The Power of Innovation: Technology That Transforms Infrastructure

QP SERVICES

Who We Are

QP SERVICES

We specialize in the operations and maintenance of critical federal, state, and local water / wastewater infrastructure.

Our mission is to provide services that improve utility system integrity and community access to an essential natural resource, clean water. Our comprehensive service offerings include the assessment, rehabilitation, maintenance, and expansion of municipal utility systems.

We endeavor to build trusted relationships with municipalities that:

- Identify problems before they become costly issues,
- Reduce the maintenance workload on an already time-constrained and diminishing workforce,
- Prioritize critical maintenance and repairs, and
- Extend the longevity of our community utility systems.

Manhole Rehabilitation & Protection

QP SERVICES

SPRAYROQ
PROTECTIVE LINING SYSTEMS

Maintain And Repair

CIPP Solutions

Infrastructure Installation & Repairs

Jetting / CCTV

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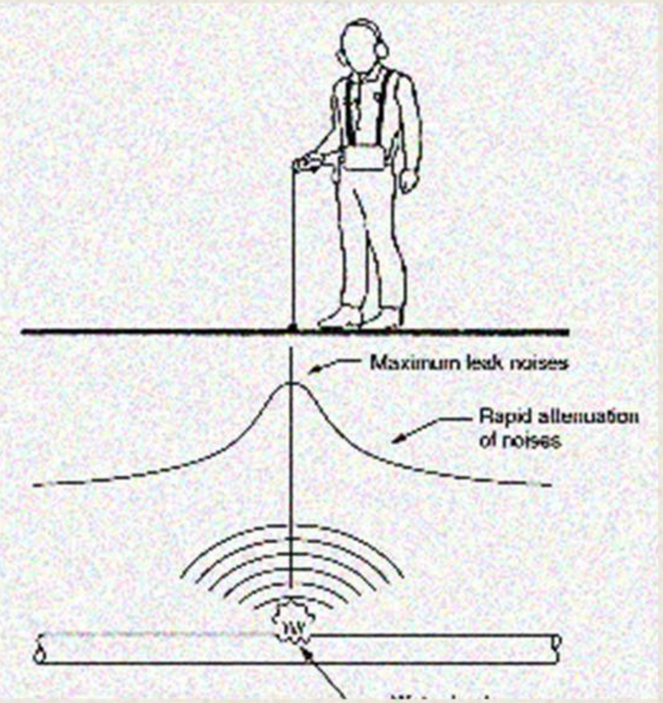
Water Leak Detection



Our Water Leak Correlator is a cutting-edge device designed to revolutionize water leak detection & localization.

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Colorado by the Numbers

Did You Know …..

- We've performed acoustic assessments on over 5 million LF of pipe in Colorado
- QP Services has virtualized over 1800 manholes throughout the state this year
- Over 20,000 level 1 inspections have been performed by QP Services in 2025
- Over 50 Colorado communities served in 2025 (and Counting!)

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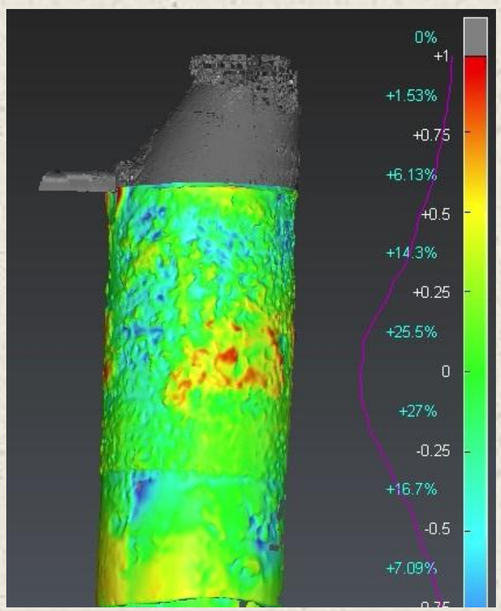
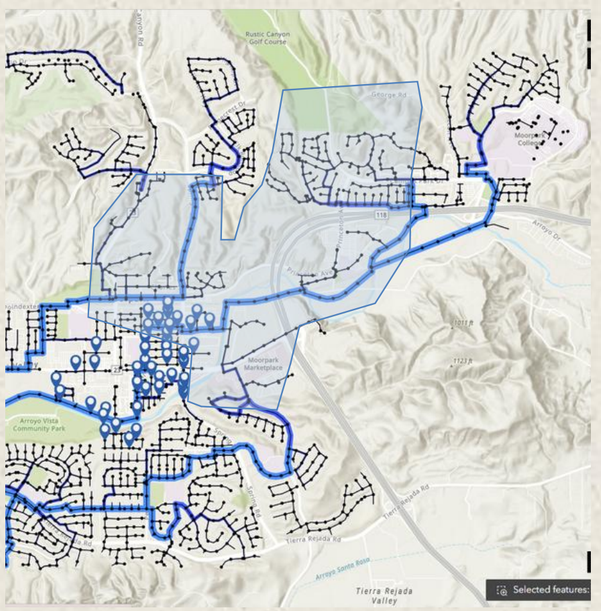
DELIVERING DATA TO SMART CITIES

Condition-Based Collection System Maintenance

Acoustic Assessment



Manhole Virtualization



I&I Assessment

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New Technology - Acoustic Inspection

SL- Rapid Assessment Tool

- Developed by InfoSense in 2008 (Ivan Howitt)
- WEF Technology Innovation Award Winner 2012
- Recommended by EPA
- Holds ASTM Standard for use
- Used by hundreds of utilities worldwide
- RH Borden Services 150+ US Municipalities

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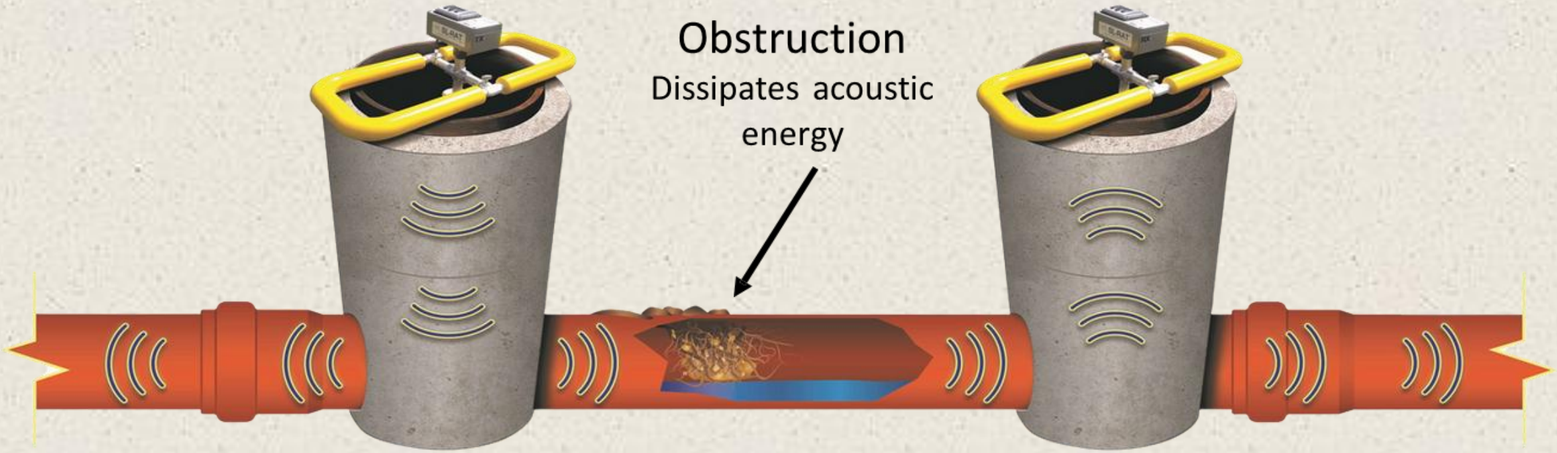
How it Works

Transmitter

80 Seconds 20,000 ft/day

Receiver Analyze



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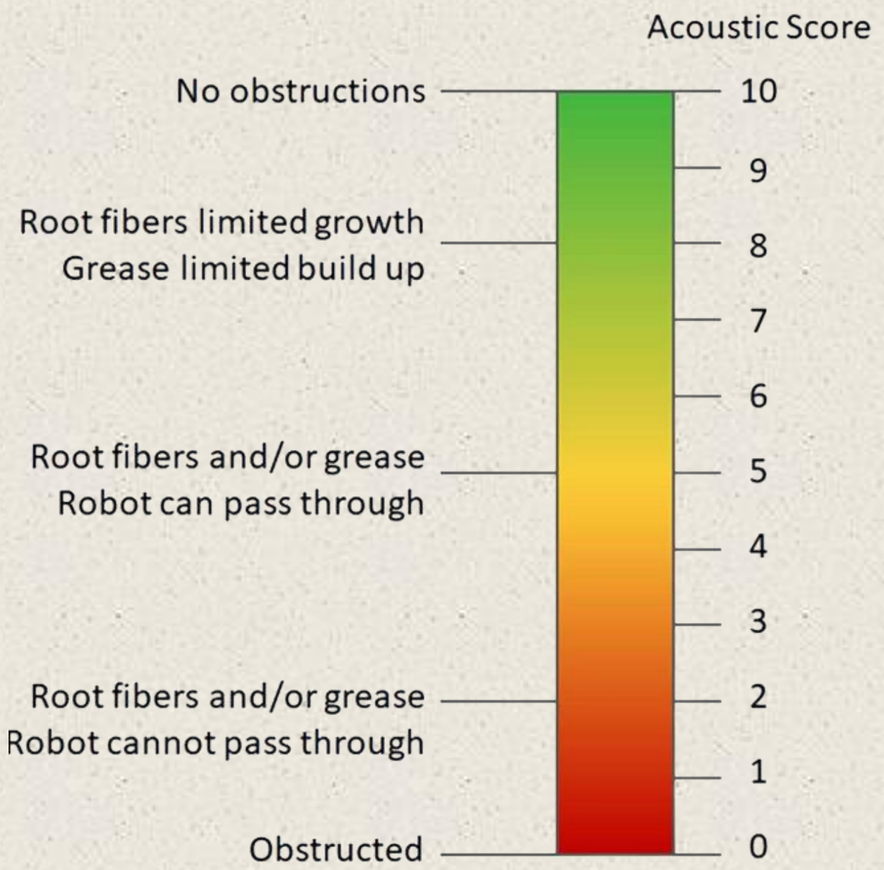
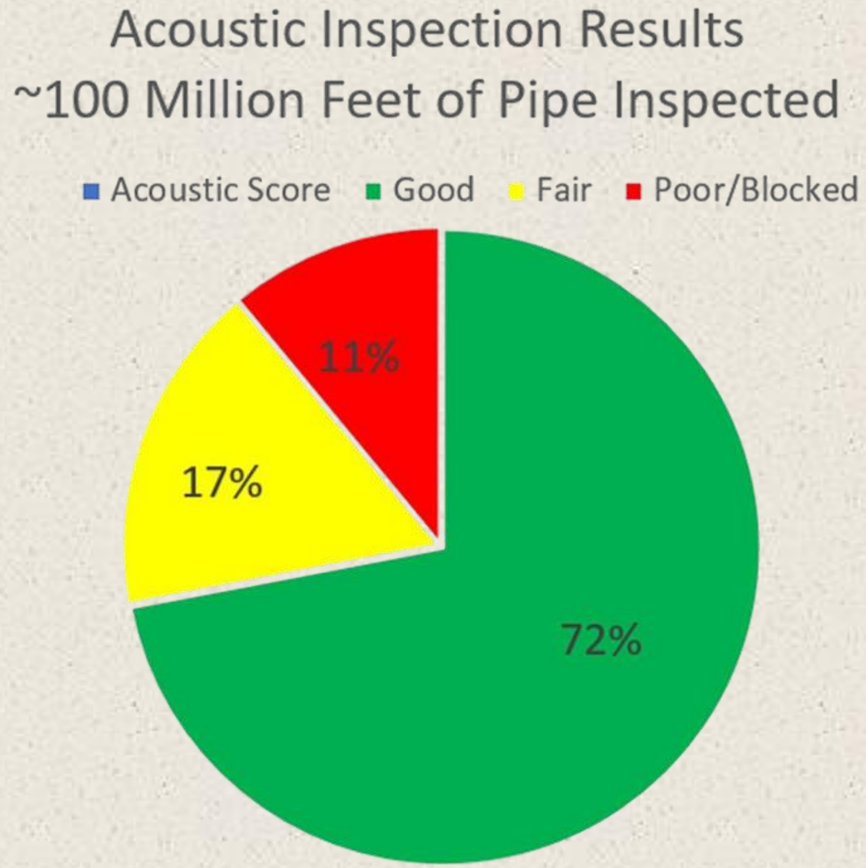
SL-RAT Assessment Scale – National Trends





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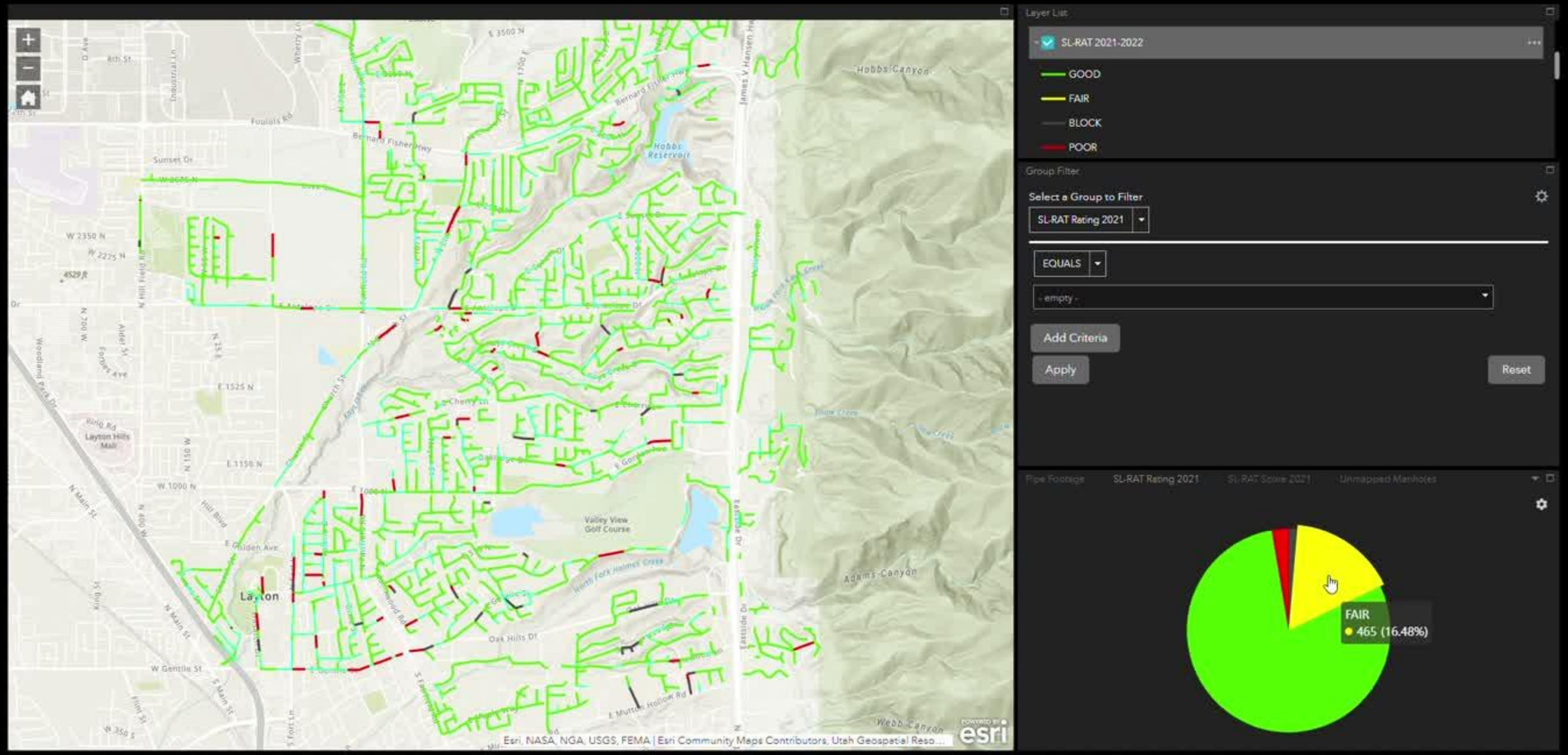
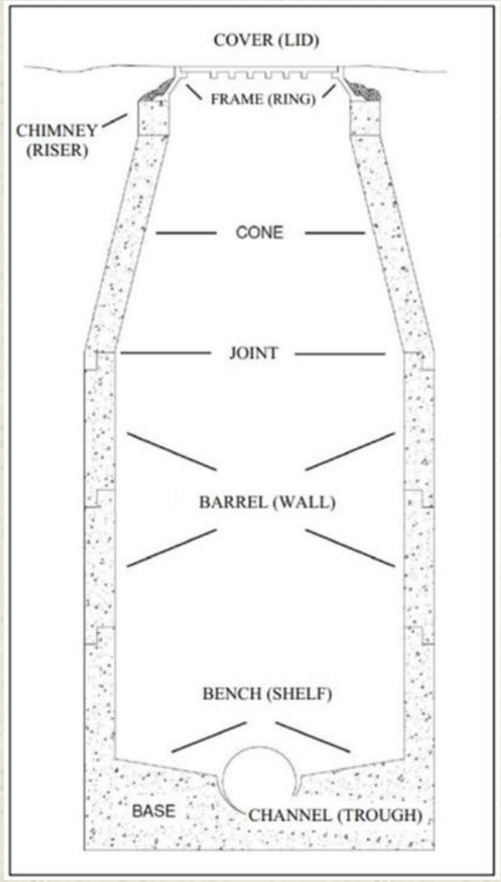

Layer List
SL-RAT 2021-2022
GOOD
FAIR
BLOCK
POOR
Group Filter
Select a Group to Filter
SL-RAT Rating 2021
EQUALS
- empty -
Add Criteria
Apply
Reset
Pipe Footage
SL-RAT Rating 2021
SL-RAT Score 2021
Unmapped Manholes
FAIR
465 (16.48%)
Layton
Hobbs Canyon
Adams Canyon
Webb Canyon
Valley View Golf Course
Layton Hills Mall
Hobbs Reservoir
Esri, NASA, NGA, USGS, FEMA | Esri Community Maps Contributors, Utah Geospatial Reso...
esri

Level 1 Manhole Inspections



Component	Attribute	Good	Fair	Poor	Urgent
Collar Condition	Cracks, missing pieces, weathering, sunken, voids	No defects	Aggregate showing, and/or some cracks	Severe cracks, chunks missing, major aggregate	-
Cover/Frame Condition	Cracks, chips, cover seating	Flush cover, no defects	Slightly raised, chipped, or cracked	Significantly raised, chipped, or cracked	Missing cover
Structure Condition	Chimney, Barrel, and Cone Cracks and Degradation	No defects	Minor cracks and degradation	Major cracks and degradation	Collapsed manhole
Bench/Channel Condition	Cracks, debris, obstructing objects	Good Bench and channel clean and intact	Dirty Debris on bench or in channel	Structural Defects Cracks and other defects	Obstructing objects, surcharging
Infiltration	Infiltration	No signs of infiltration	Mild Infiltration	Significant Infiltration	Severe infiltration
Structure Material	Barrel and Cone material (Concrete / Brick / Lined)	-	-	-	-

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Manhole Digital Twins

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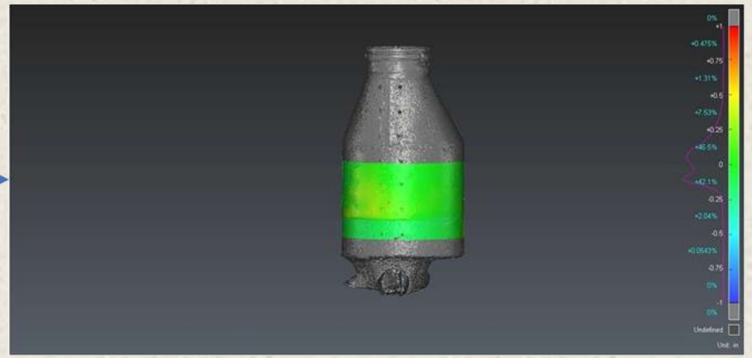
What is Manhole / Inlet Virtualization?

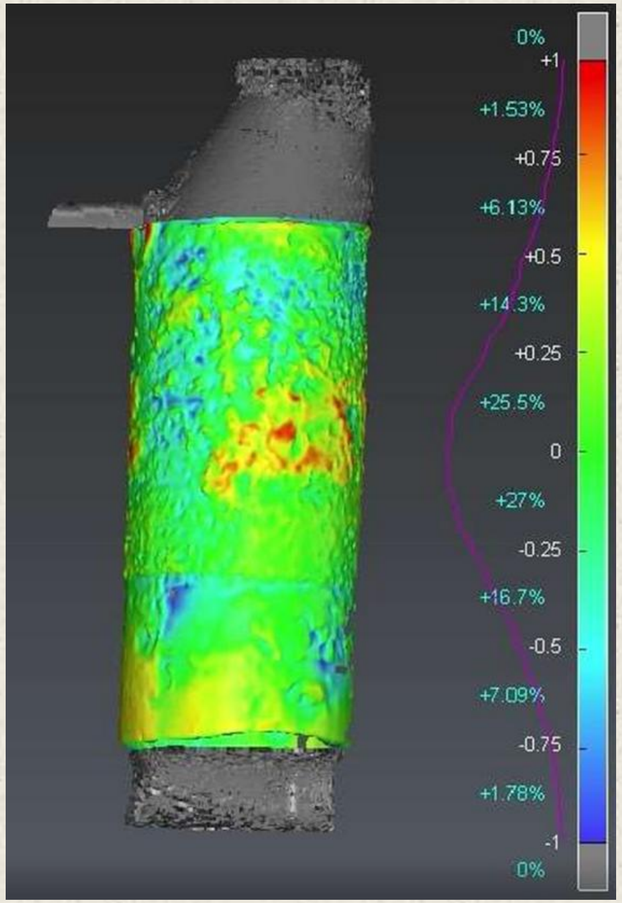
Field Team

1. Point Cloud – Digital Twin



2. 360 Video / VR Video

Manhole Virtual Modeling (MVM)



Purpose of Creating a Digital Twins:

1. Create a baseline of the full manhole structure
2. Run degradation analysis
3. Prioritize ALL manholes in the system
4. Monitor degradation rate over time
5. Enable virtual manhole entry

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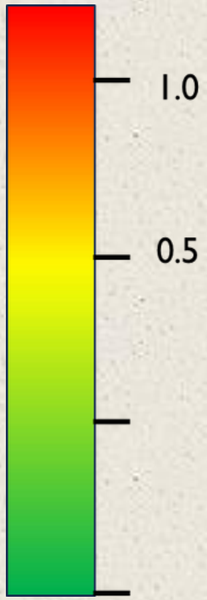
Manhole Virtualization - Wall Score

MVM Wall Score



NEEDS REVIEW
Signs of degradation / buildup that require additional review

FAIR
Moderate signs of deviation from original installation state

GOOD
Little to no sign of degradation or buildup

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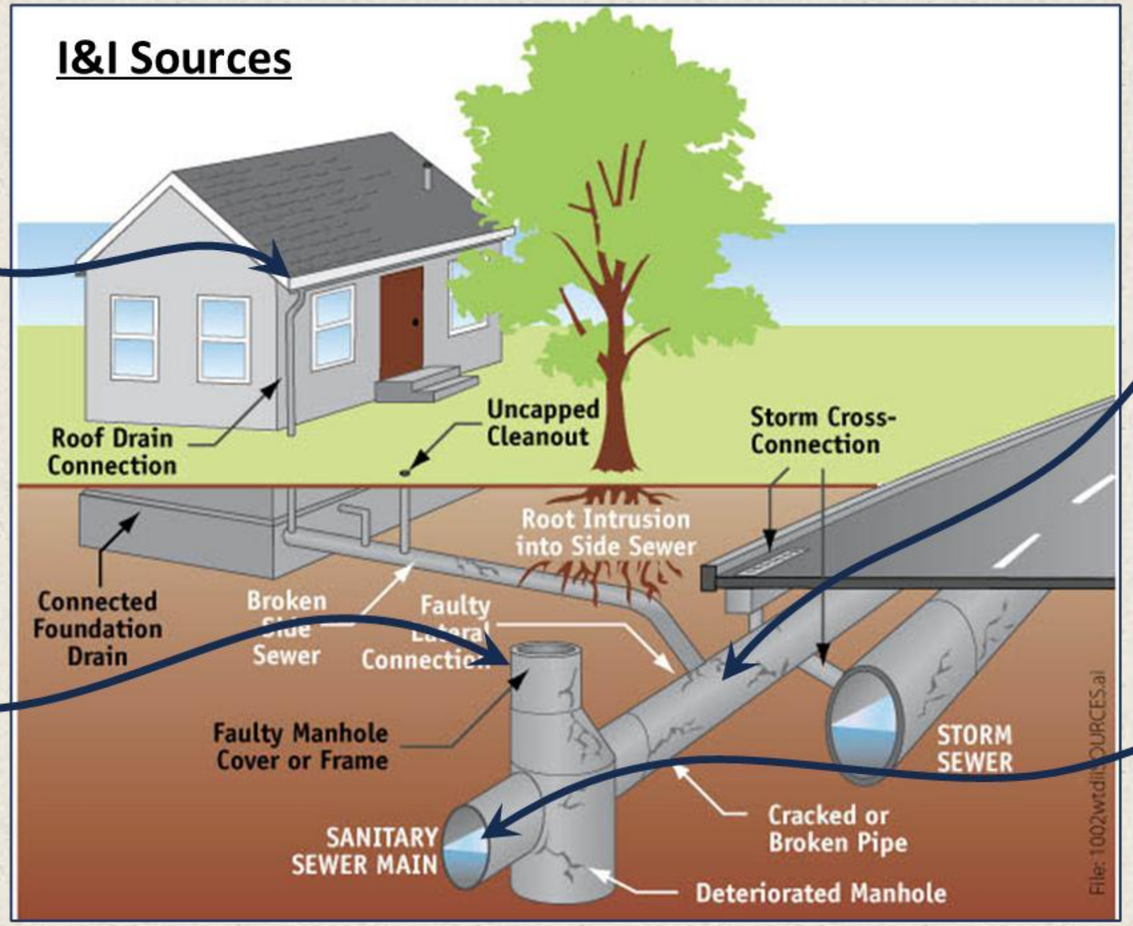
Locating Inflow & Infiltration

Smoke Testing

Disruptive - Requires Door Hangers
Limited to Surface defects

Manhole Inspection

Limited to Active I&I
Difficult to visualize deep manholes



CCTV

Limited to Active I&I
Cannot detect I&I below the water

Flow Meter

Limited to Basins Not Individual Pipes
Expensive and Difficult to Install

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Locating Inflow & Infiltration

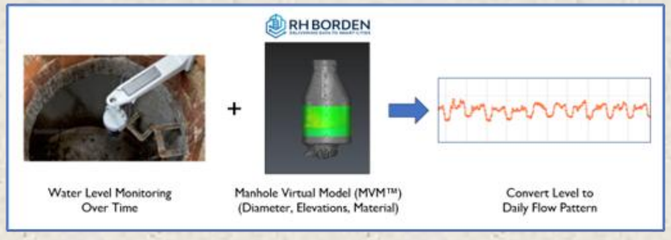
BASINiQ

• INFLOW / INFILTRATION •

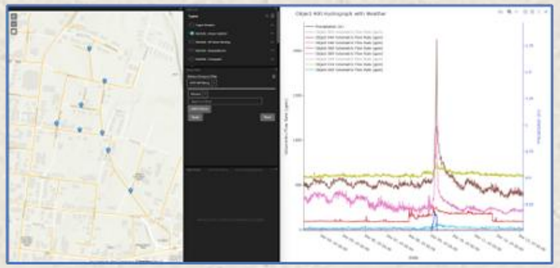
1) Basin / Flow map

2) Simultaneous Sensor Network

3) Weather Event



4) Analytics



5) Data Visualization

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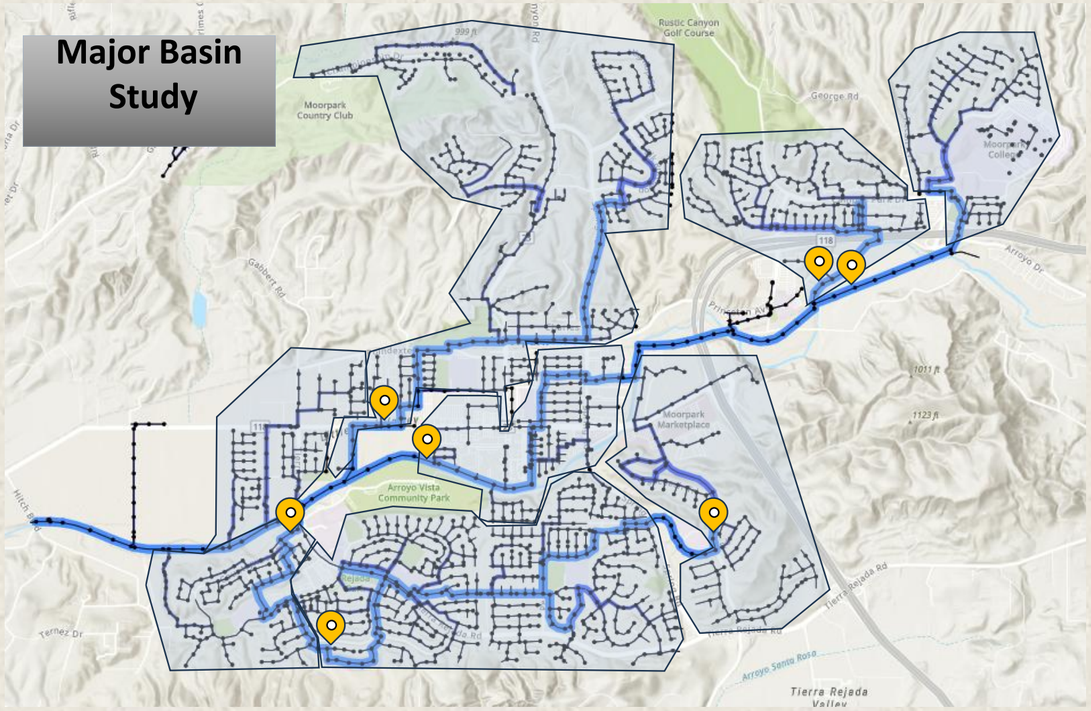
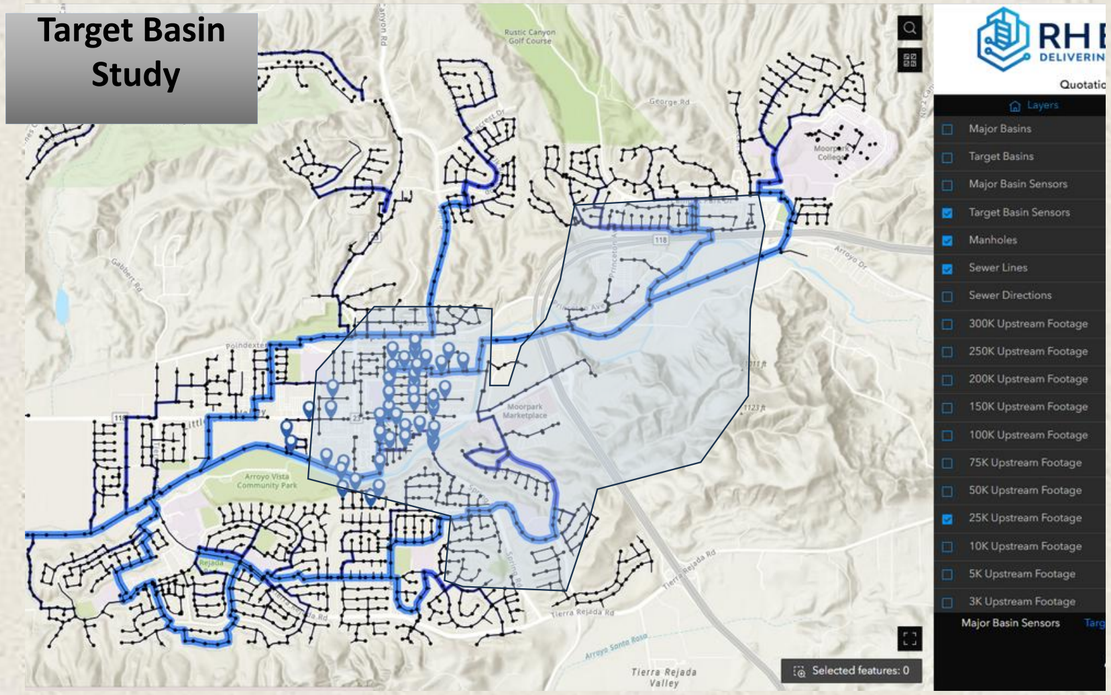
Basin Studies for I&I Assessment

Major Basin Study



Target Basin Study



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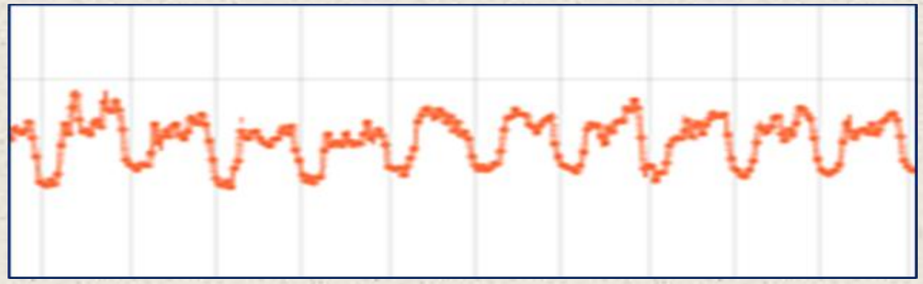
Establishing Flow Baseline

Water Level Monitoring
Over Time

+

Manhole Virtual Model (MVM™)
(Diameter, Elevations, Material)
Included With Every Sensor Location



Convert Level
to
Daily Flow Pattern

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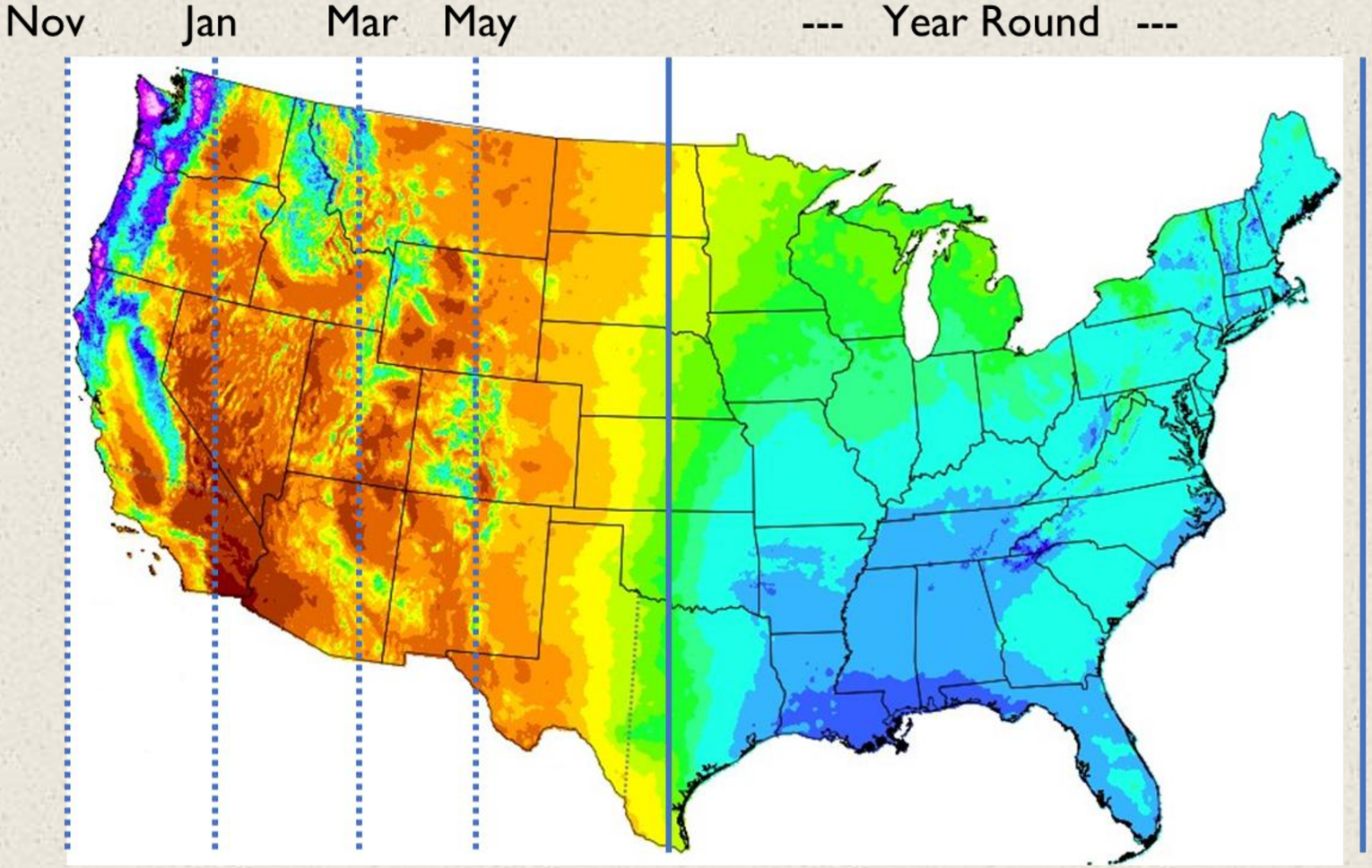
Basin Studies for I&I Assessment



BARON WEATHER

High-density, Real-time Weather Network

Gage Types: Satellites + Surface Gauges

Resolution: ½ mile updated every 4 minutes

Used by: NASA, Airlines, Garmin, ESRI, Verizon

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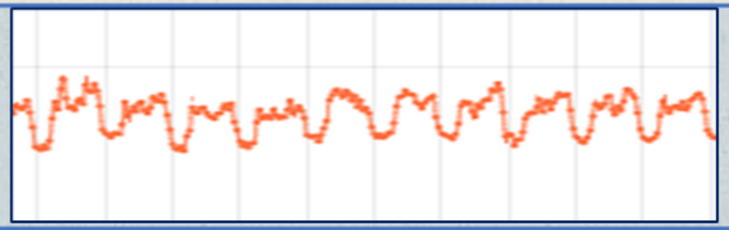
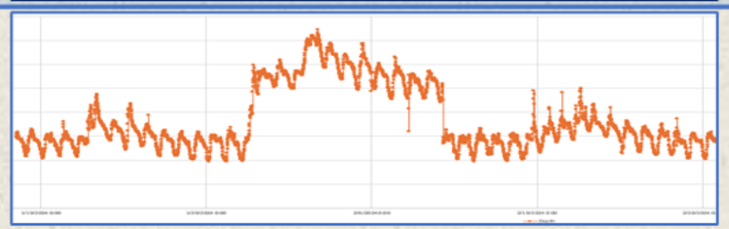
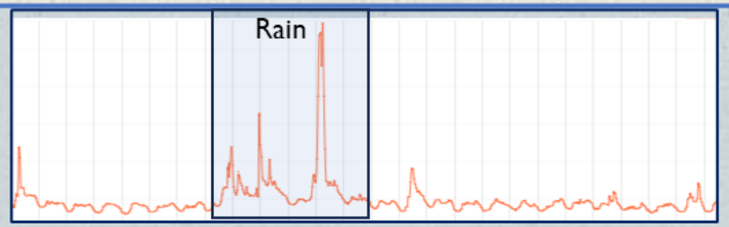
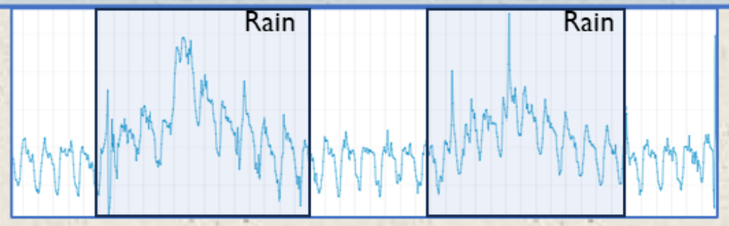
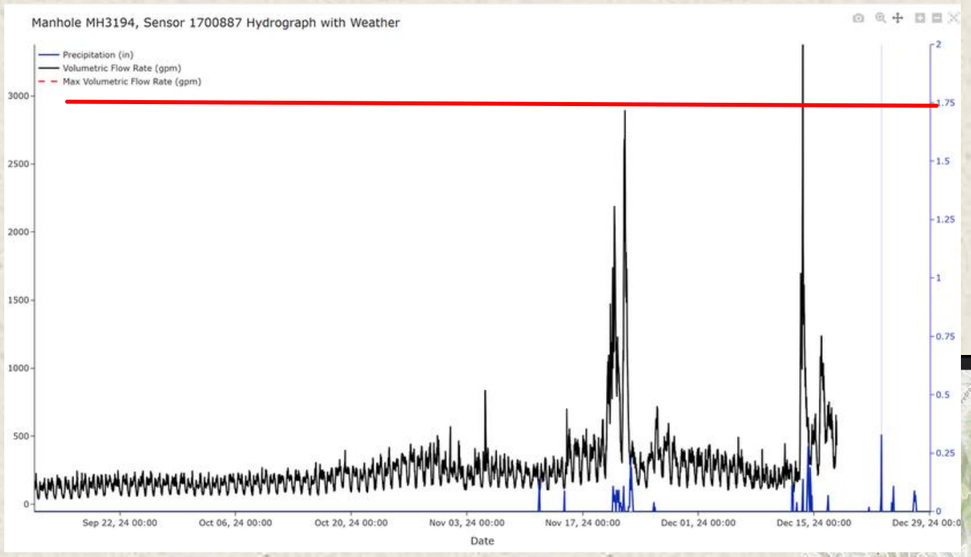
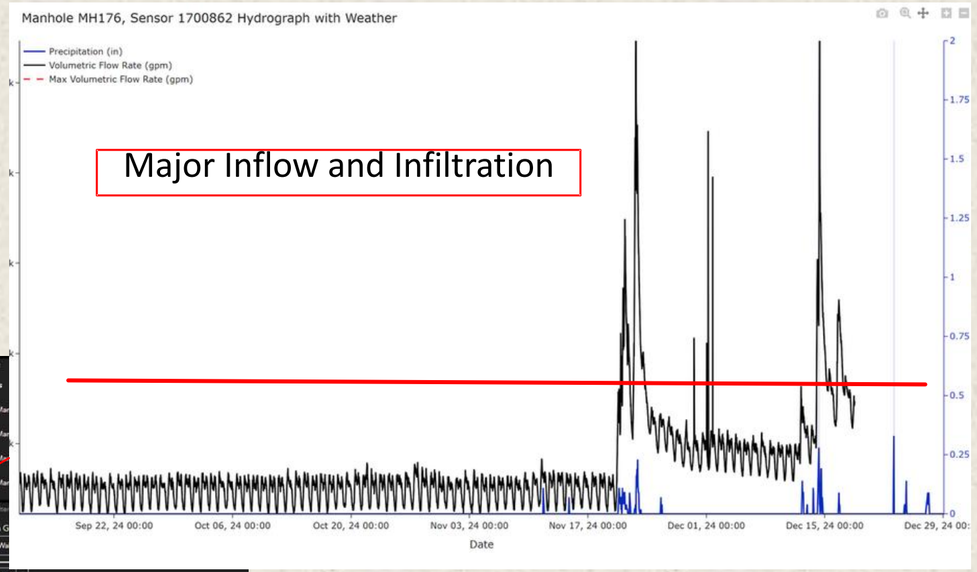
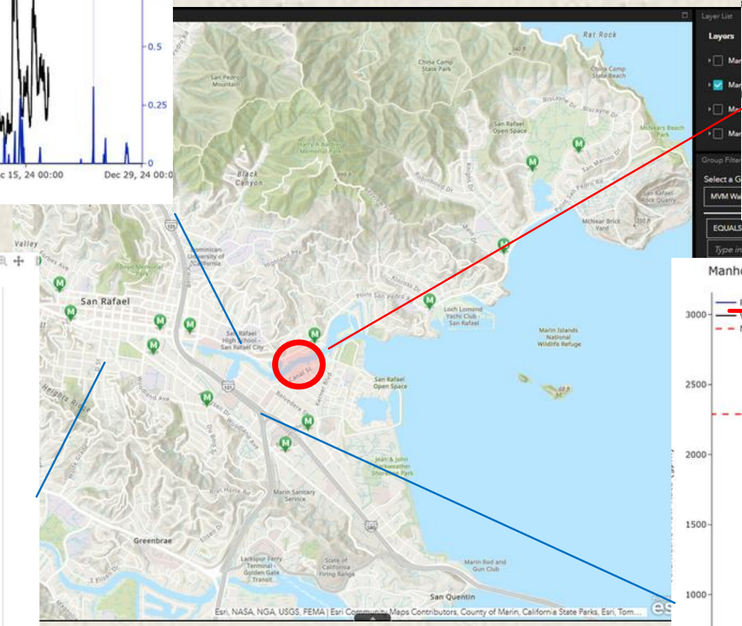
Level Monitor Signatures

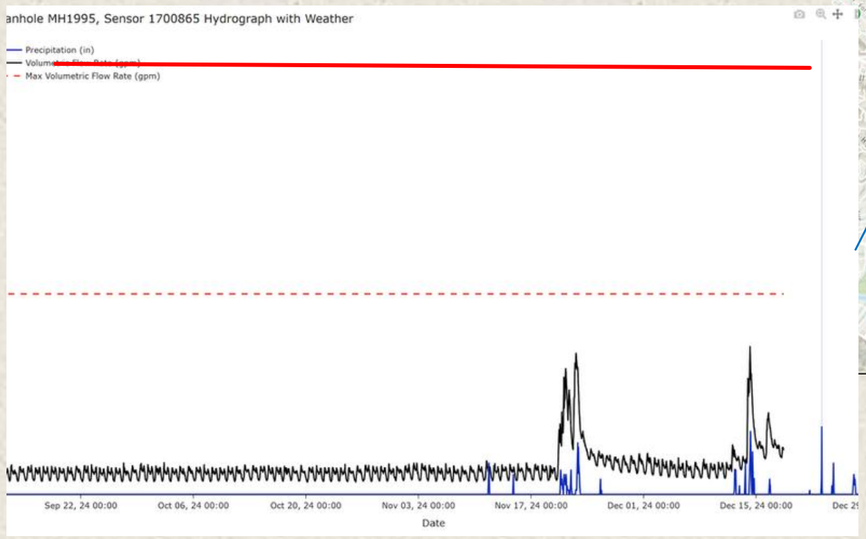
Flow Condition	Level Signature	Actions Required
Regular Flow: Daily Diurnal Pattern of Flow		-
Blockage: Sharp Increase / Decrease in Diurnal Pattern		Jet Cleaning
Inflow (Open to Sky): Spike in Level During Rain Event		Walk-About Smoke Testing CCTV During Rain Event
Infiltration (Underground): Gradual Increase in Level During Rain Event		CCTV After Rain Event

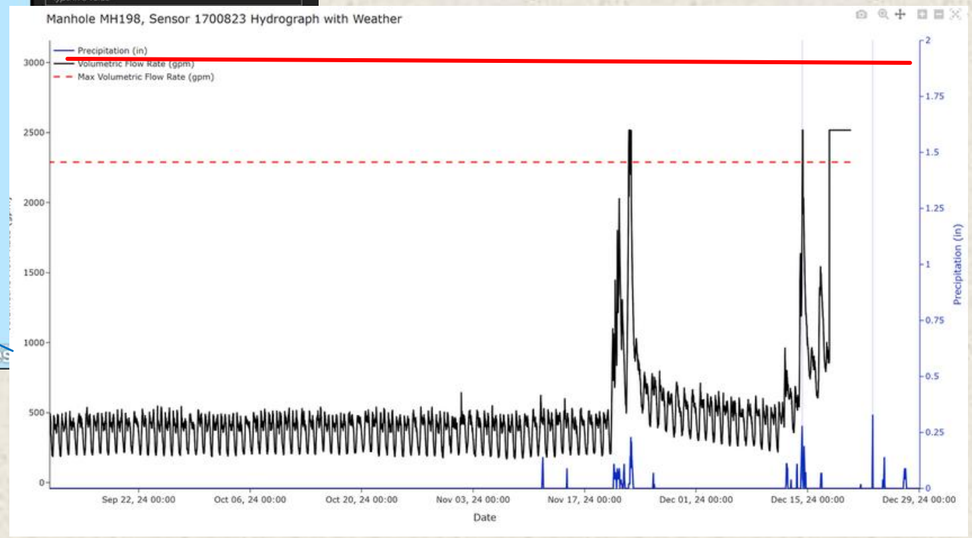
Major Basin Assessment Deliverable





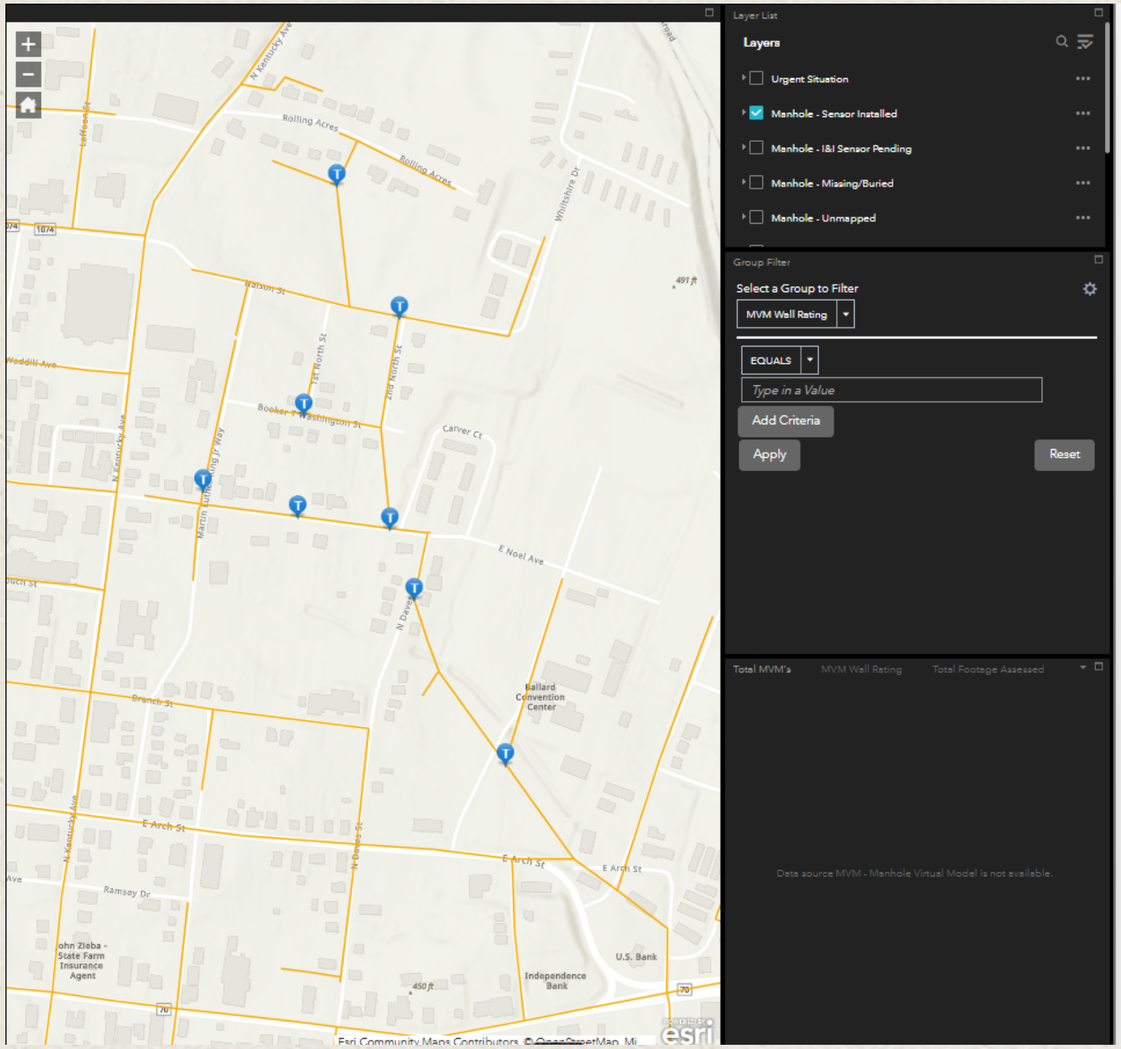




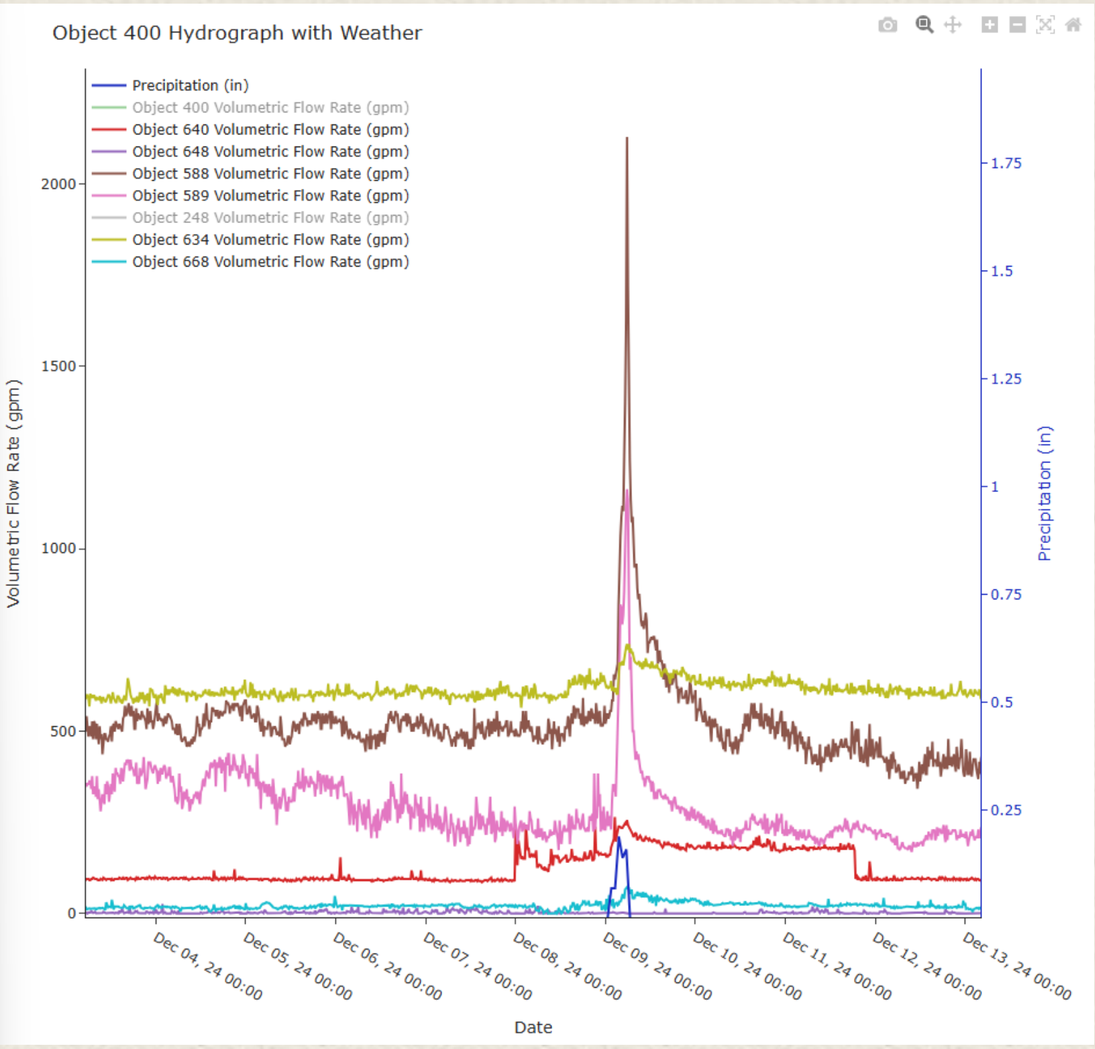


Target Basin Assessment Deliverable

Interactive GIS Map Pinpointing I&I Locations



Hydrograph Analysis with Weather Overlay



423 Sensors. 70 Miles. One Big ROI

Assessment Tool	BASINiQ • INFLOW / INFILTRATION •	Traditional Methods CCTV, Smoke Testing, L1 MH Inspection
Total Investment	$540K	$1.1M
Time to Complete Assessment	4 Months	5-10 Years
Yield	Majority of I&I Locations / Sources Identified	20-25% of I&I Locations / Sources Identified
Ongoing Effectiveness Check Available	Yes	No

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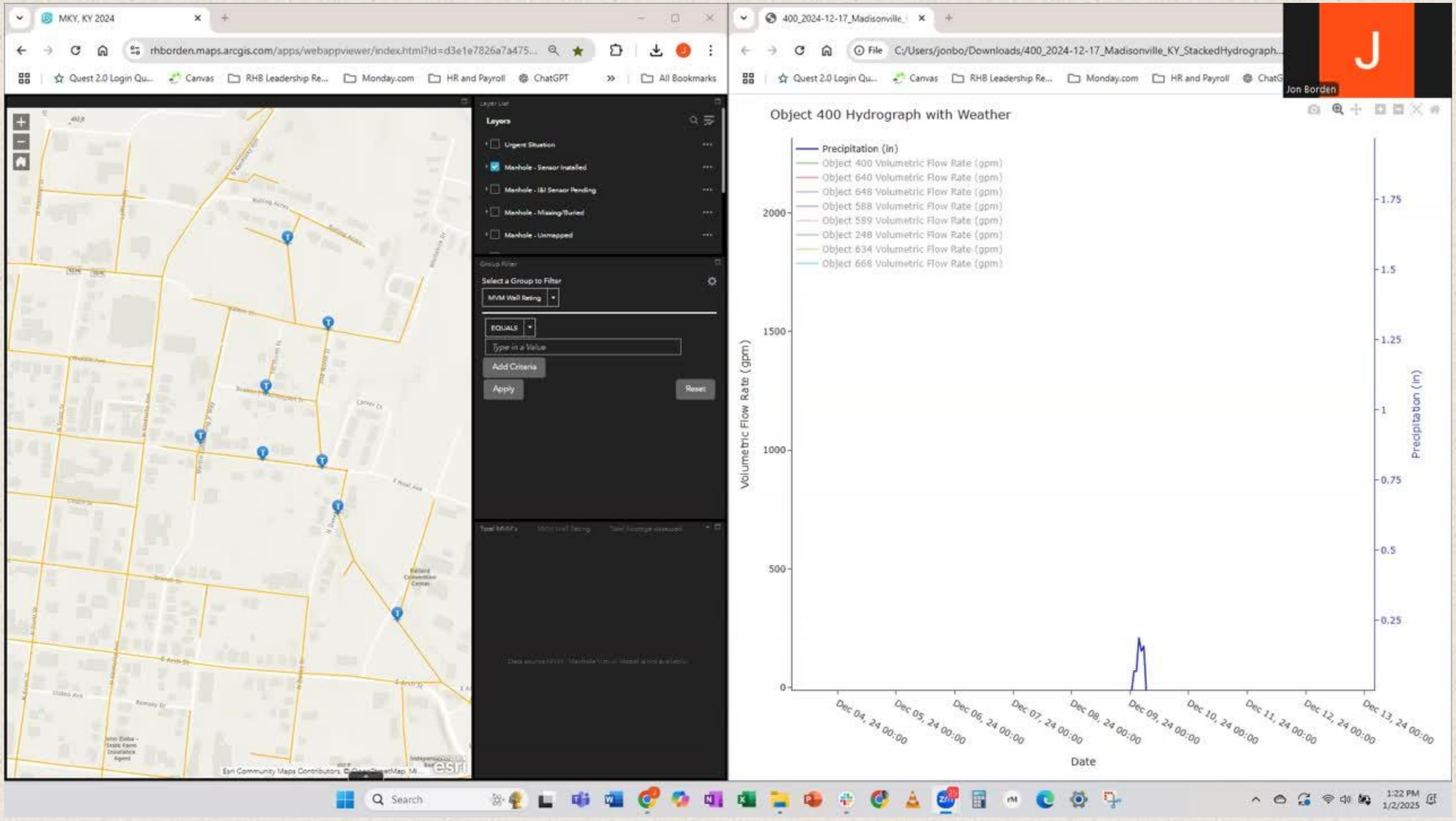
Target Basin Assessment Deliverable



THANK YOU!

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https://ironwomancon.com/qp-services/