BASINiQ

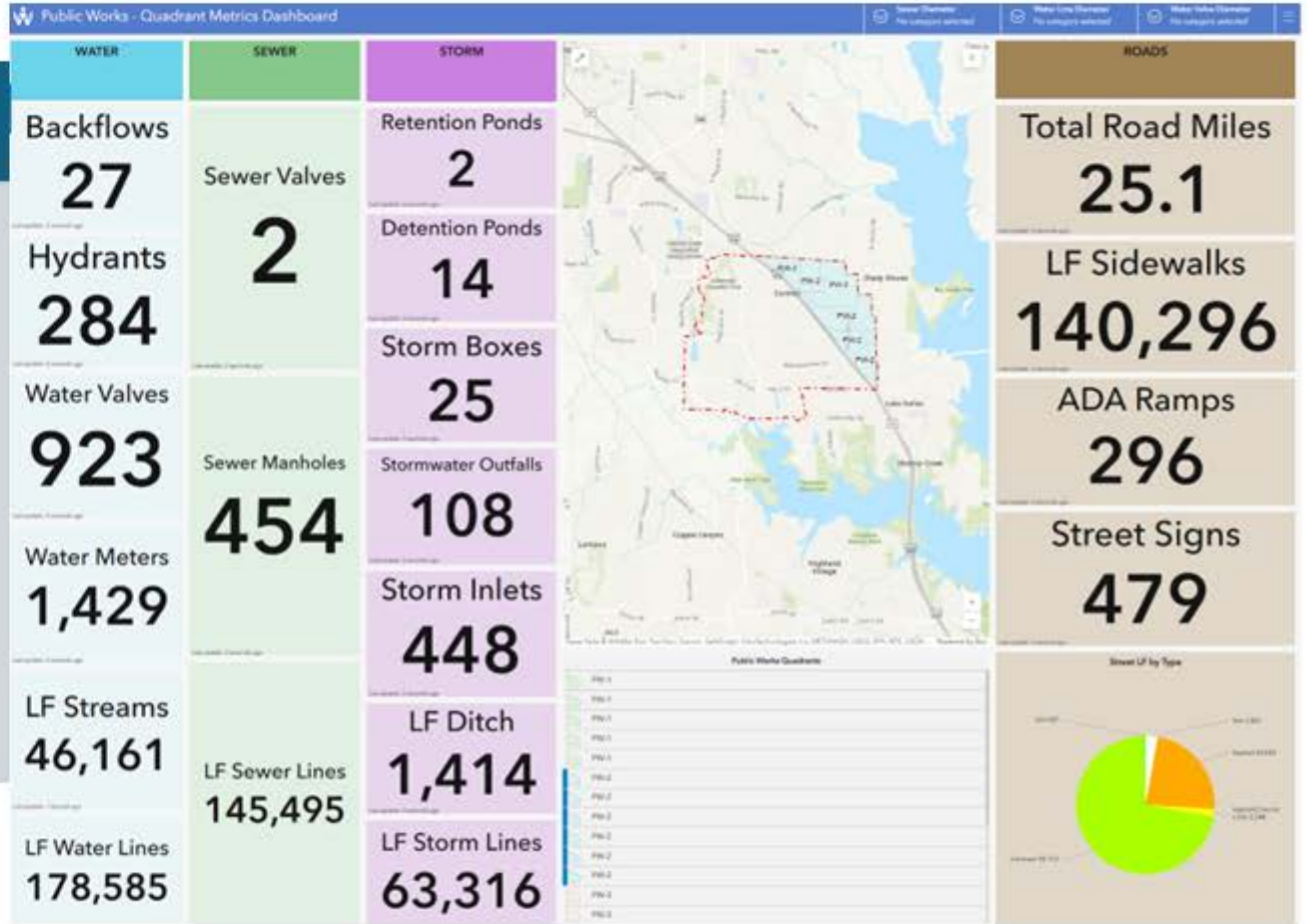
• INFLOW / INFILTRATION •

I&I Detection

Intelligent Collections

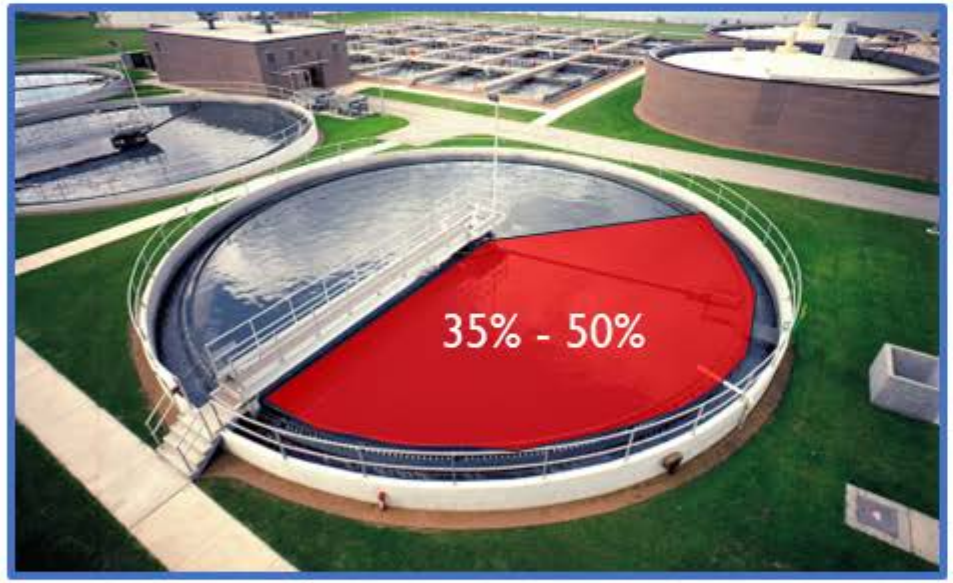
Why -Every dollar spent on rehabilitation should provide measurable reductions in I&I while maximizing the useful life of existing infrastructure.

Quantify	Establish	Prioritize
Quantify the extent and location of inflow and infiltration within the collection system to reduce over sizing of facilities.	Establish a data-driven rehabilitation program rather than relying on assumptions.	Prioritize repairs based on risk, condition, and return on investment.



For small cities, success isn't replacing the most pipe; it's about having the data so you are doing the right maintenance at the right time.

Inflow and Infiltration (I&I)
What is the Cost?



35% - 50% of all Treated Wastewater comes from I&I

The average 1 MGD plans spends

$500,000 each year

to treat I&I

Imagine the ROI of I&I reduction

I&I is a leading cause for Consent Decrees and Regulatory fines

Locating Inflow and Infiltration

What if you could
Pinpoint ALL
your I&I in 5 months?

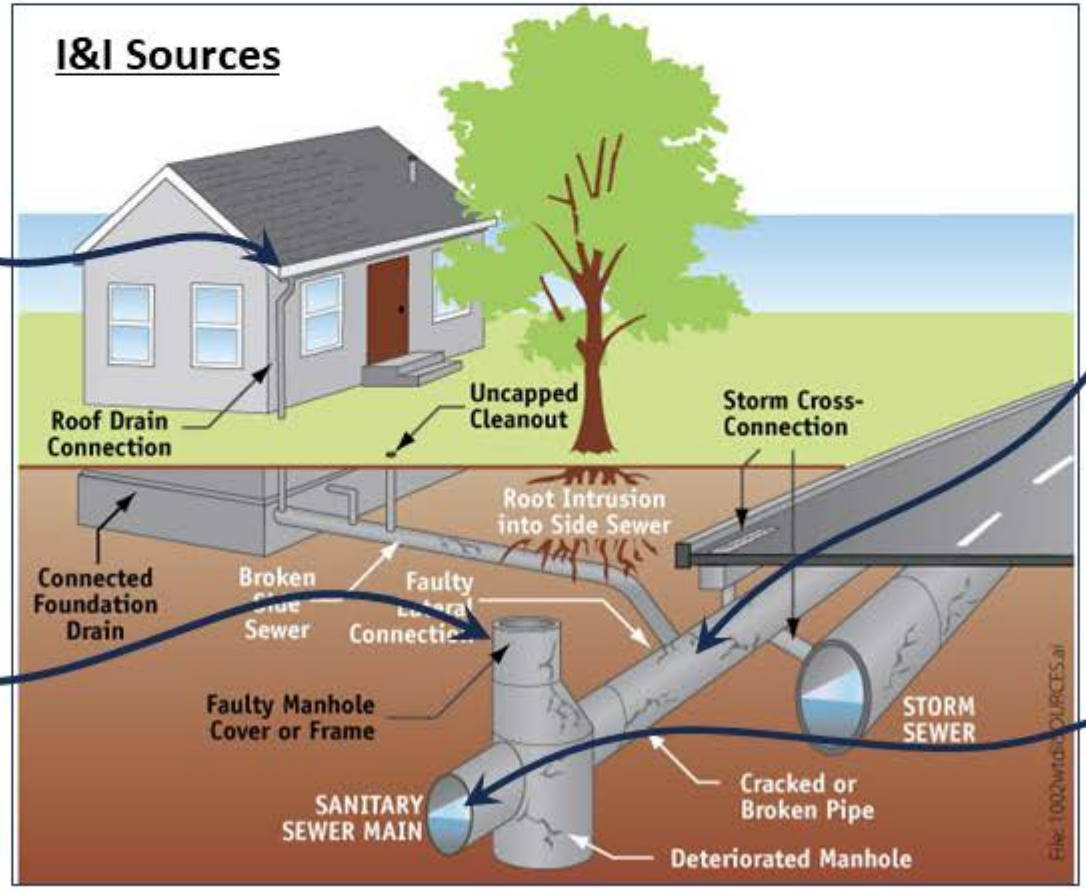
Traditional Tools
All Have Significant Limitations

Smoke Testing

Limited to Surface defects
Disruptive - Requires Door Hangers

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

RH Borden I&I Detection Services

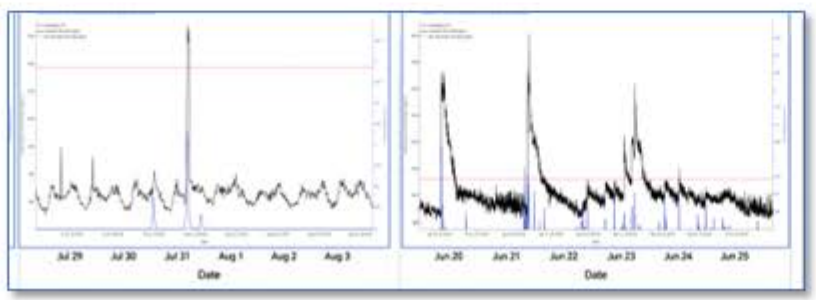
BASINiQ

• INFLOW / INFILTRATION •

1) Digital-Twin Flow Meters

2) Live Weather Integration

3) High-Density Flow Networks



4) Analytics

5) Data Visualization

Level Sensor

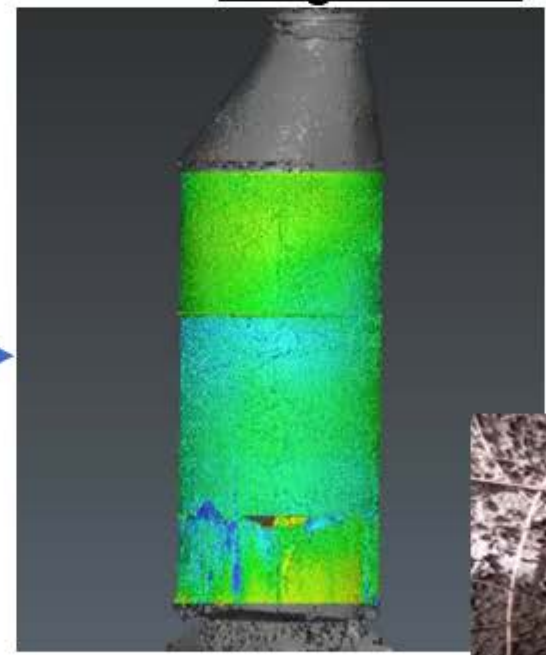
Advantages to GCSI – Sense Level

- **Radar Level Technology**
- **Fast Installation**
- **No Confined Space Entry**
- **Multi-Carrier Cellular Chip**

Generating the Digital Twin

Field Team

1.Digital Twin



2. 360 - VR Video

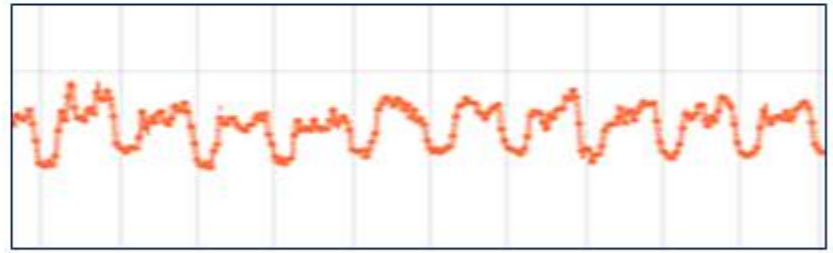
Establishing Flow Baseline

Water Level Monitoring
Over Time

+

Manhole Virtual Model (MVM™)
(Diameter, Elevations, Material)

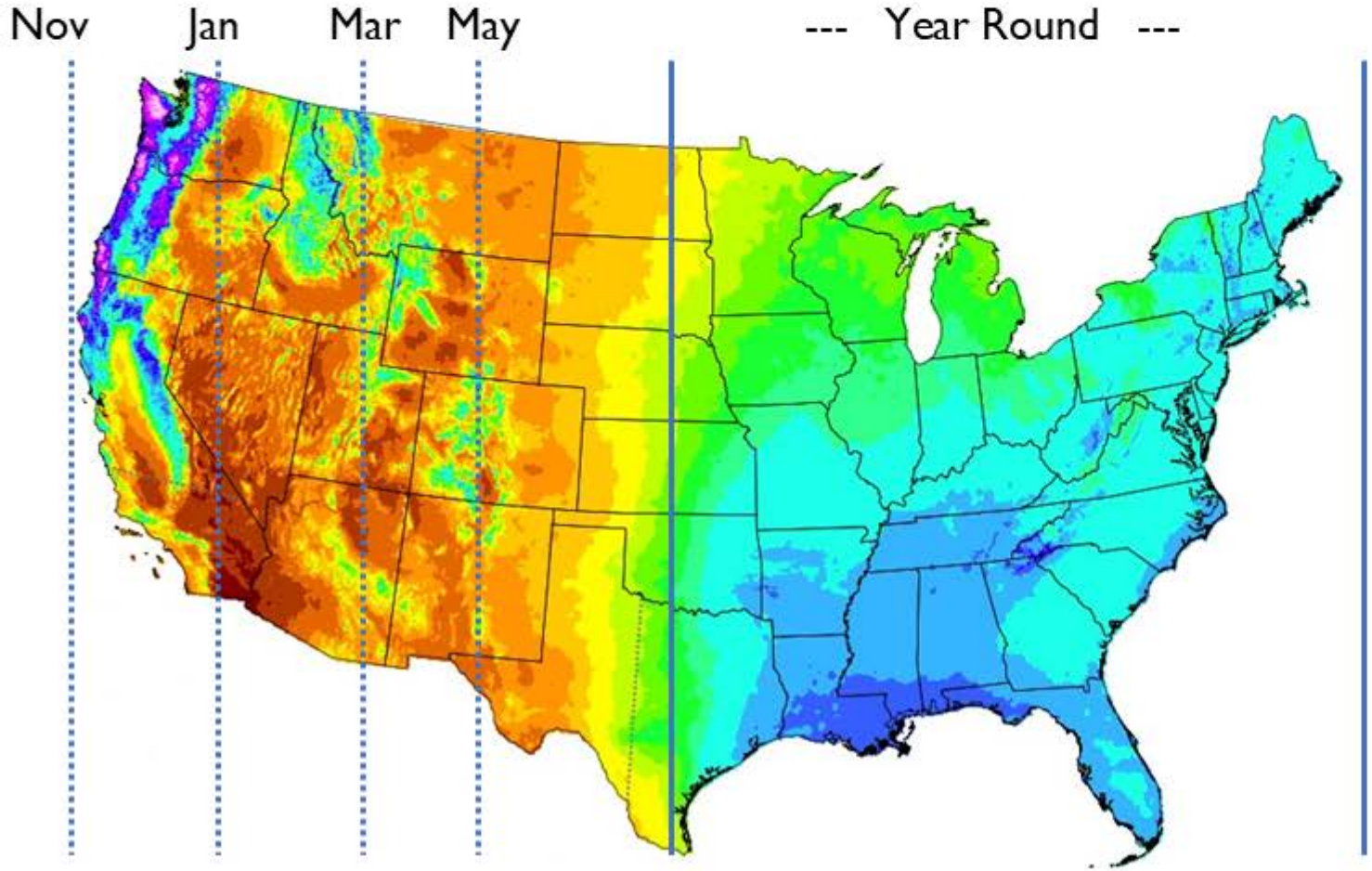
BASINiQ
INFLOW / INFILTRATION



Convert Level to
Daily Flow Pattern

Monitoring Weather

Best Times To Detect I&I



BARON WEATHER

High-density, Real-time Weather Network

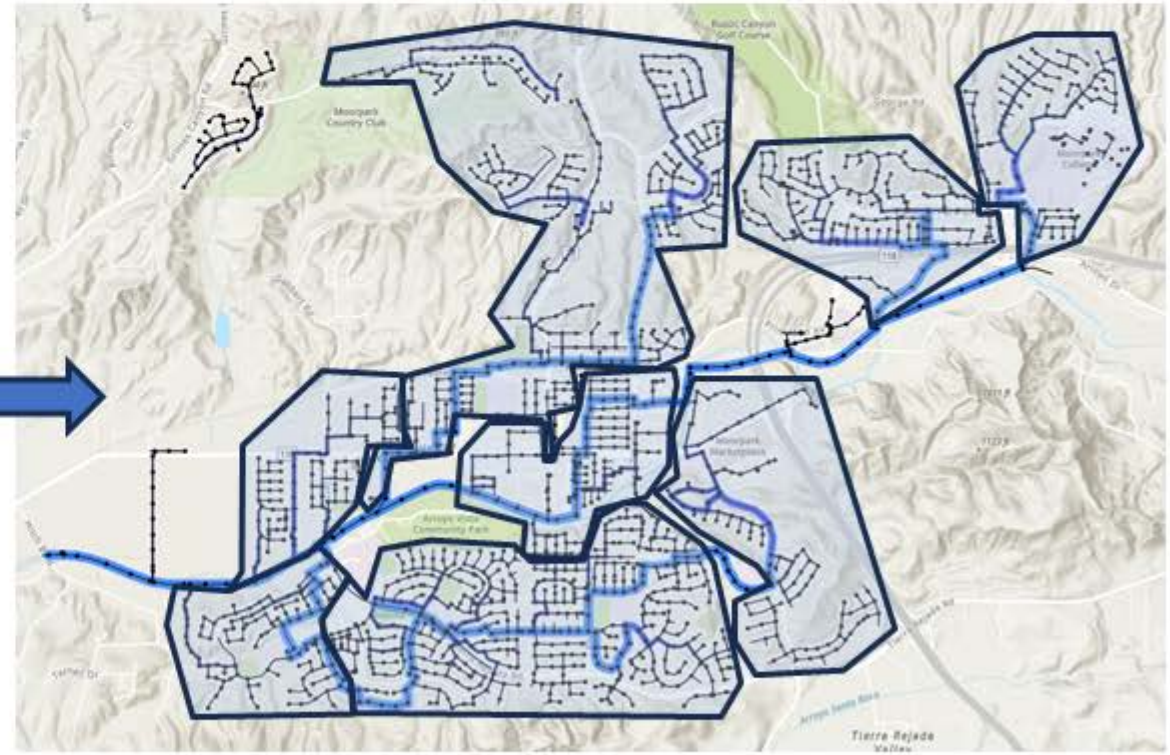
Gage Types: Satellites + Surface Gauges

Resolution: ½ mile updated every 4 minutes

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

Understanding Basins

Traditional System View



Basin View

UNDERSTANDING BASIN FLOW

BASINiQ
BASIN FLOW NETWORK

Duration	2 Years+
Purpose	Understand Flow Detect I&I

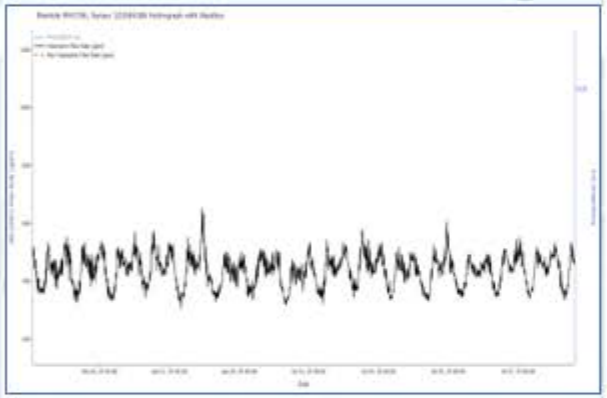
BASINiQ
TARGET ASSESSMENT

Duration	3-5 Months
Purpose	Pinpoint I&I Location Define I&I Type

Identifying I&I Flow Patterns

1 REGULAR DIURNAL PATTERN

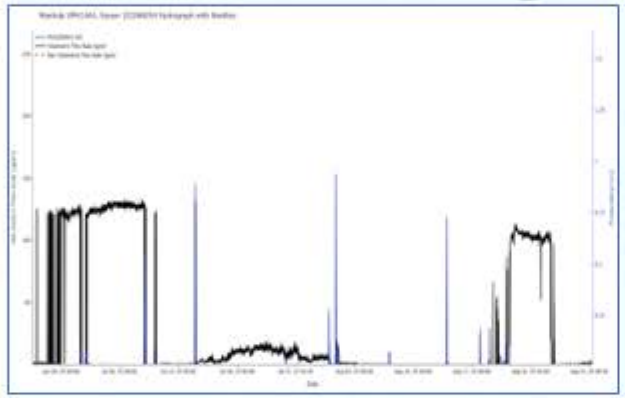
Daily Usage Cycle



Reflects normal residential and commercial water usage throughout a typical day.

2 BLOCKAGES & DEBRIS

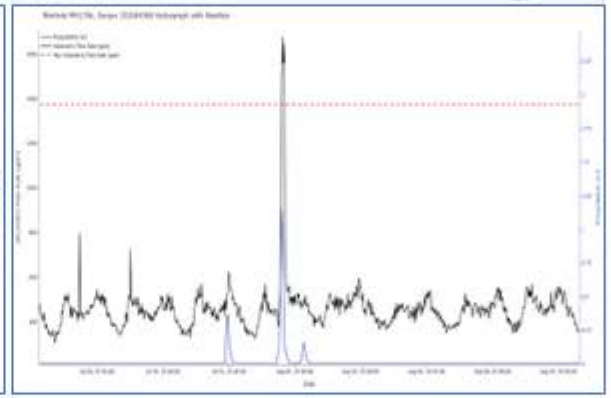
Disruptions in Flow



Debris or blockages create spikes and surges that can reduce capacity and cause backups.

3 INFLOW (I/I) – WET WEATHER

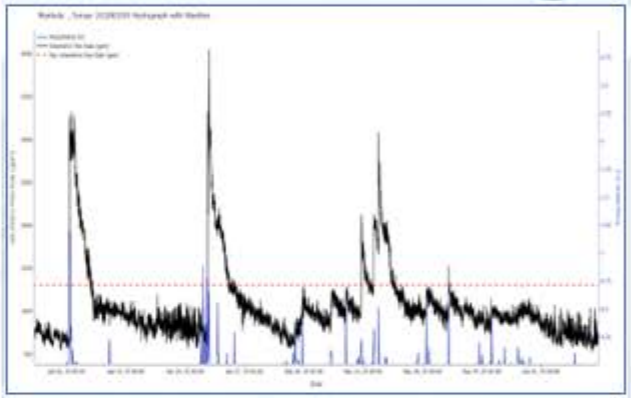
Direct Rainfall Inflow

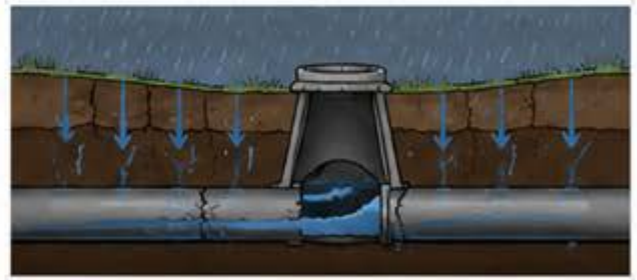


Rainfall quickly increases flow due to surface connections into the sewer system.

4 INFILTRATION (I/I) – GROUNDWATER

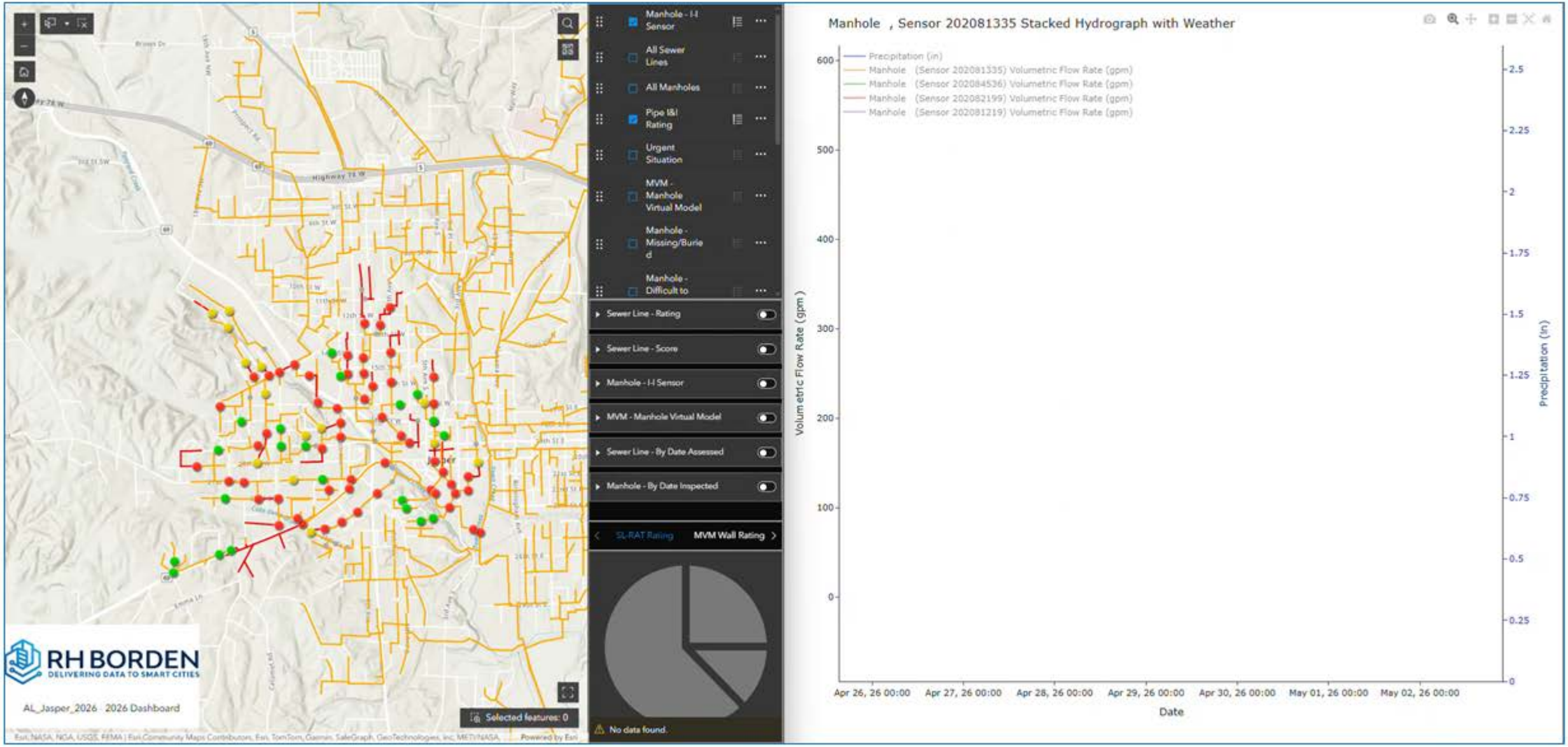
Sustained Wet Weather Impact





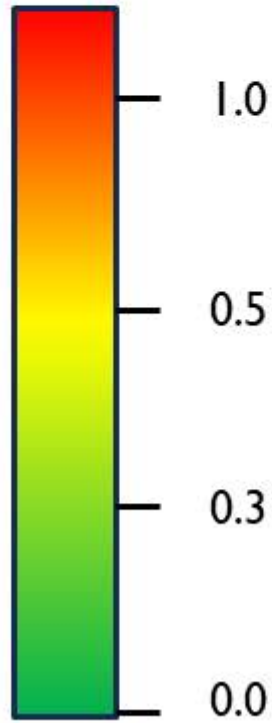
Groundwater seeps in through cracks and leaks, causing prolonged elevated flow.

RH Borden Customer Dashboard



Manhole Virtualization – Wall Score

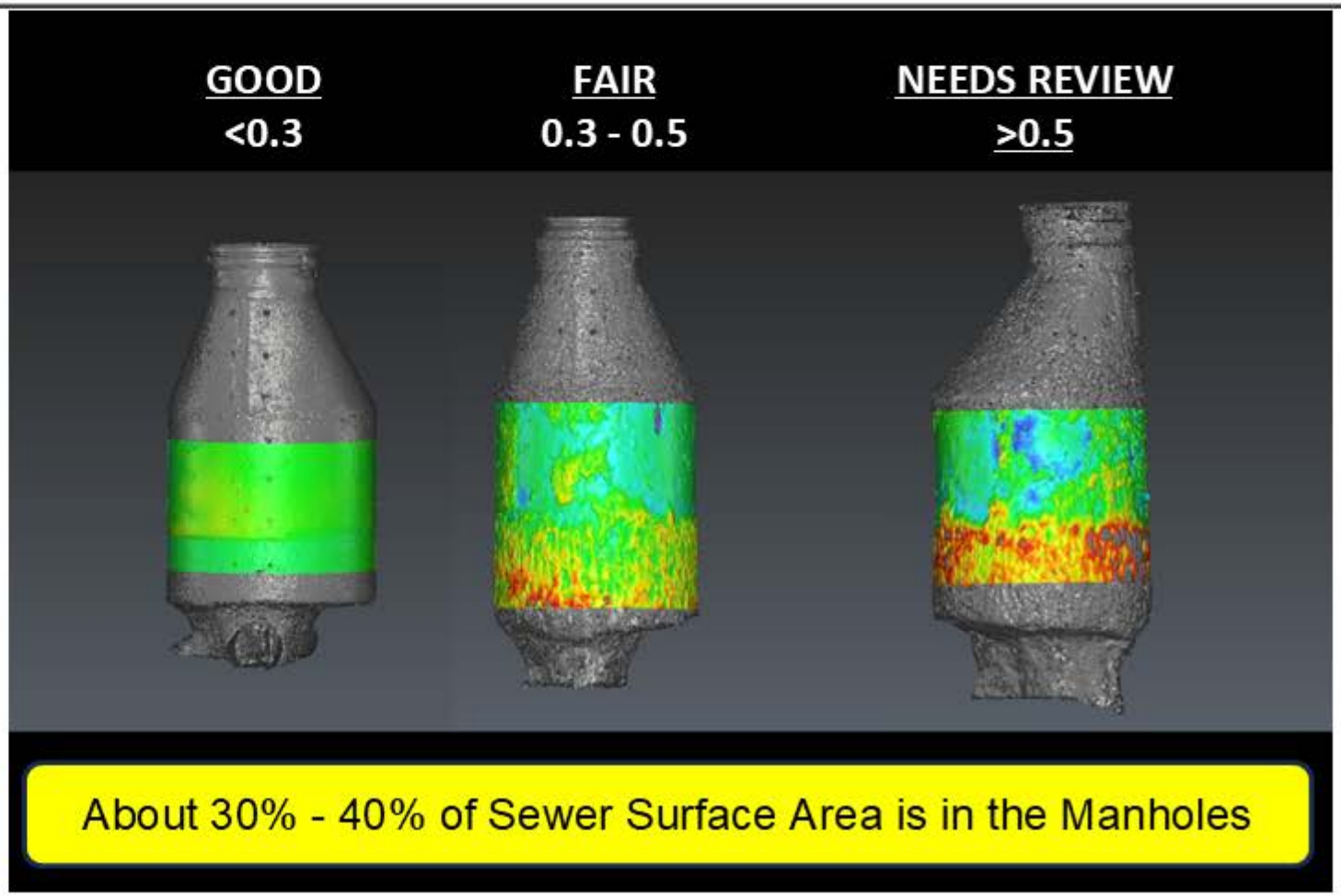
MVM Wall Score



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



Cost Comparison – Target Basin

	Traditional I&I Assessment 	BASINiQ TARGET ASSESSMENT
Basin Size	30,000 ft.	30,000 ft.
Approach	CCTV / Flow Meter / Manual Inspection / Smoke Testing	24X7 High-Density Monitoring
Total Cost	**$100,000**	**$60,000**

RH Borden I&I Detection Services

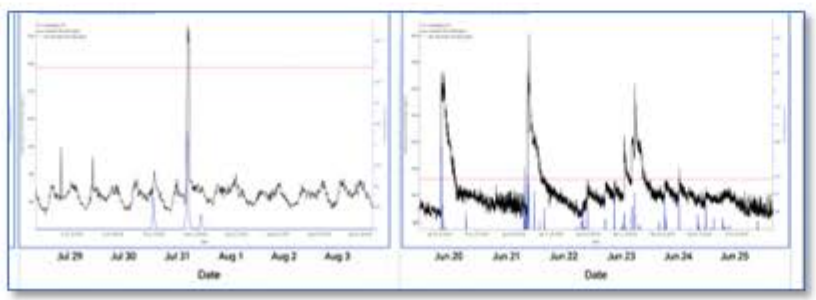
BASINiQ

• INFLOW / INFILTRATION •

1) Digital-Twin Flow Meters

2) Live Weather Integration

3) High-Density Flow Networks



4) Analytics

5) Data Visualization

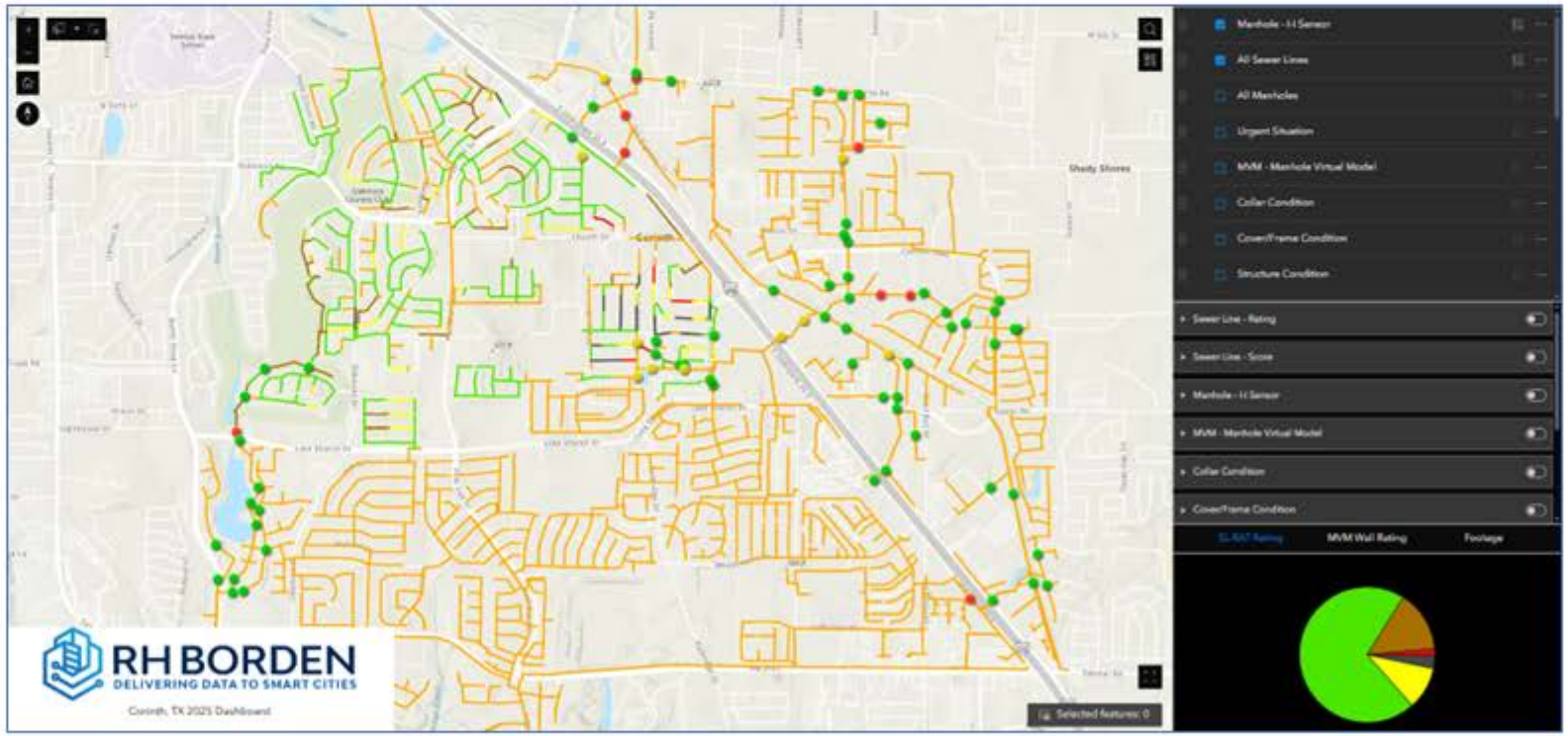
Corinth TX
Target Basin Assessment

RH BORDEN
DELIVERING DATA TO SMART CITIES

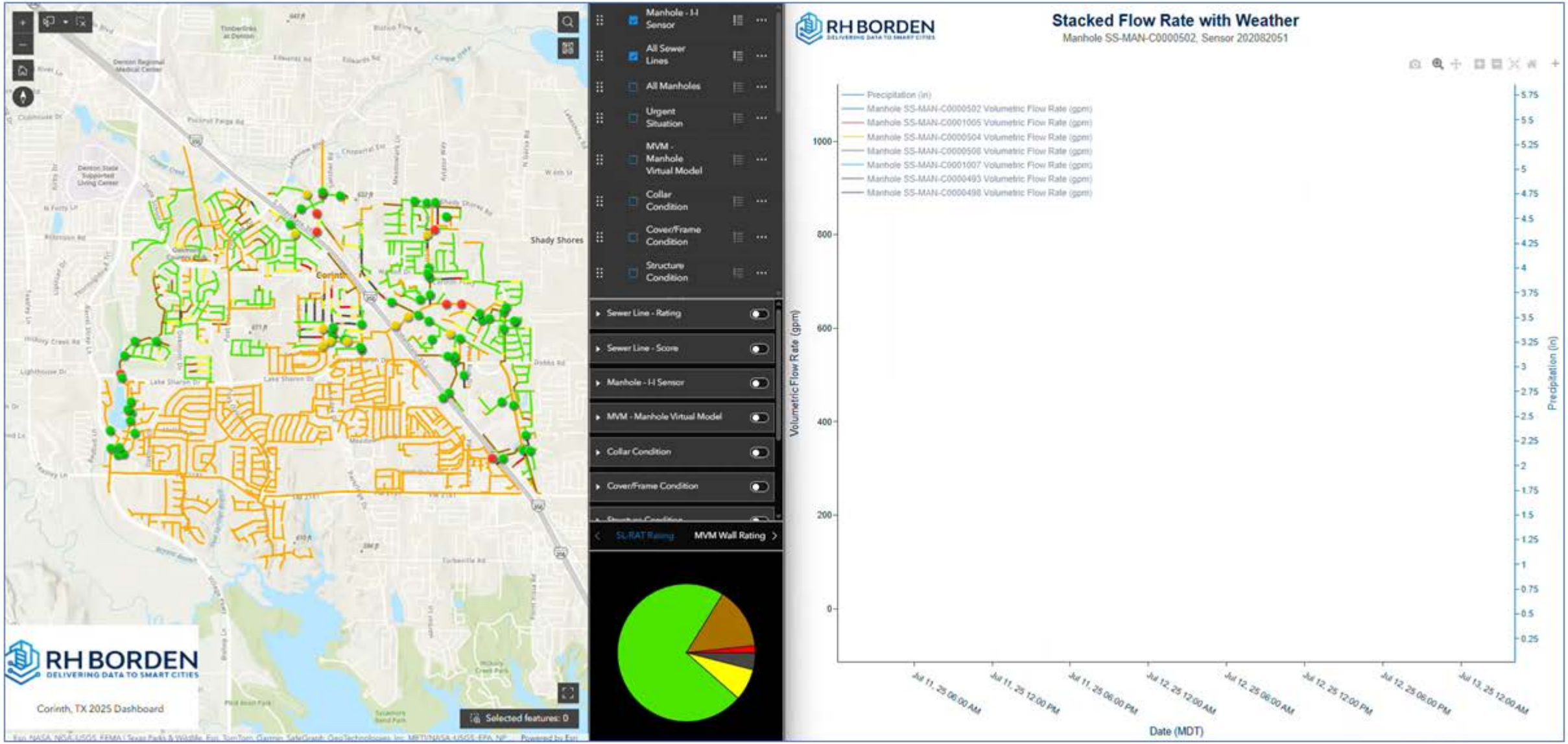
Activity Summary

- ✓ 79 Sensors Installed May – July 2025
- ✓ Primary I&I Contributors Identified
- ✓ Primary issue is Inflow in highlighted areas
- ✓ Major Rain Events in May and June
- ✓ 5 Sensors recommended to remain in place

I&I Study Dashboard Link:
https://experience.arcgis.com/experience/e3af515bc66b41568584cbfbc3c31dbe



RH Borden Dashboard – Corinth TX



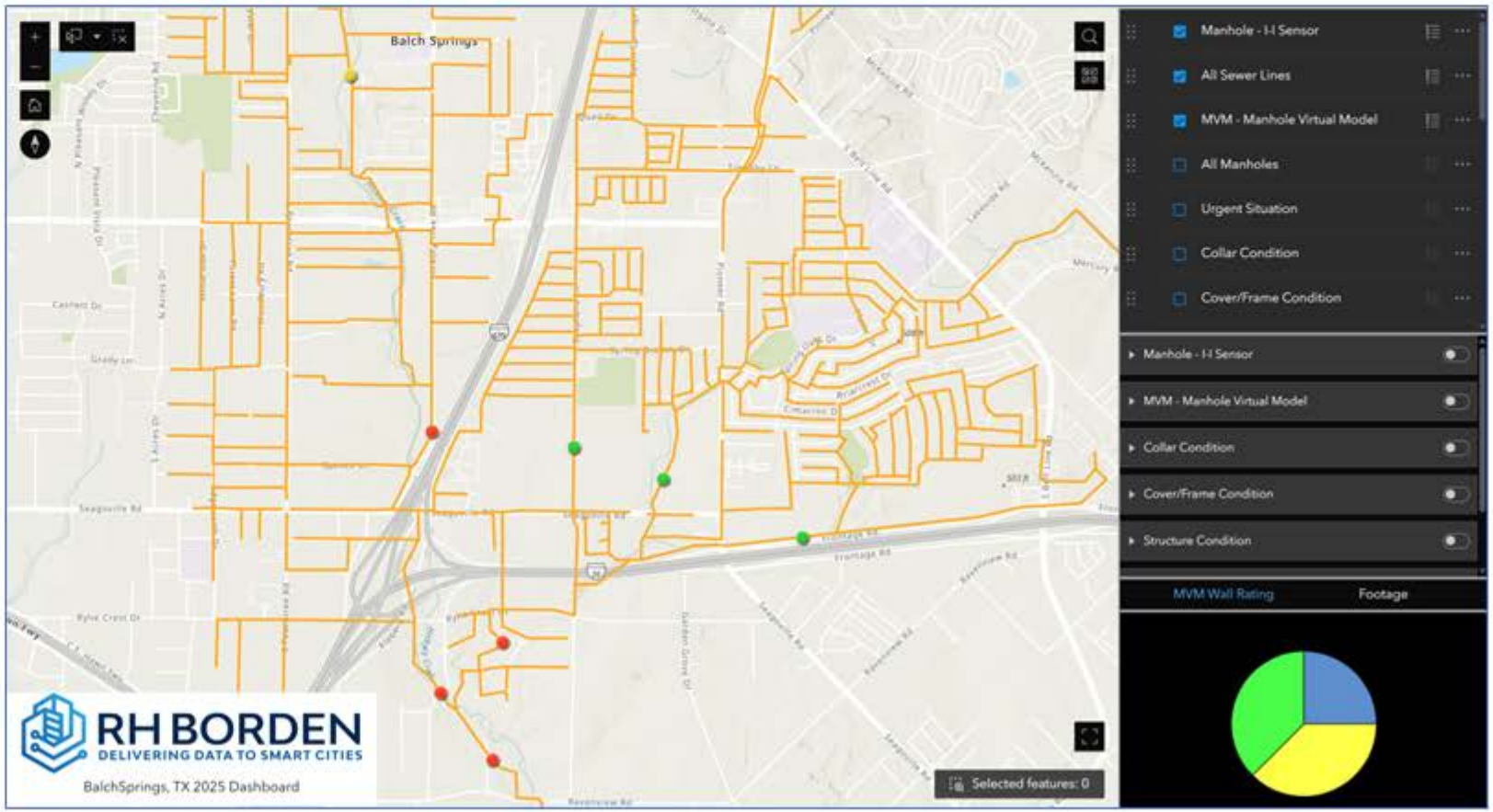
Balch Springs TX
BASINiQ Flow Network

RH BORDEN
DELIVERING DATA TO SMART CITIES

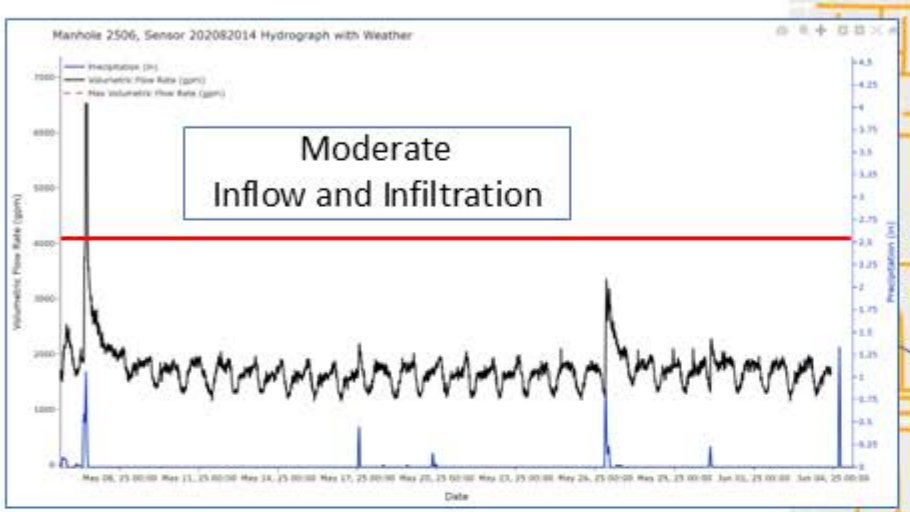
Activity Summary

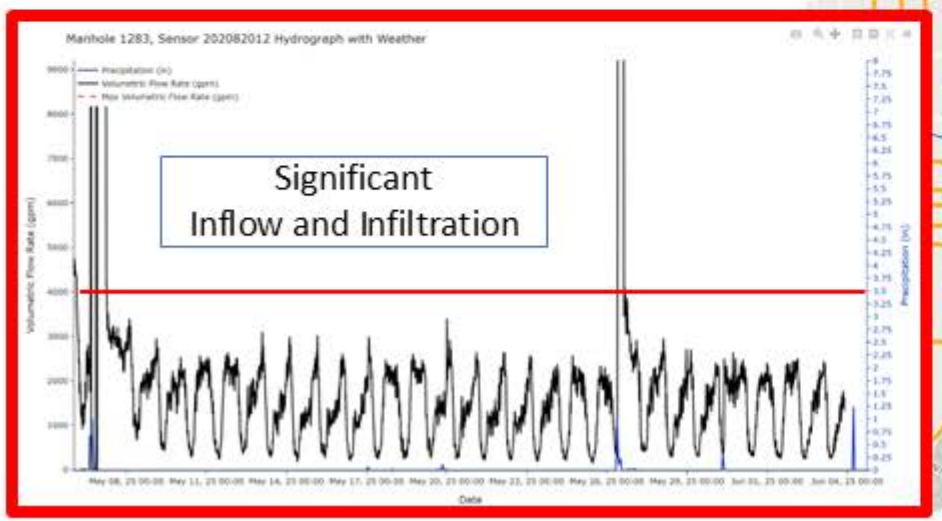
- ✓ 8 Sensors Installed May – June
- ✓ Identified Primary I&I Contributors
- ✓ Major Rain Events in May
- ✓ Manhole Virtual Models (MVM) Analyzed
- ✓ Next Steps Outlined

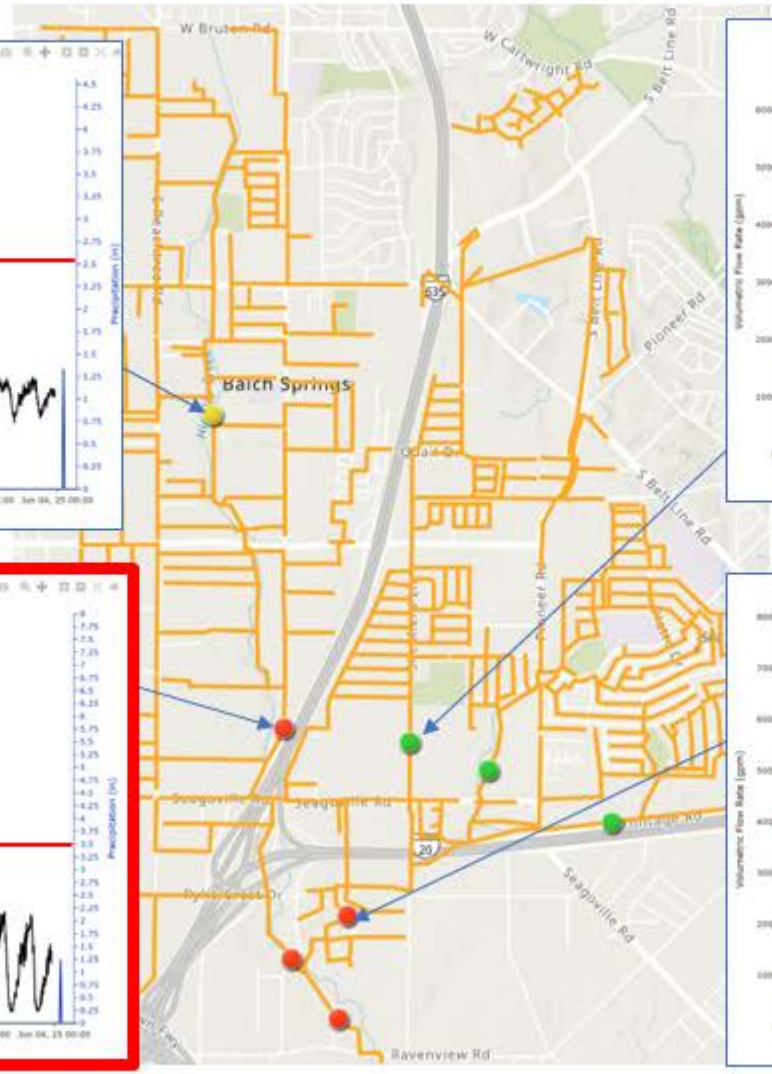
I&I Study Dashboard Link:
https://experience.arcgis.com/experience/bb921ab5081040a28fa859bddc8acb76

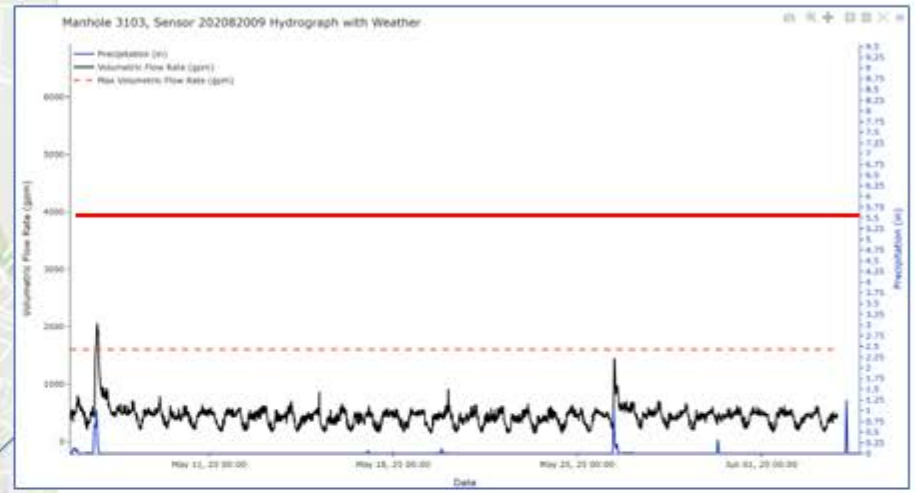


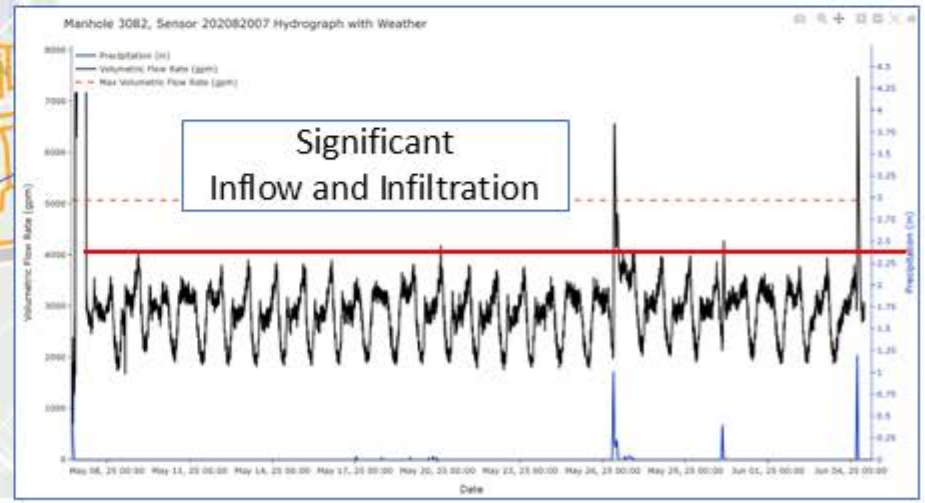
BASINiQ Flow Network Summary









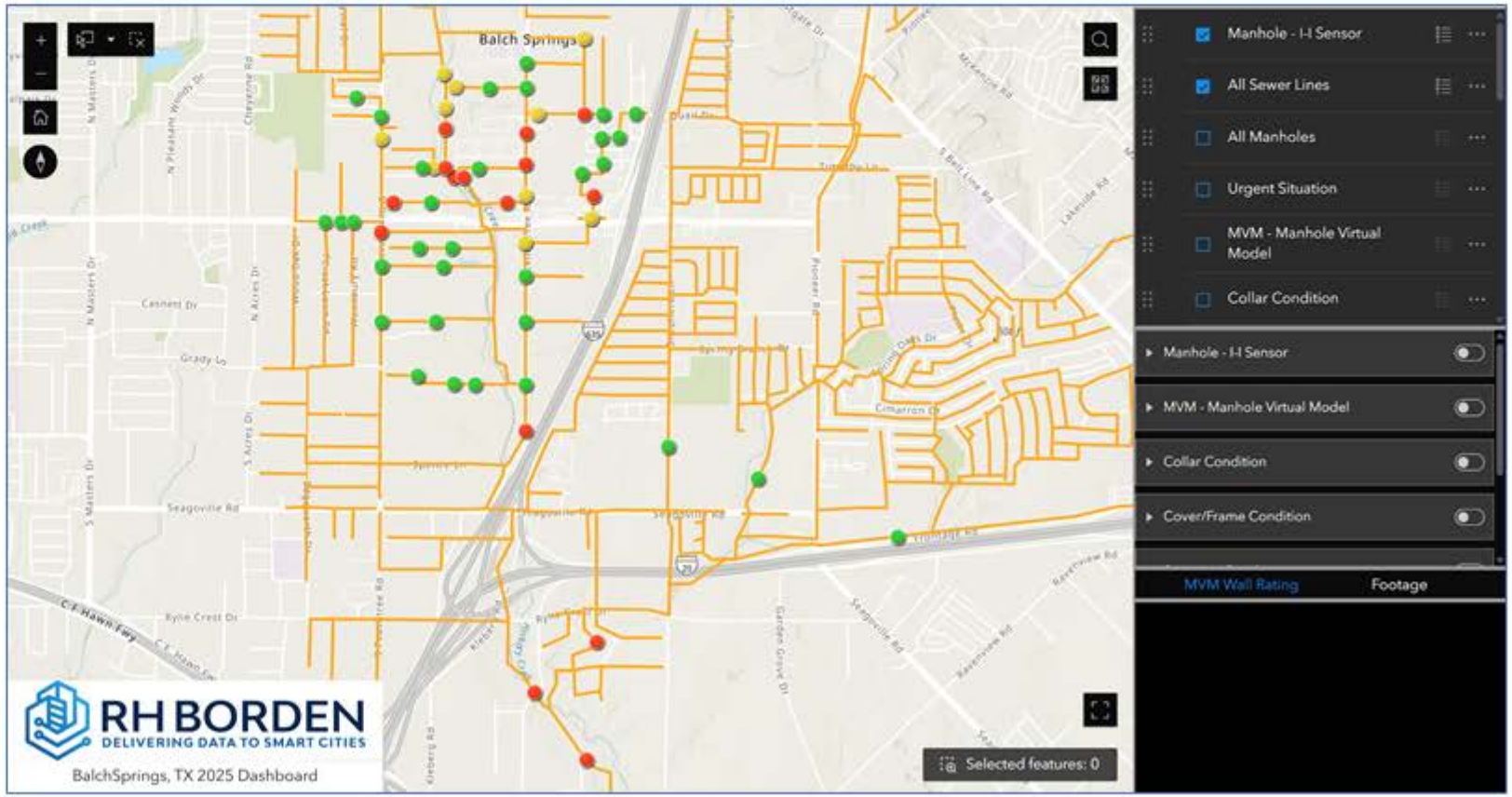


Balch Springs TX
Target Basin Assessment

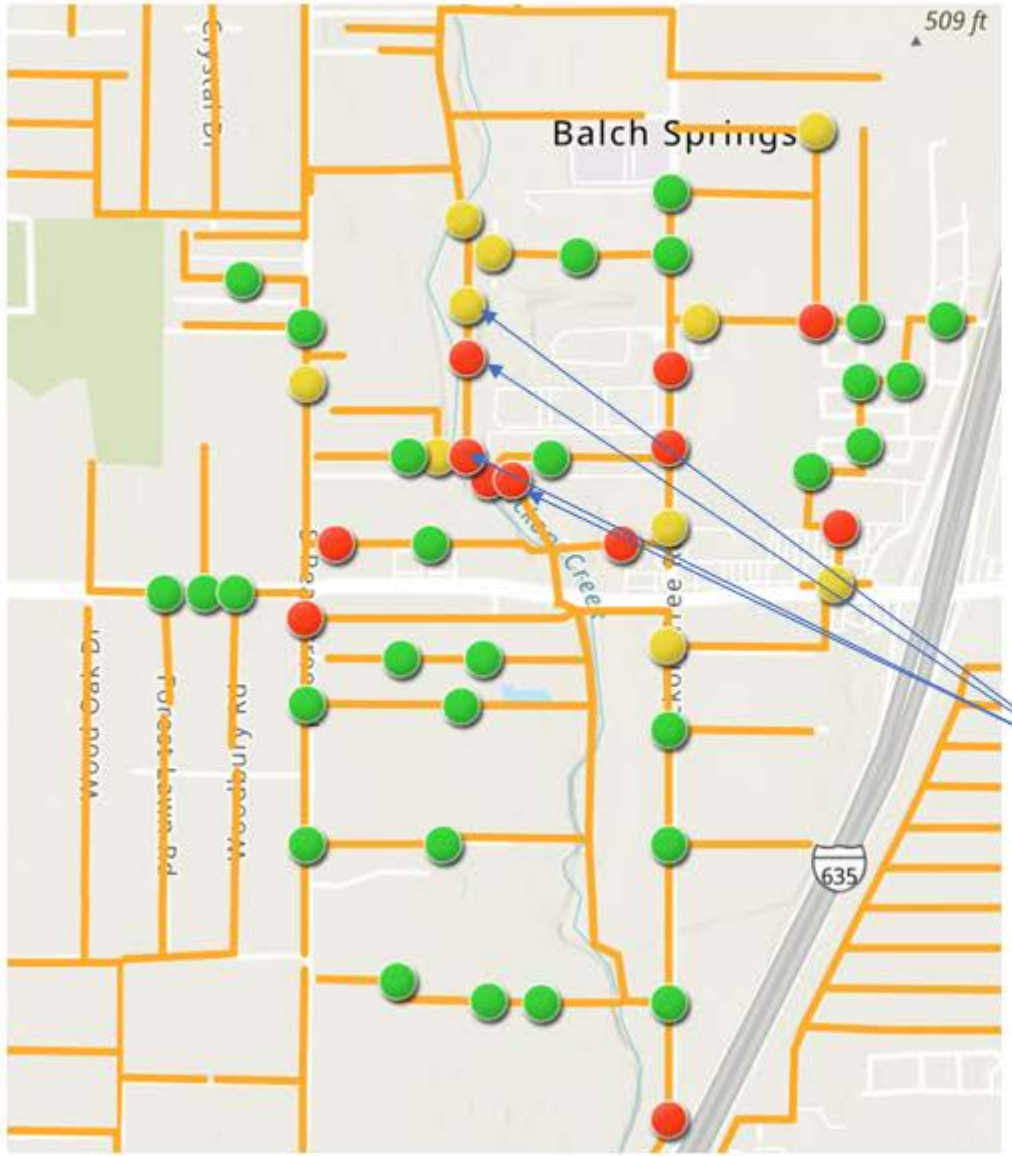
RH BORDEN
DELIVERING DATA TO SMART CITIES

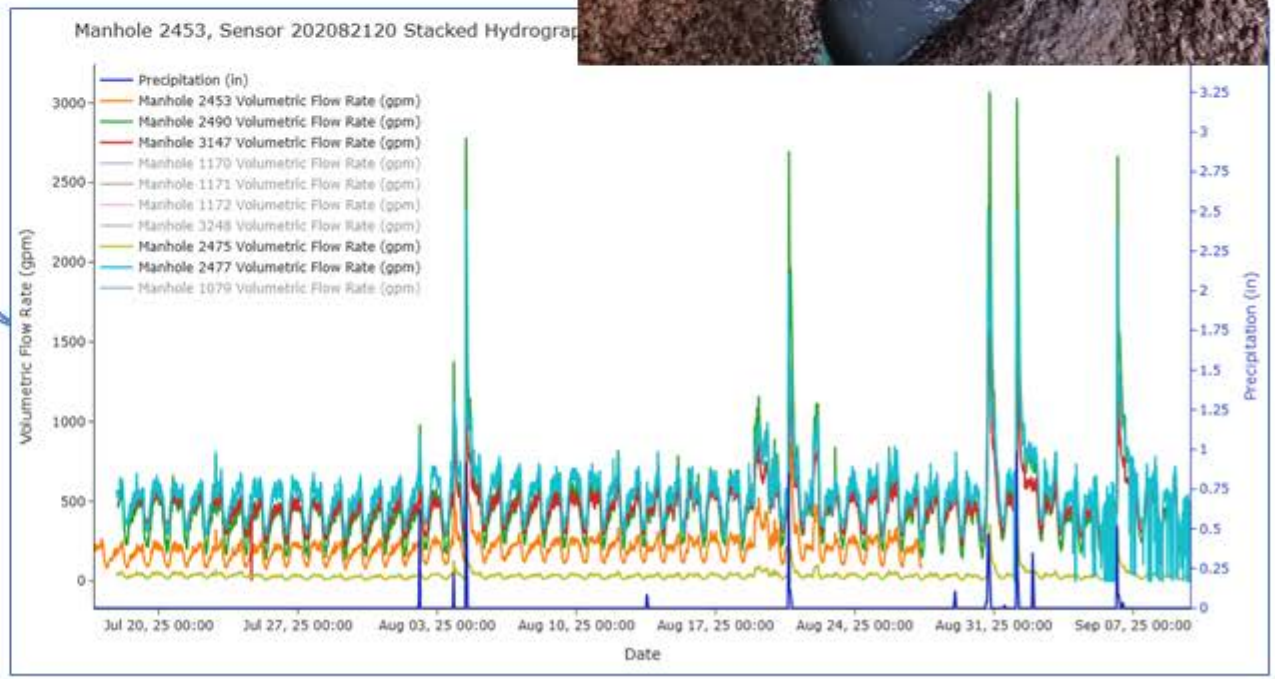
Activity Summary	
✓	51 Sensors Installed July – August
✓	Major Rain Events in August
✓	Manhole Virtual Models (MVM) Analyzed
✓	Next Steps Outlined

I&I Study Dashboard Link:
https://experience.arcgis.com/experience/bb921ab5081040a28fa859bddc8acb76



Target Basin Assessment Summary





BASINiQ I&I Detection

10X Faster – Half the Cost – Data Driven

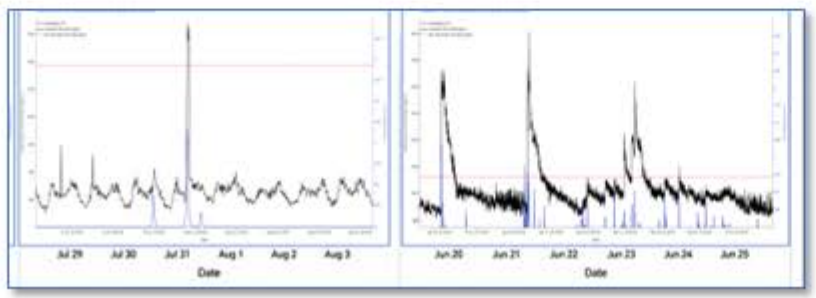
BASINiQ

• INFLOW / INFILTRATION •

1) Digital-Twin Flow Meters

2) Live Weather Integration

3) High-Density Flow Networks



4) Analytics

5) Data Visualization