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EPCOR: Using real-time data to create situational awareness

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AVEVA

EPCOR uses real-time data to drive situational awareness and improve resiliency

Challenge

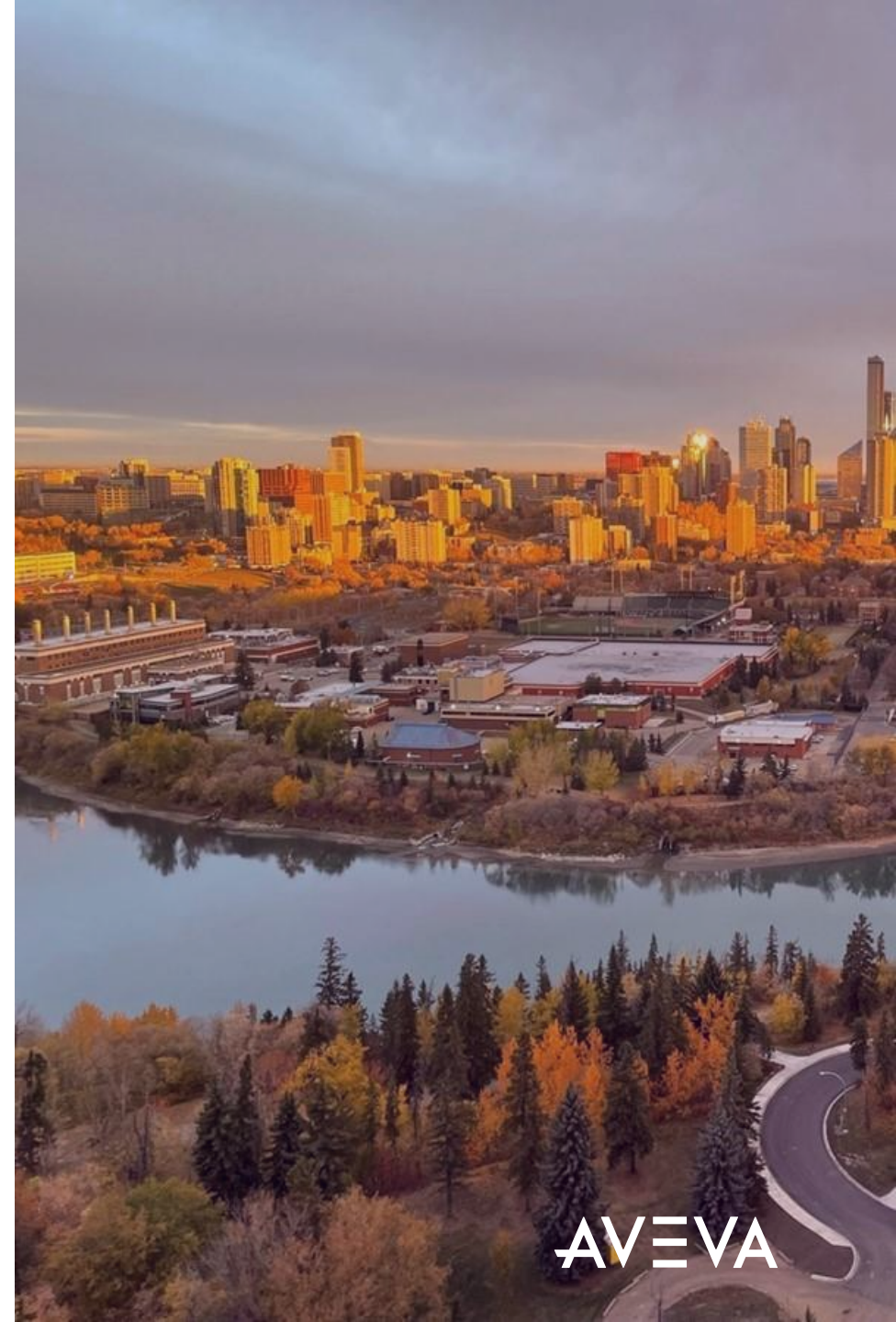
- Increased risk of large rainfall events necessitated a new approach to prevent and reduce the impact of stormwater and urban flooding in the City of Edmonton
- Distinct and isolated systems prevented a real-time view of system performance
- Needed to create secure access to centralized data for user groups and business applications to access actionable information for monitoring, reporting and analysis

Solution

- Implemented AVEVA™ PI System™ to predict and manage the movement of stormwater through smart sensors and technologies that integrate into the collection system

Results

- **Unlocked data and made it accessible to users and applications**
- **Developed system allows people to discover process interdependencies, improving operational performance and cutting response times from days to minutes**
- **Enabled dynamic management of stormwater systems during flood events, ensuring public safety, avoiding environmental releases and saving thousands in regulatory fines**



ABOUT EPCOR



ABOUT KVALE INFORMATICS

Power Generation

Upstream
Oil & Gas

Refining

Terminals &
Pipelines

Mining & Mineral
Processing

Utilities

Data
Governance



HOW WE'RE REDUCING THE RISK OF OVERLAND FLOODING

EPCOR's future flood mitigation work will include a combination of homeowner programs, drainage system improvements, green infrastructure and planning.

The goal is to **slow, move, secure, predict, and respond** to flooding events to prevent or reduce the impact of flooding.



STORMWATER INTEGRATED RESOURCE PLAN

SLOW

We slow the entry of stormwater into the drainage network by absorbing it into green infrastructure and holding it in ponds.

- 1 Dry ponds
- 2 Low impact development — including rain gardens, bioretention basins, box planters and tree soil cells

MOVE

We move excess water safely away from areas at risk.

- 3 Tunnels and trunks
- 3 Separation of storm and sanitary sewers

SECURE

We help secure individual properties in higher risk areas.

- 4 Enhanced Building Flood Proofing Program for residential, multifamily and commercial properties
- 4 Engage and educate owners of 40,000 homes in targeted high and medium-high risk areas
- 5 Additional control gates at outfalls
- 6 Increased maintenance and repair priorities

PREDICT

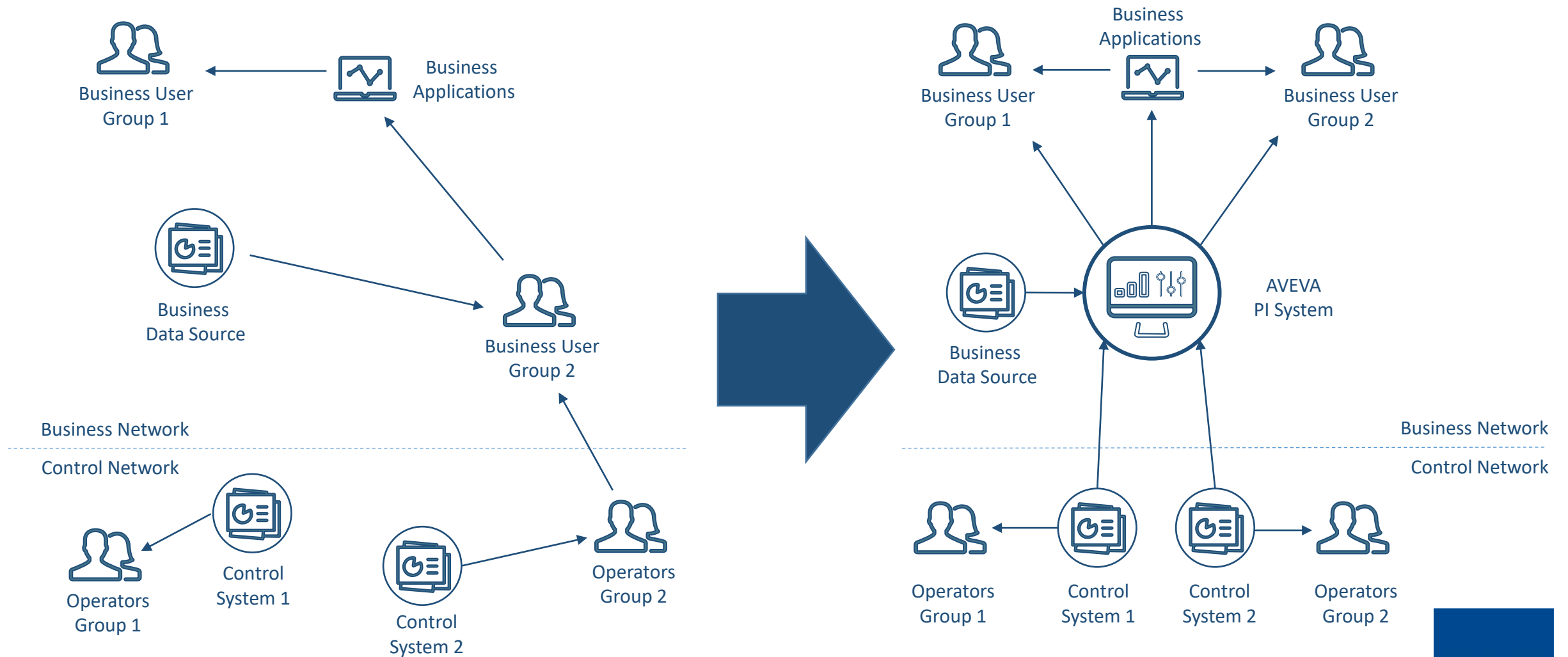
- 7,8 We predict and manage the movement of stormwater in real time through smart sensors, automatic controls and operational dashboards

RESPOND

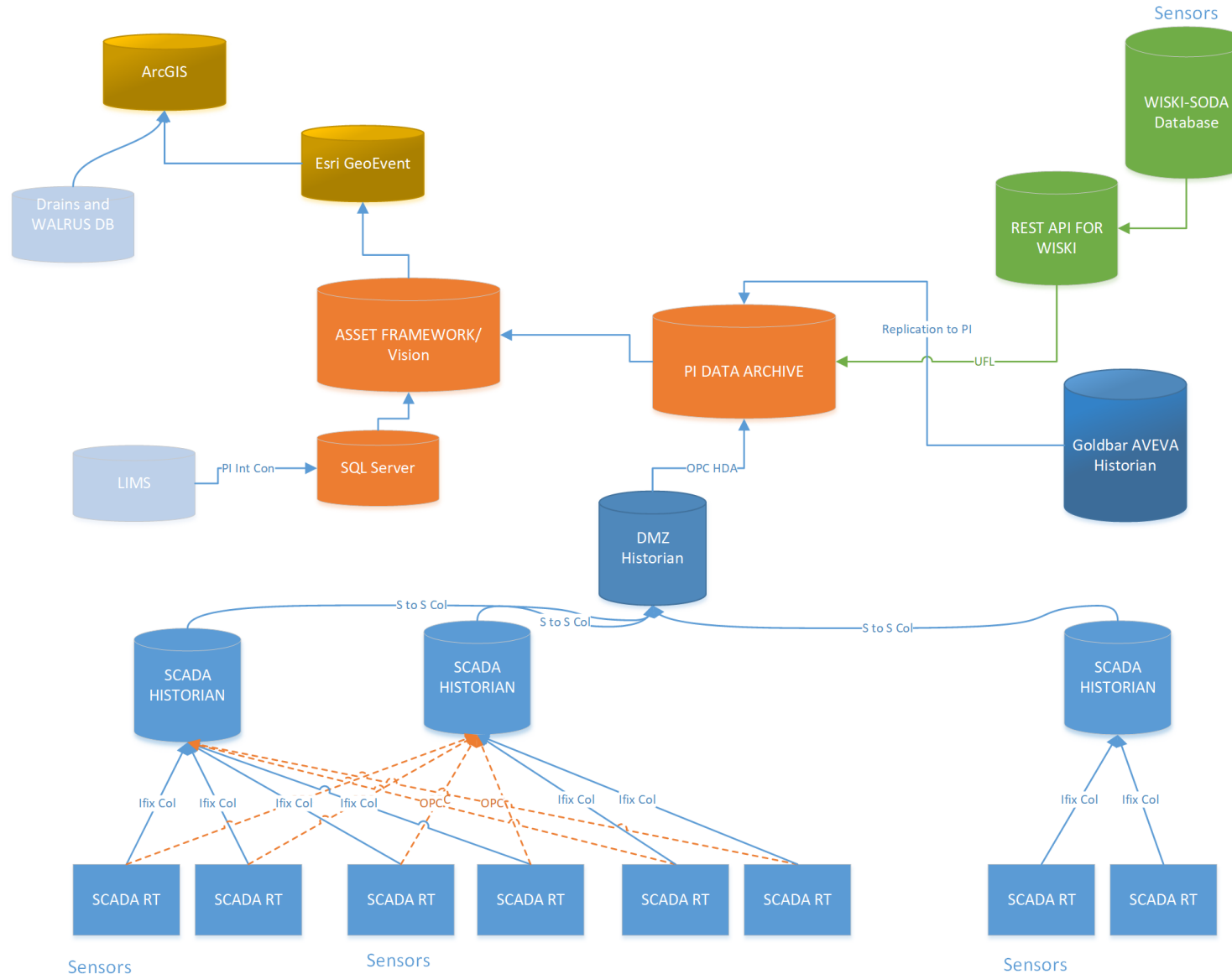
We respond through the fast rollout of flood barriers, traffic diversions and public communications.

- 8 Emergency response in coordination with the City of Edmonton Office of Emergency Management

WRANGLING THE DATA



PI AT EPCOR



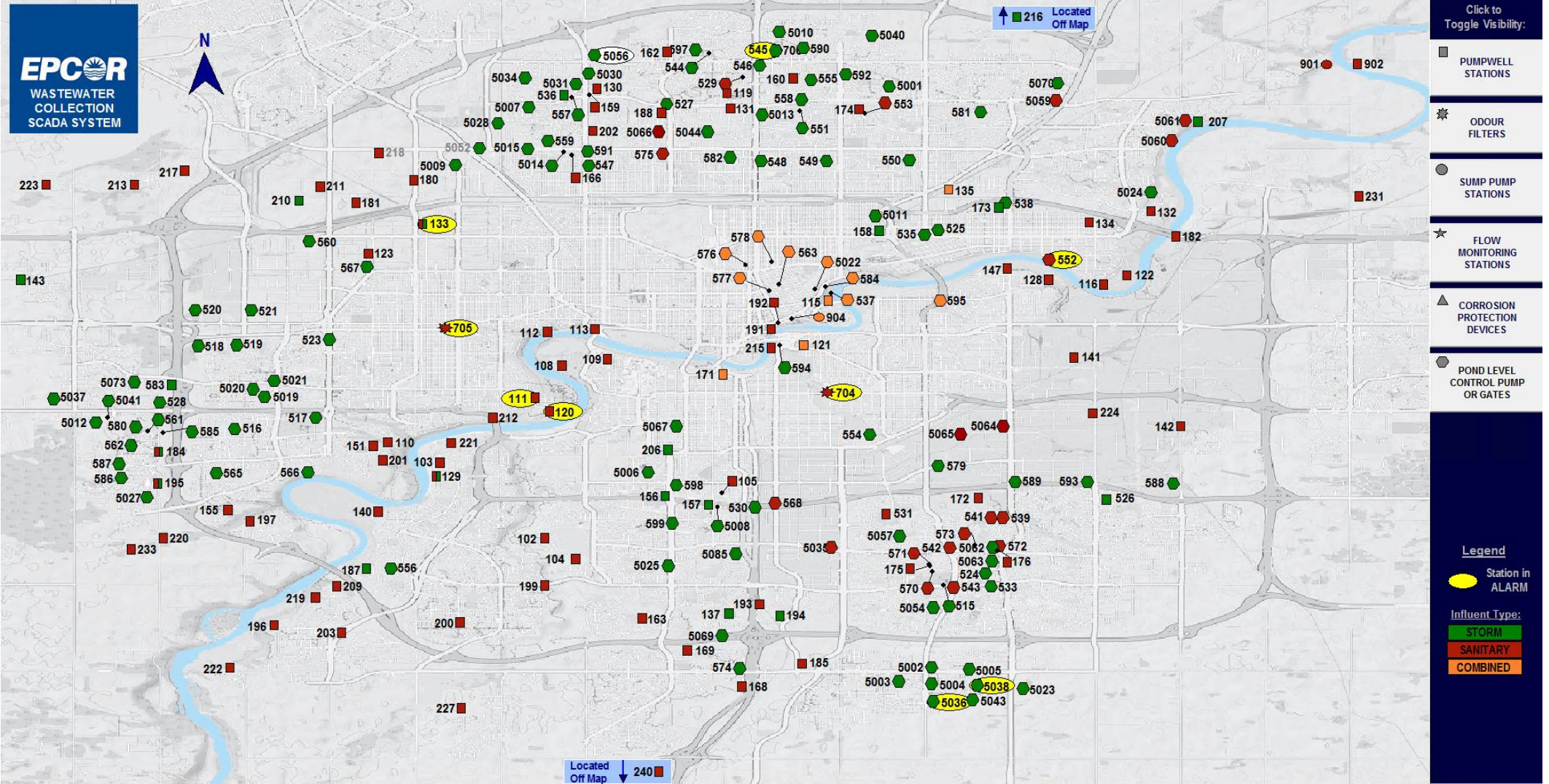
WE HAVE THE DATA...



ITEM OF INTEREST – TRESTLE 7



SCADA SYSTEM VIEW



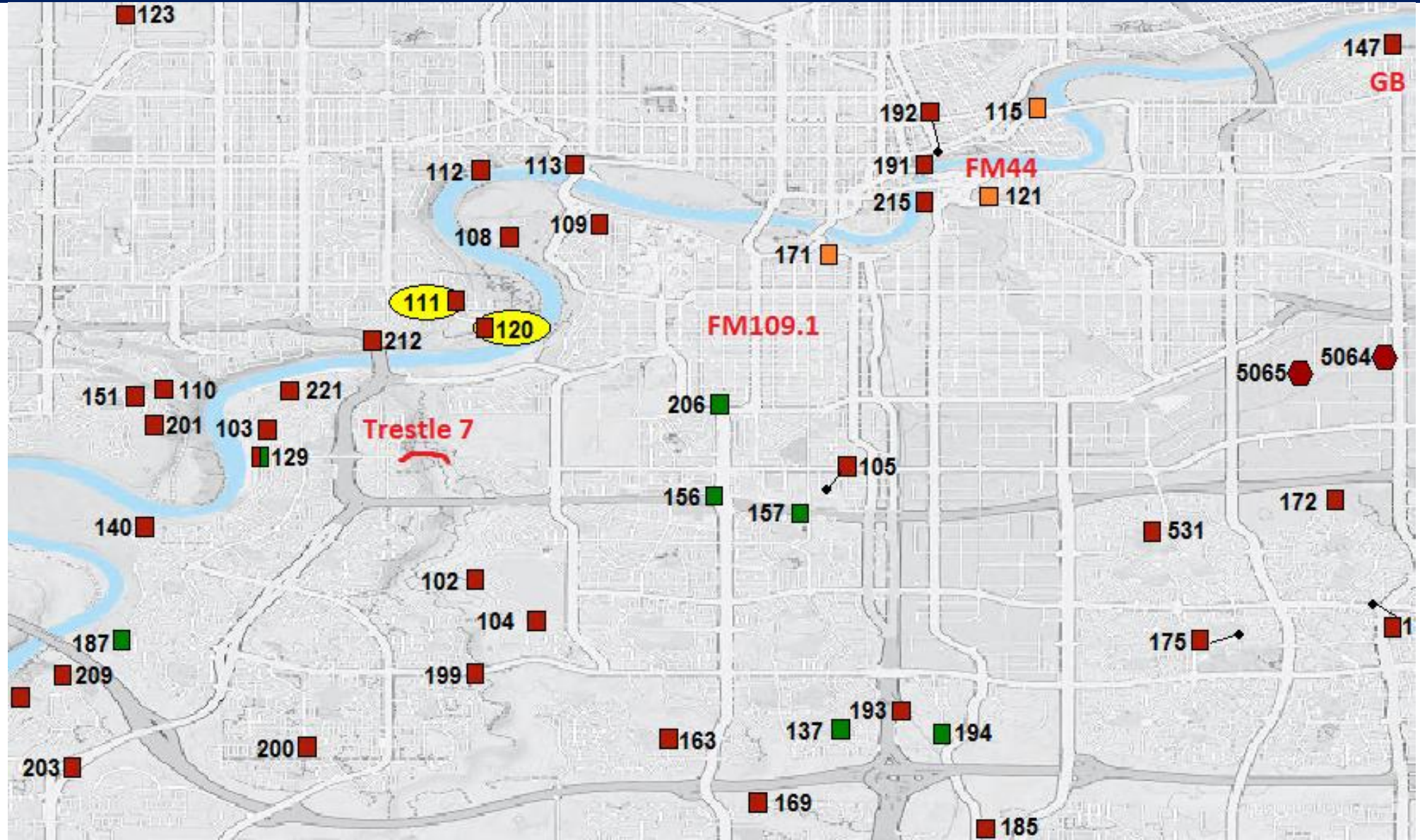
- Click to Toggle Visibility:
- PUMPWELL STATIONS
 - ODOUR FILTERS
 - SUMP PUMP STATIONS
 - FLOW MONITORING STATIONS
 - CORROSION PROTECTION DEVICES
 - POND LEVEL CONTROL PUMP OR GATES

- Legend**
- Station in ALARM
- Influent Type:**
- STORM
 - SANITARY
 - COMBINED

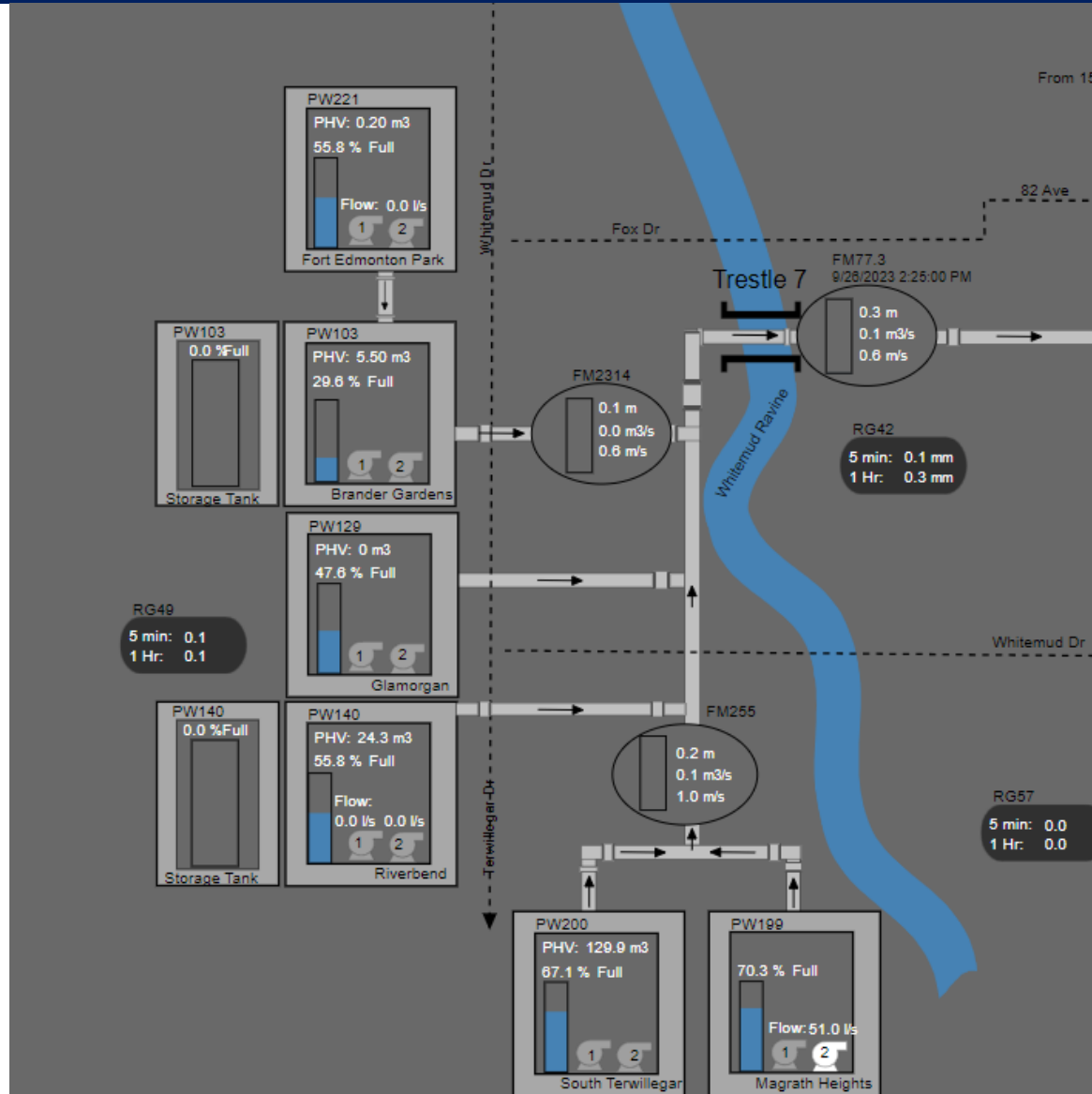
<p>COMMUNICATIONS</p> <p>KENSCA01: ACTIVE</p> <p>KENSCA02: STANDBY</p>	<p>COMMS BYPASS:</p> <p>OFF</p> <p>BYPASS STATIONS VIEW</p>	<p>DISPATCH VIEW SYSTEM</p> <p>MAIN MENU</p> <p>ALARM / EVENT HISTORY</p> <p>CURRENT ALARM SUMMARY</p>	<p>STATION NAVIGATION</p> <p>PW </p> <p>Station Name </p> <p>OPEN PICTURE</p>	<p>CURRENT DATE/TIME</p> <p style="font-size: 1.2em; font-weight: bold;">9/25/2023</p> <p style="font-size: 1.2em; font-weight: bold;">10:41:09 AM</p>
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DOES THE SCADA SCREEN HELP?



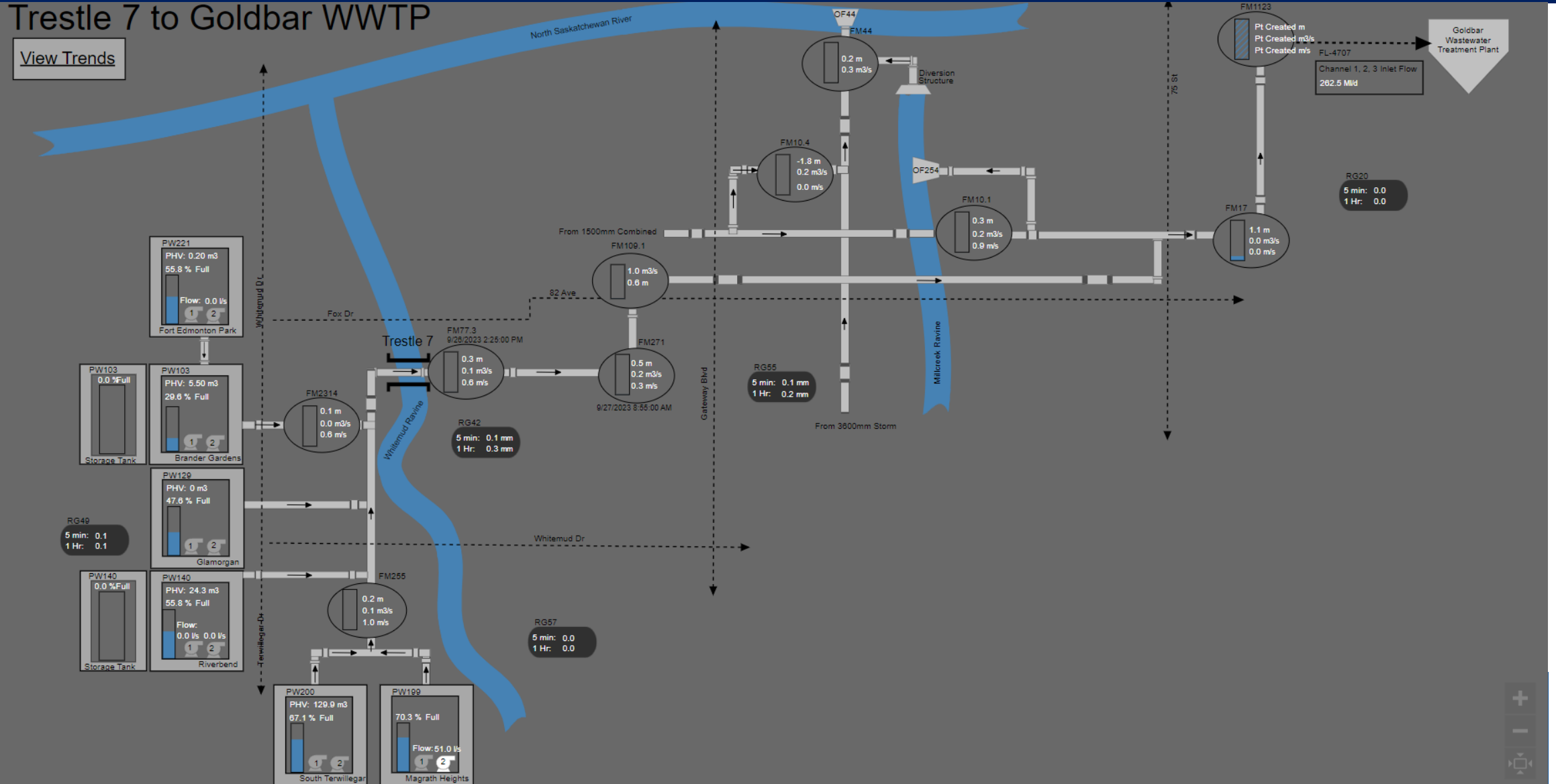
TRESTLE 7 PI SYSTEM VIEW



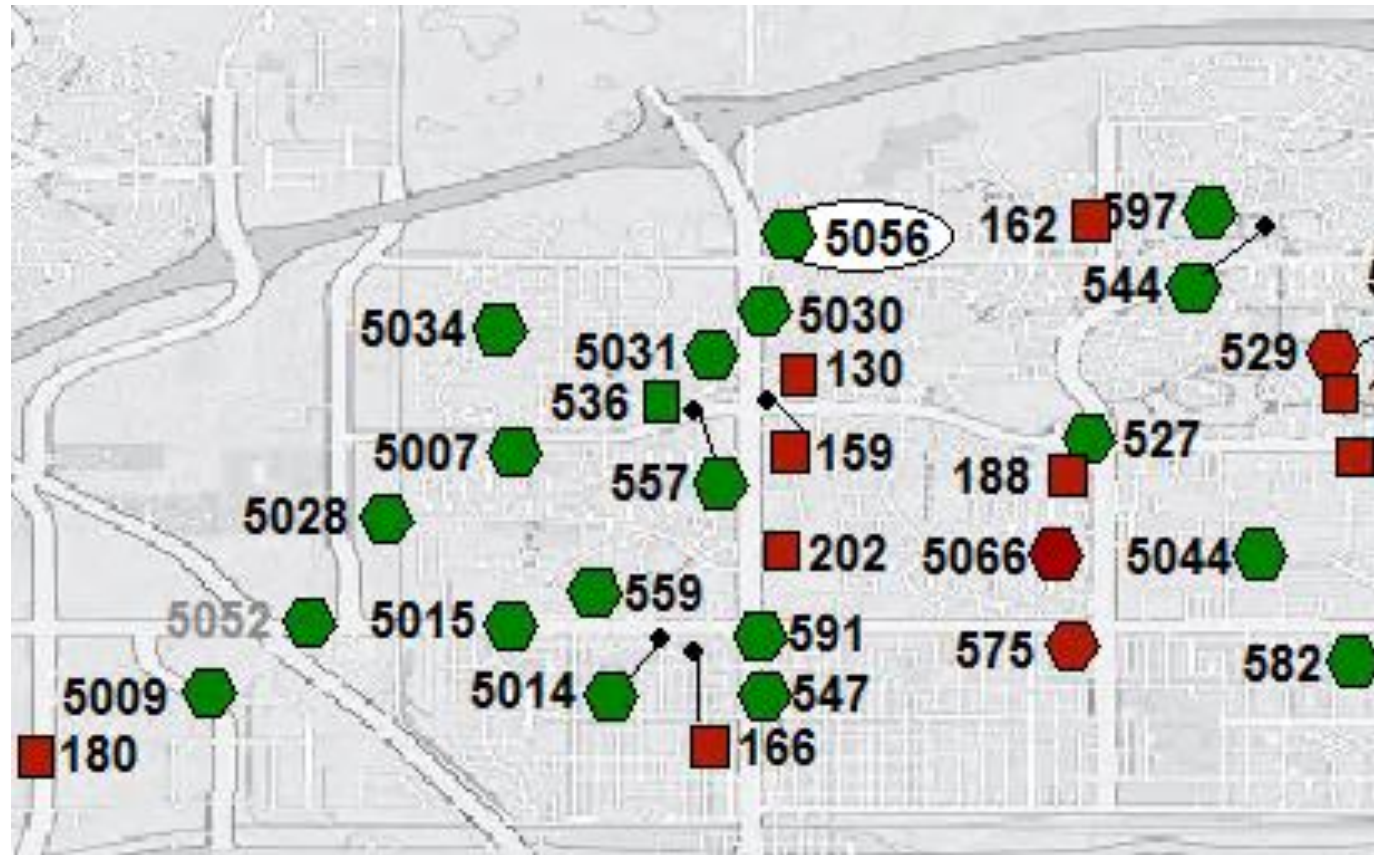
TRESTLE 7....EXPANDED

Trestle 7 to Goldbar WWTP

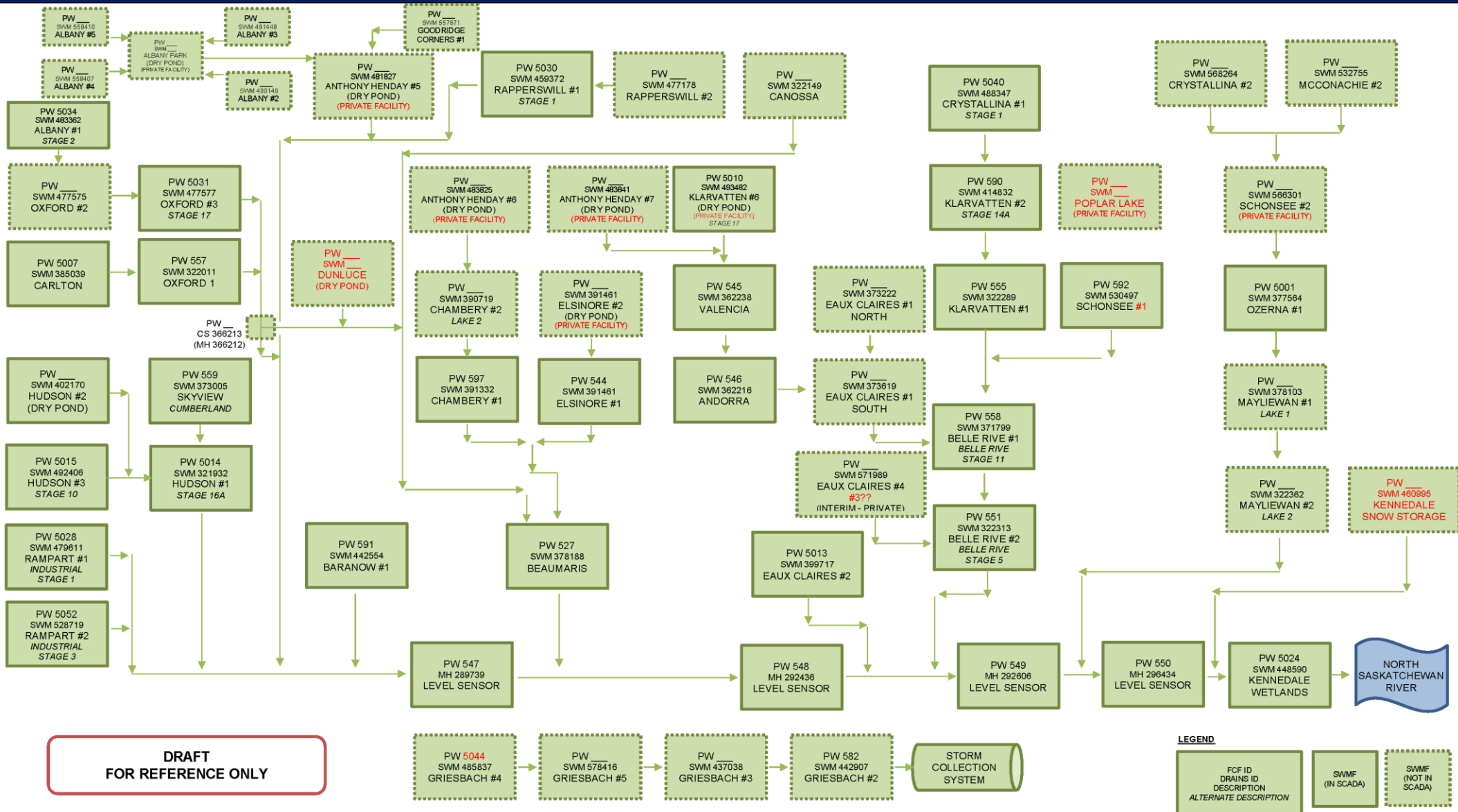
View Trends



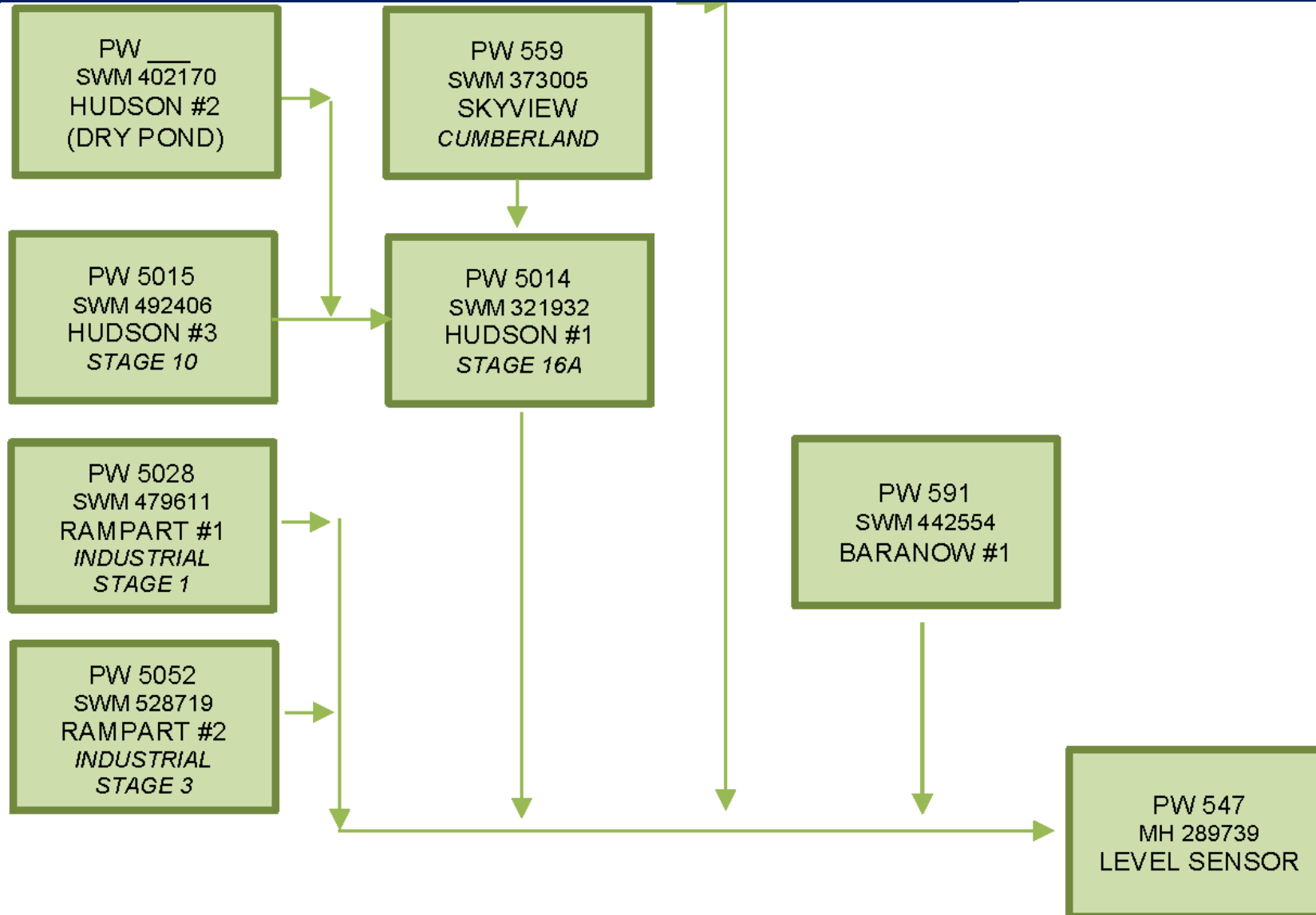
NORTHWEST STORM SYSTEM



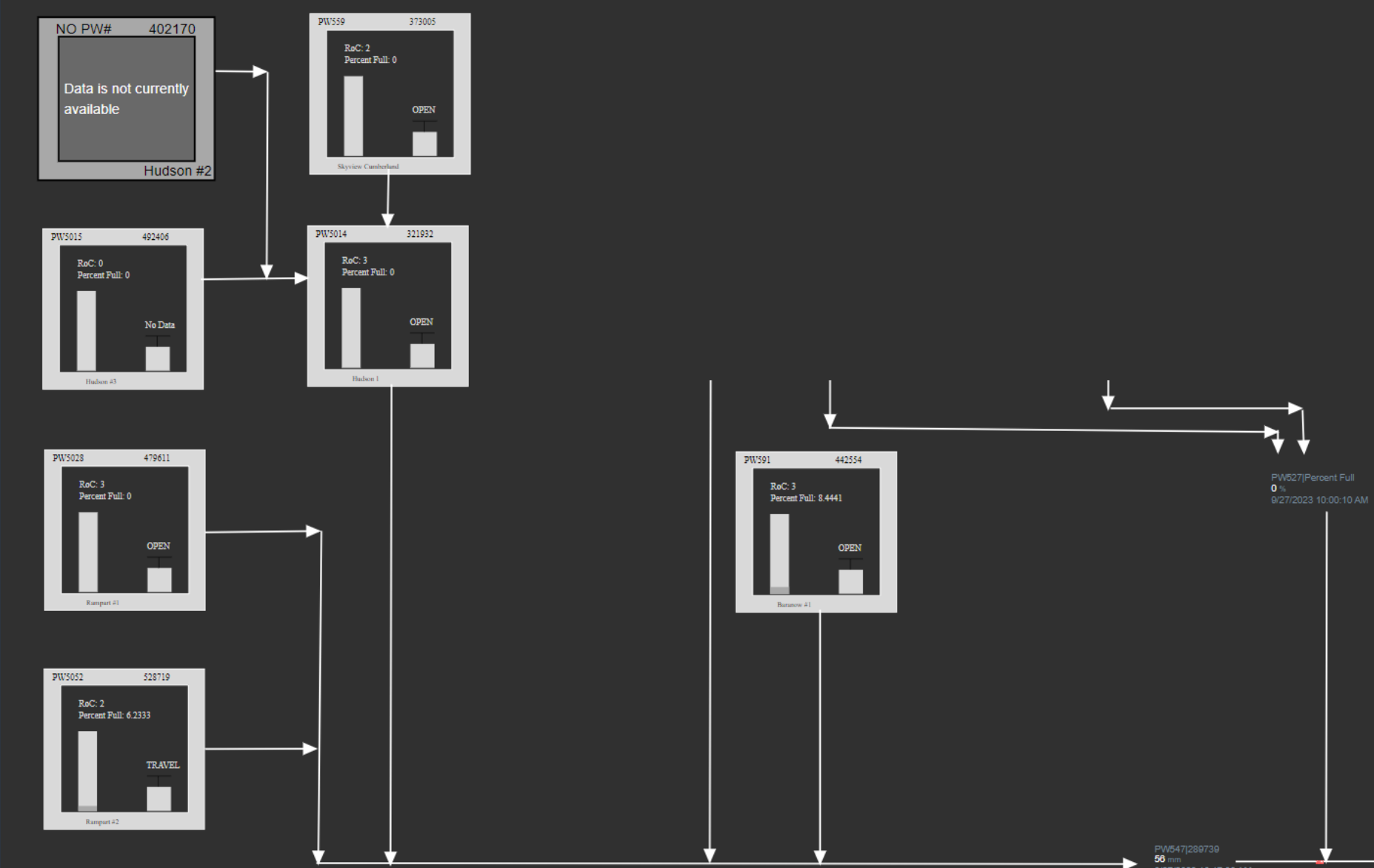
NORTHWEST STORM SYSTEM - PFD



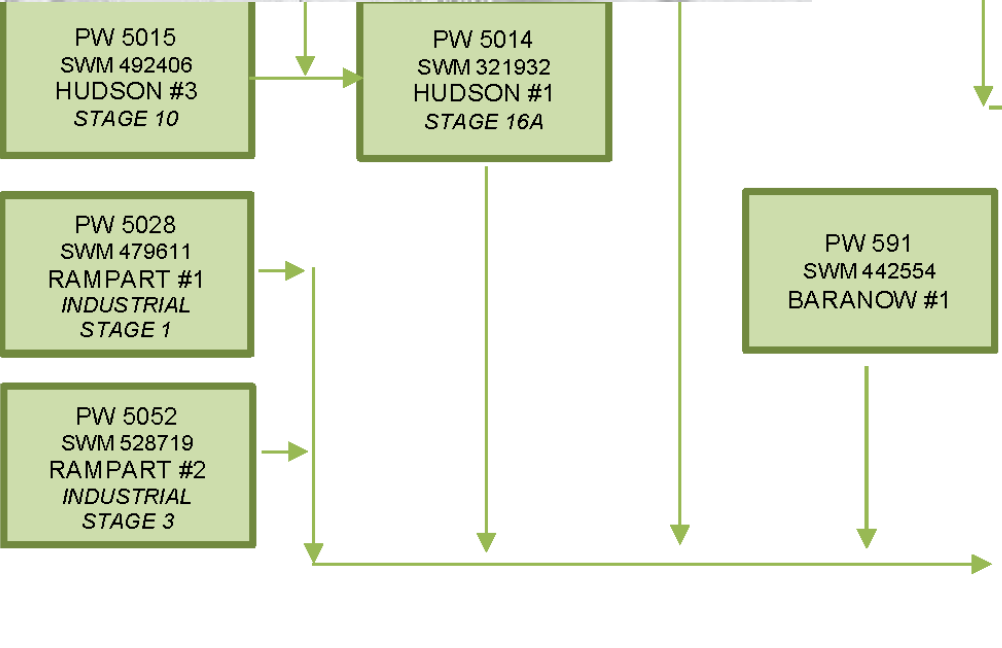
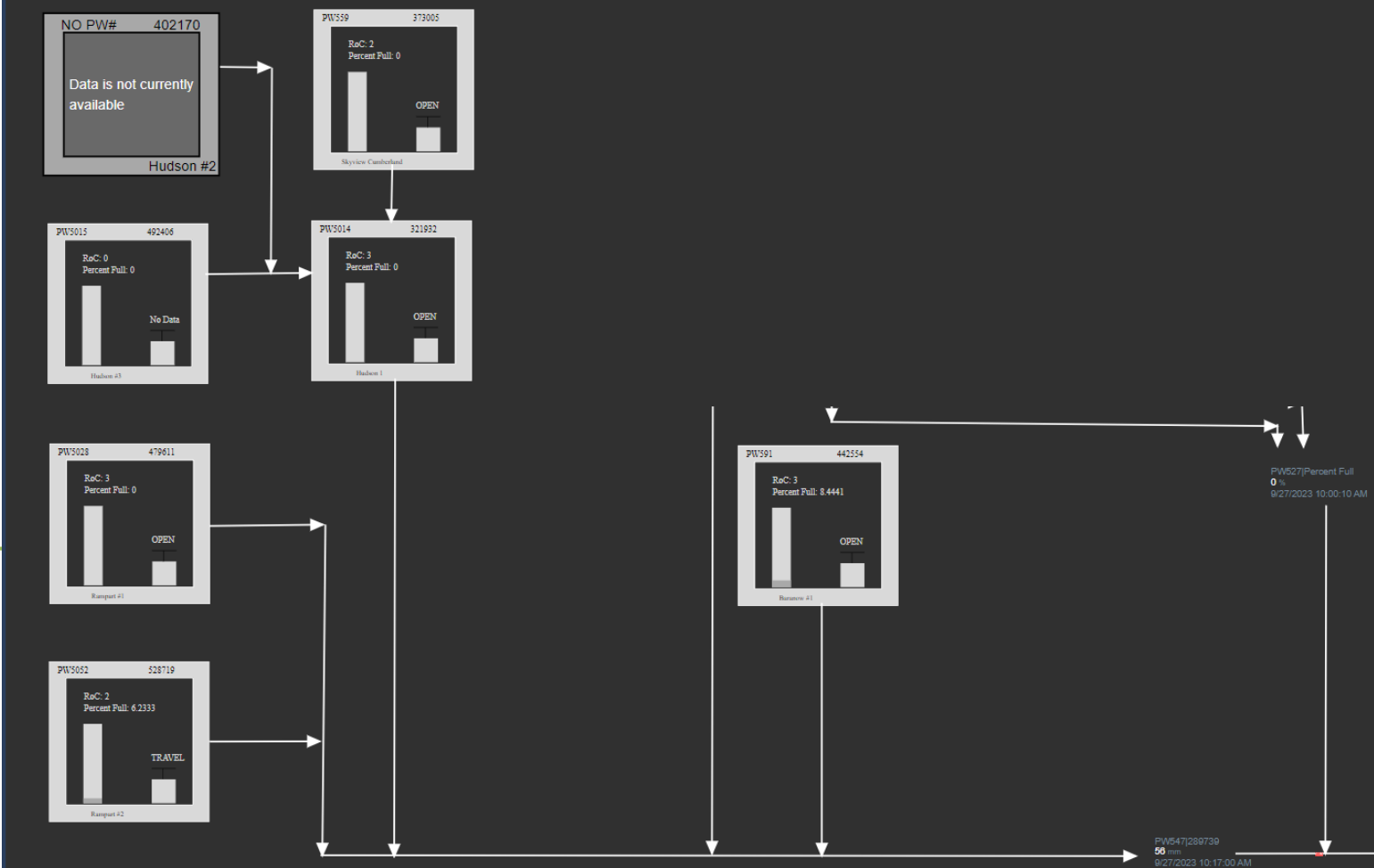
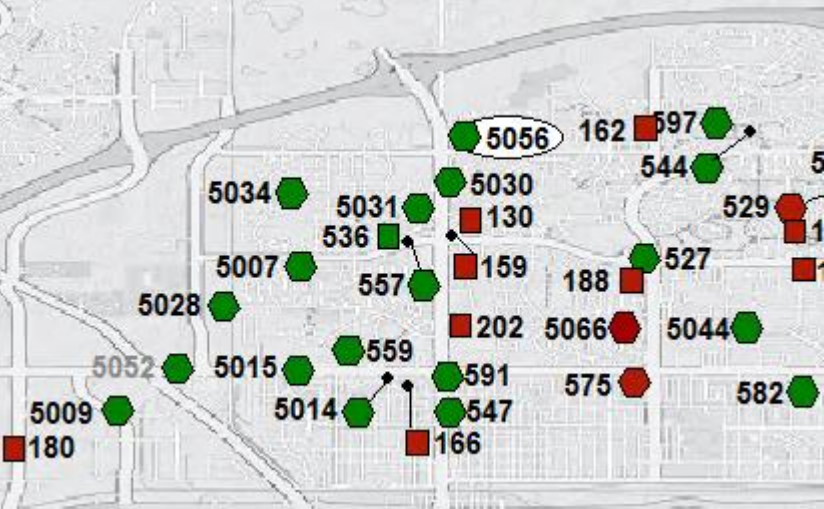
NORTHWEST STORM SYSTEM – PFD ZOOM



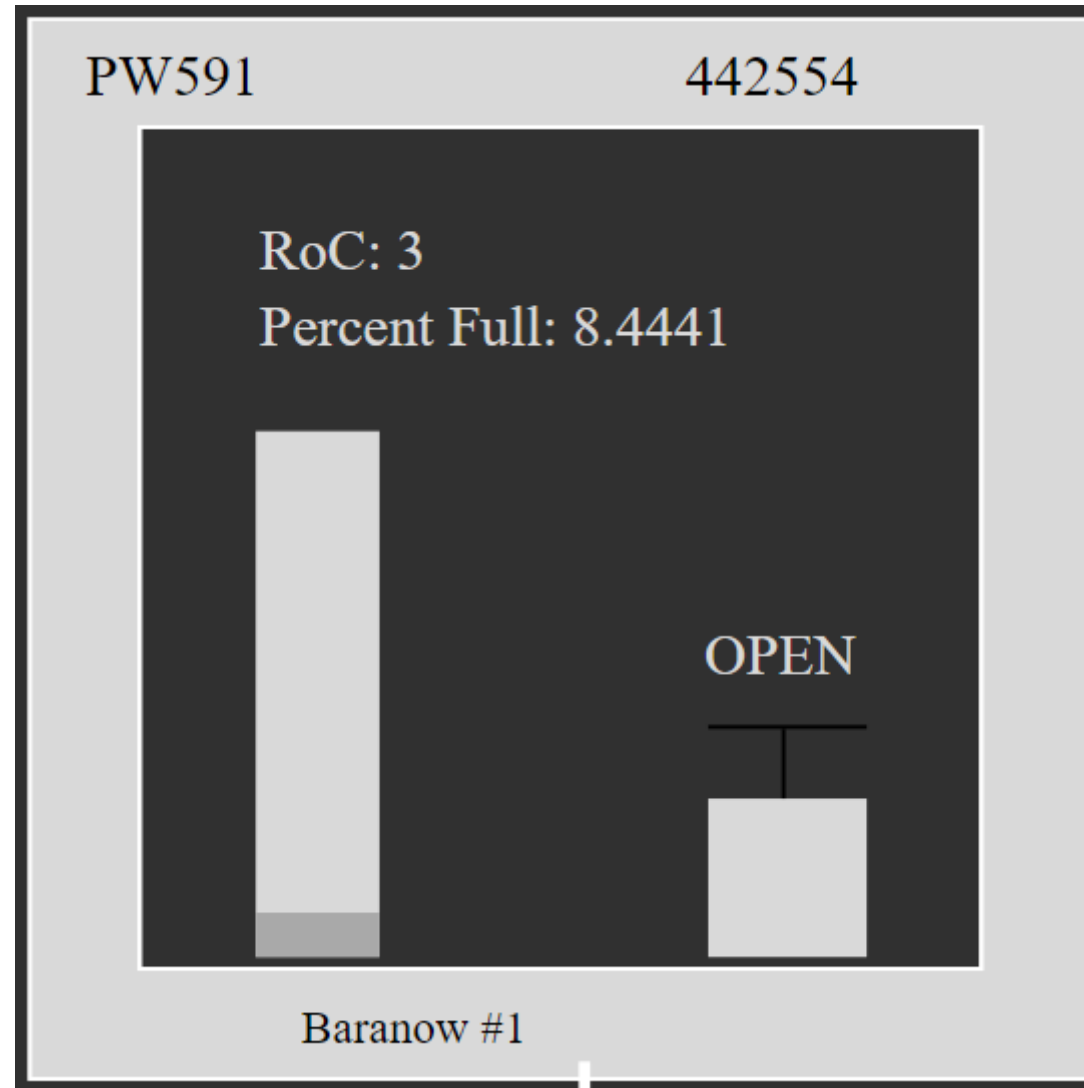
NORTHWEST STORM SYSTEM – PI ZOOM



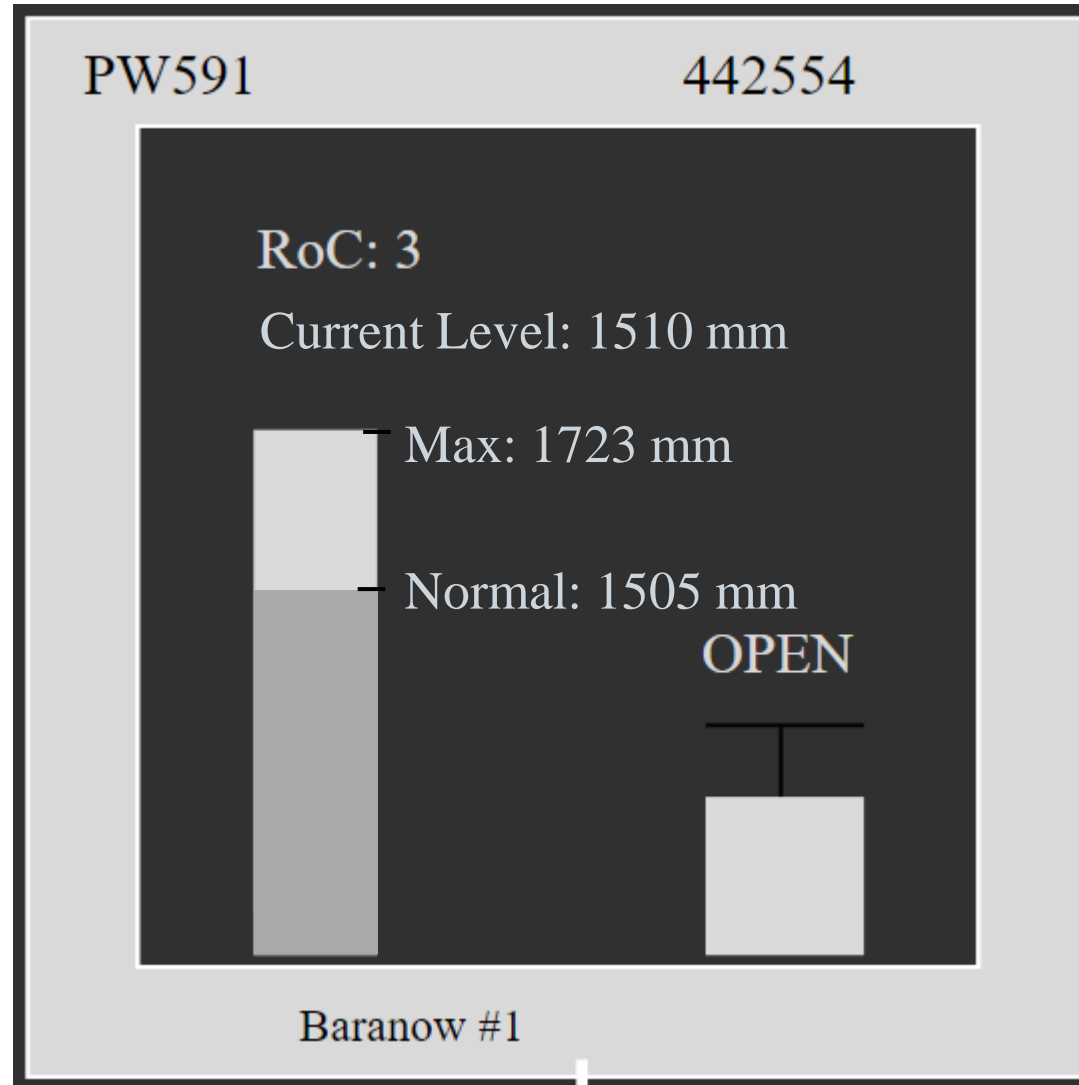
NORTHWEST STORM SYSTEM – PI ZOOM



GLOBAL OBJECTS



GLOBAL OBJECTS



NORTHWEST STORM SYSTEM – ALERTS



NORTHWEST STORM SYSTEM – ALERTS



WHAT'S NEXT?

- After prototyping the Northwest SWMF dashboards, we've educated and enabled the group responsible to tackle the other quadrants of the city themselves (with our support)
- Work closely with Wastewater Collection Operations to develop system view of Sanitary Collection System. Start with trunklines and then "spider web" out from there.
- Keep building momentum by sharing dashboards already created to show users what's possible, with a view to providing inspiration.
- Working closely with other "power users" within EPCOR to both enhance their experience and give platforms to share their findings.





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Questions?

Please wait for the microphone.
State your name and company.



Please remember to...

Navigate to this session in the mobile app to complete the survey.



Thank you!

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