection Status | Waiting for Inspection |
| Workorder num | |
| Creator | Station36_BCFD |
| <small>Last edited by Station36_BCFD on 9/20/2022, 10:56 AM.</small> | |

[All Inspections](#) [Private Inspections](#)

Leak Surveys by day



Last update: a minute ago



Esri, CGIAR, USGS | Loma Linda University, Uni...

1 of 13

Leak_Report_PROD: 15

CreationDate: 10/22/2020, 6:05 AM

Creator: brenneia_EMWD

wonum: 3264184

Break Location?: Main Line

Is Field Services needed for a repair?: No

Water Loss? (Gallons)

Cause of Leak?: JOINT FAILURE

Pipe Size?: 08

Pipe Type?: Dipped & Wrapped

Last update: a few seconds ago

Total Surveys

13

Last update: a few seconds ago

Need Field Services

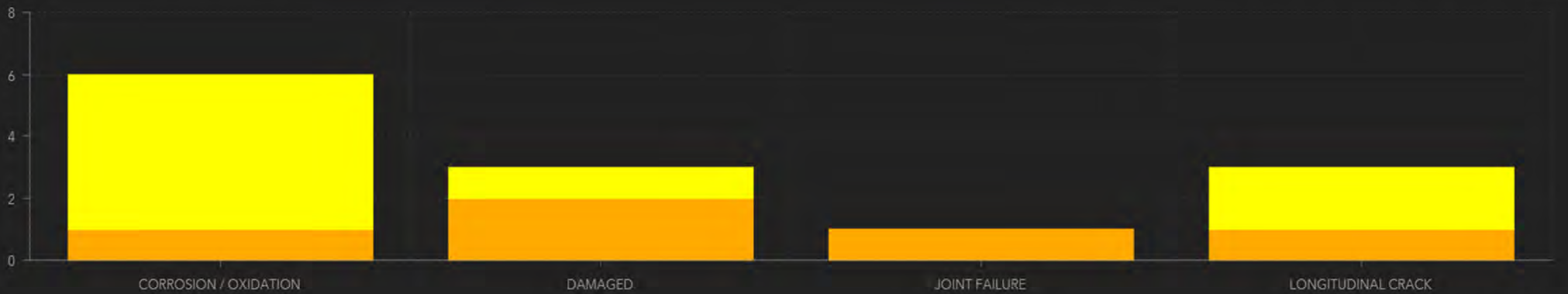
8

Last update: a few seconds ago

No Field Services

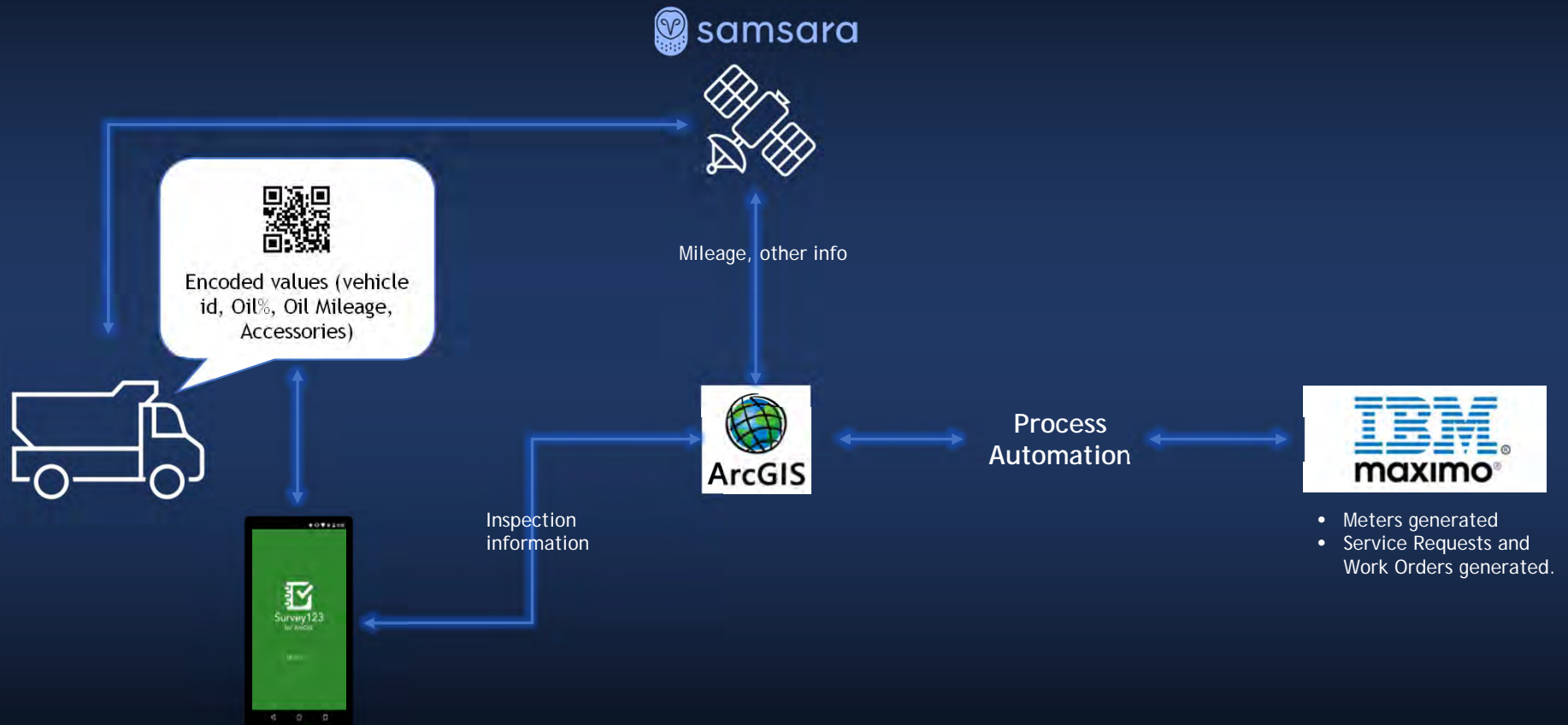
5

Last update: a few seconds ago



Last update: a few seconds ago

Fleet safety and maintenance management with ArcGIS



General Search...

- Tamping (WAPPR)
- Tamping (COMP)
- Tamping (APPR)
- Drainage

Basemaps

- Base
- Rail

Track Conditions

- Geometry Faults
 - Gauge
 - Superelevation
 - Twist
- Mitigations
- Risk ID
- SD Faults
 - Good (0-1)
 - Fair (1-2)
 - Poor (2-3)
 - Very Poor (3-4)



Transit Rail Maintenance

☰ 📖 🏠 📍 🏠 👤
 General
 ← **WO:** 2128 < 1 >

Description: Water in the stairway

Status: WAPPR

Location: SD.SDCC.1.3.3196

Lead: WATTERS

Asset #: null

Work Group: FACILITY

Field Assignment: null

 Edit WO ▶ Set XY Values ▶ Select Child WOs ▶ Logs
 Find Vehicle ▶ Add to Maximo List ▶ Street View

🔄 Select a Layer 🟢 WO ⚙️
 2128: Water in the stairway
 1807
 3 ✖ 📍

Indoor GIS & Maximo Work Orders

Emergency Dispatch

Background: Rapid response to reported gas leaks is critical. Client needed a way to assign the nearest, available, qualified crew to gas emergency work orders.

The screenshot displays a software interface for emergency dispatch. On the left, a sidebar contains a menu, search bar, and job details. The main area shows a map with a blue route and several red location markers. A text box titled '3 Parts:' is overlaid on the map, listing three key features of the system.

3 Parts:

- Visualize real-time vehicle locations (originating from Fleetboss) via Esri map services provided
- List of vehicles closest (est. travel time) to a reported leak (Maximo work order).
- Assign emergency work order to closest vehicle with relevant skills (Maximo labor/skills)

Job Details:

Job Code: 290 - Leak Repair
Description: Leak Repair Workorder
Status: APPR
Location: LKMX2135016
Address: 167 JEFFERSON AVE RAHWAY, NJ 07065
Asset: 2320467 - R 275 Temperature Compensated
Field Lead: null - null

Find Vehicle **Add to Maximo List**

| Name | Travel(min.) | Miles |
|----------------------------|--------------|-------|
| Cape May Utility Worker #4 | 65 | 56.8 |

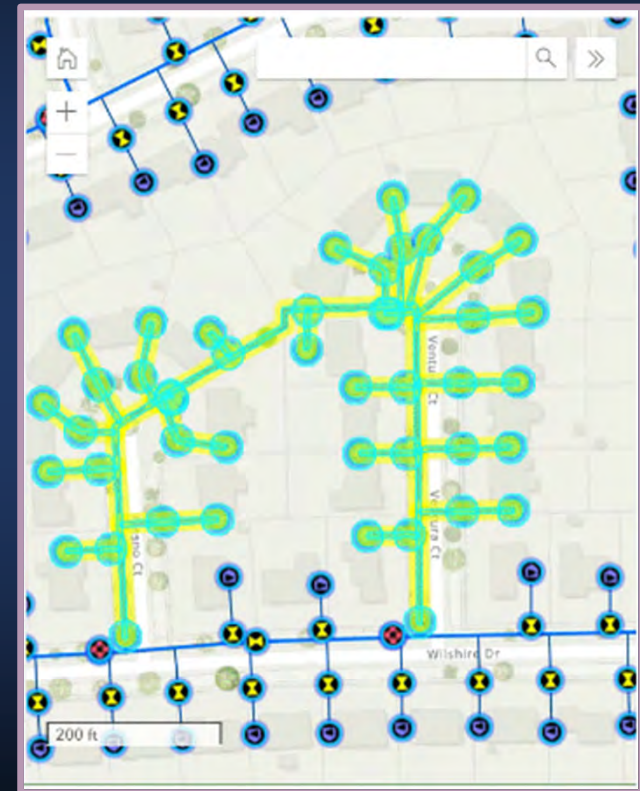
Filter **Assign**

Introduction to Esri Utility Network

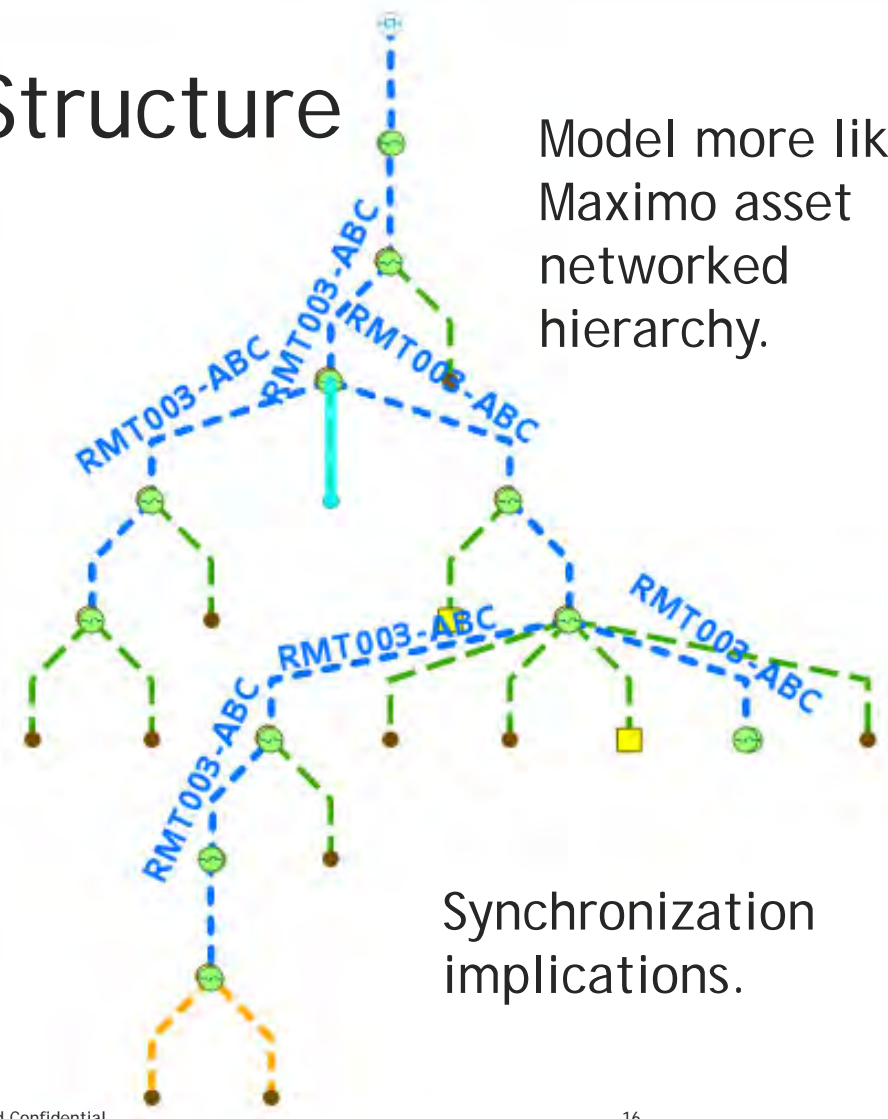
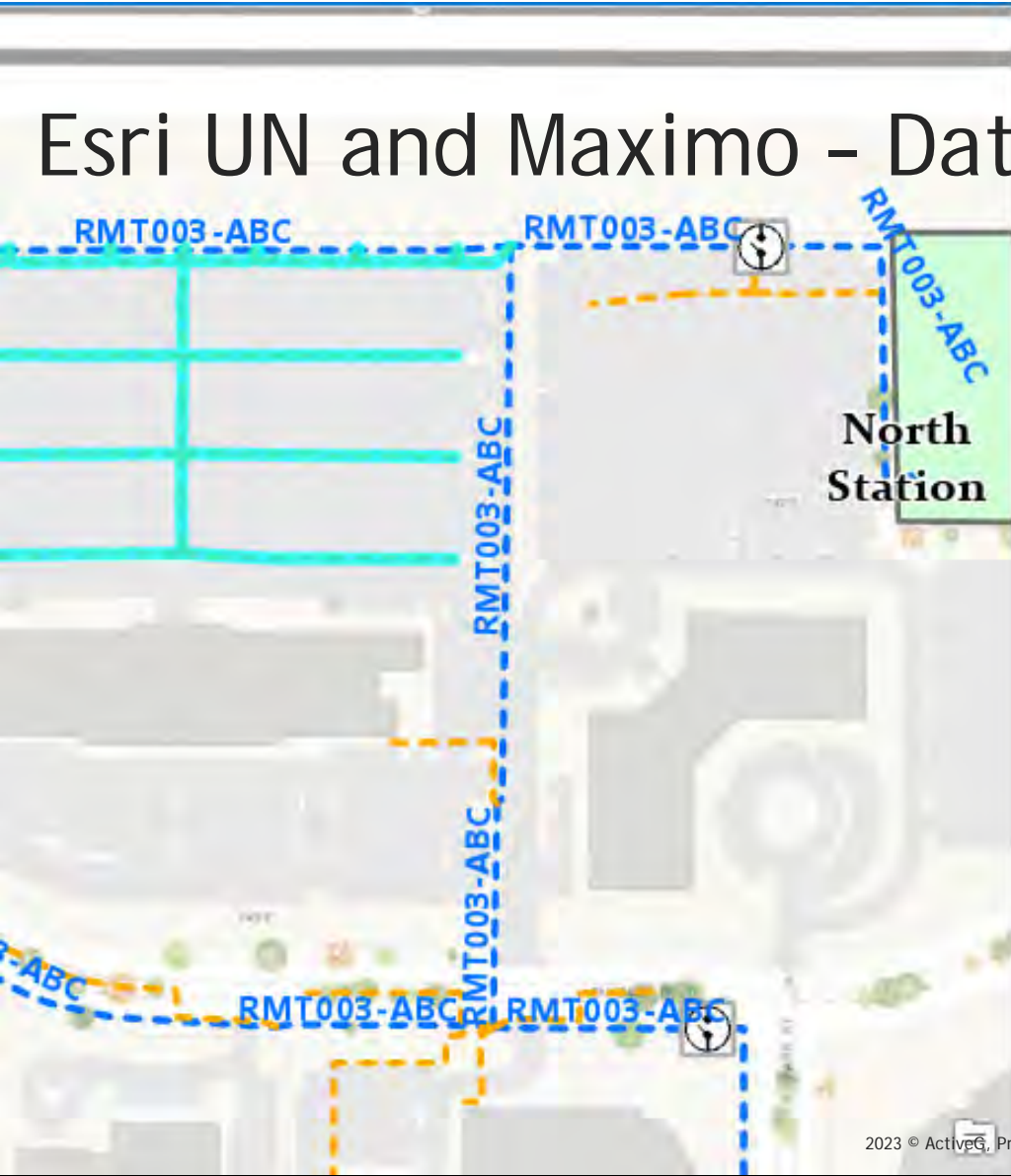
- Advanced GIS framework
- Manages complex utility & infrastructure data
- Offers detailed modeling, analytics, real-time management
- Offers a more advanced and flexible data model that supports a **multi-tiered network architecture**

Key Features of Utility Network

- Detailed network modeling capabilities
- Supports diverse utility types (electric, water, gas, etc.)
- Enhanced data validation rules
- Multi-user editing & web service integration



Esri UN and Maximo - Data Structure

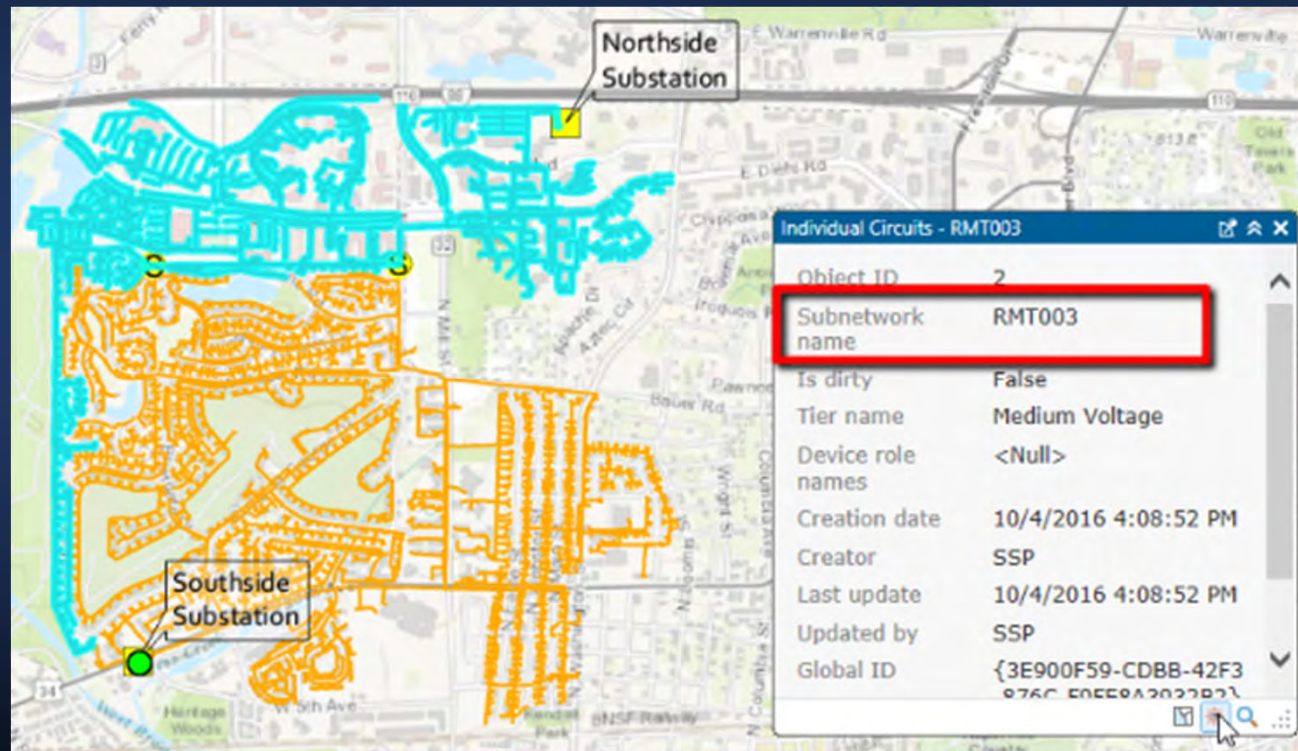


Model more like Maximo asset networked hierarchy.

Synchronization implications.

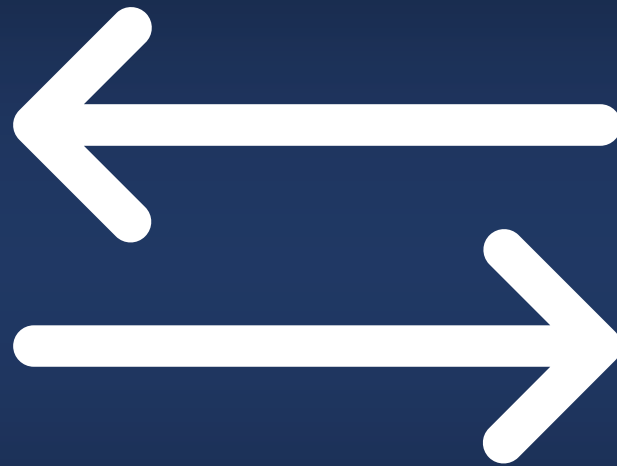
Esri UN and Maximo - Tracing

- Trace network features upstream or downstream from a given location.
 - water utilities can determine which valves to shut off when a pipe bursts.
 - an outage from an electrical network can affect the delivery of another resource, such as gas or water.

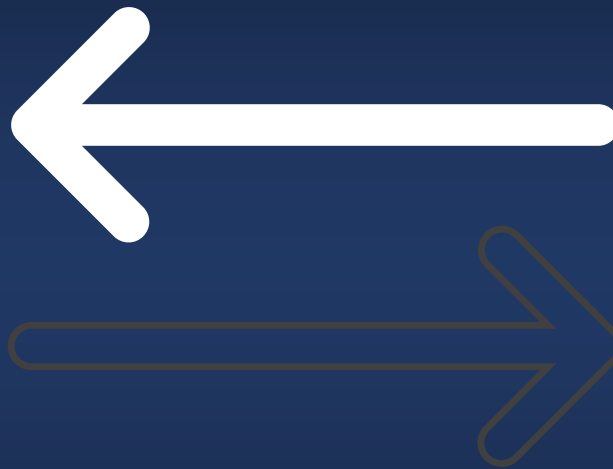


4 Keys to Useful GIS/Maximo Integration

- Start with data sync
- Only sync essentials needed for decisions
- Build fit-for-purpose processes
- Leverage location intelligence to streamline user experience



Start with data sync



Only sync essentials for decisions

Build fit-for-
purpose
processes

4:20 92%

Transmission Line Inspection

Notes: System 10

Insulator problem

L Insulator - Top R Insulator - Top

L Insulator - Mid R Insulator - Mid

L Insulator - Low R Insulator - Low

Lattice Steel Problem

Goat Head

Main Body

Feet

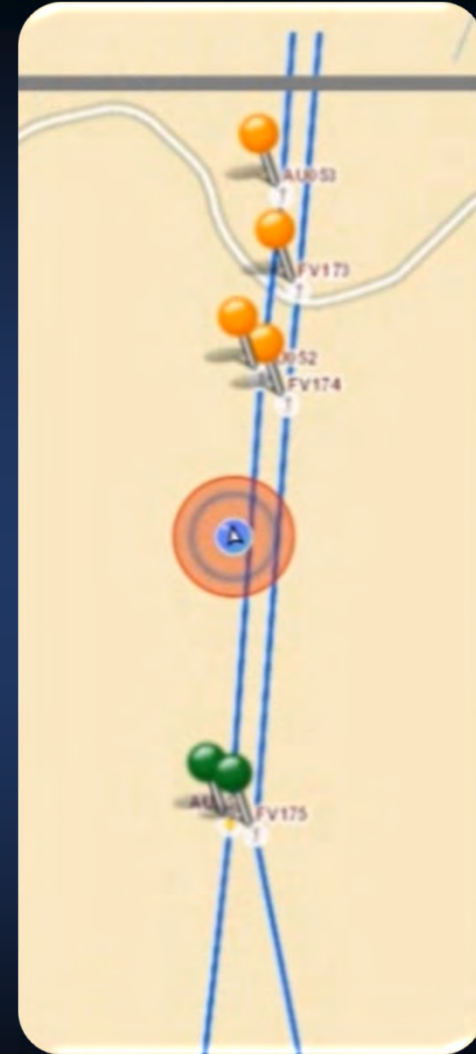
Foundation problem

BURIED BACKHOE

GPS accuracy 86 ft



Leverage location intelligence to streamline user experience



4 Keys to Useful GIS/Maximo Integration

- Start with data sync
- Only sync essentials needed for decisions
- Build fit-for-purpose processes
- Leverage location intelligence to streamline user experience