MAY 18, 2022

Unified operation and data platform streamlines efficiency and optimizes water production

Infrastructure Track PI World 2022

Vishal Mahna

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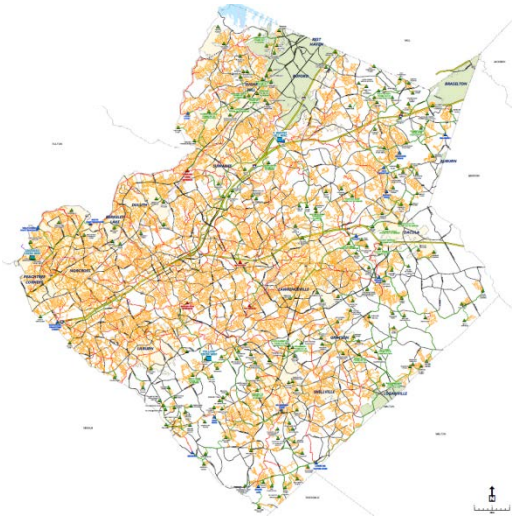
Agenda

About Gwinnett Water

SCADA and UOC Journey

- Share the journey towards SCADA modernization, deployment of UOC and implementation of cyber security

Lessons learned through this journey



Gwinnett County

Atlanta, Georgia area

- Serving a population of 936,307 from Lake Lanier with a staff of 567 employees
- 245,840 water meter accounts
- 70 million gallon / day capacity
- 4000 miles of distribution pipes
- 3000 miles of sewer pipelines
- 1400 miles of stormwater drainage pipes
- F. Wayne Hill WRC is one of the largest membrane and ozone facilities in the world
  - 13,000 critical assets

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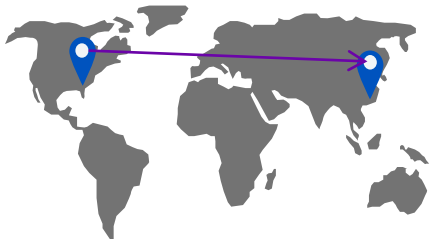
The Department of Water Resources

DWR Mission -To provide superior water service at an excellent value

- 2 Water production plants
- Water Distribution System
- WW Collection System
- 3 WW Reclamation Plants



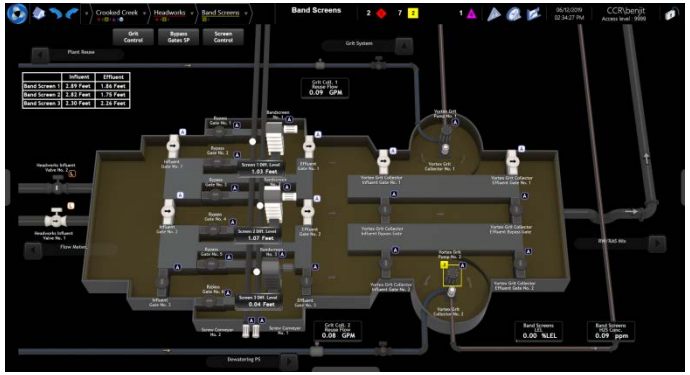
- Protecting Public Health
- 437 square miles
- 940,000 Population
- 8,000+ miles of Pipes

F. Wayne Hill WRC is one of the largest membrane and ozone facilities in the world

Working to be a utility of the future

DWR strategy

Continuous improvement through personal commitment, innovation, efficiency, and education

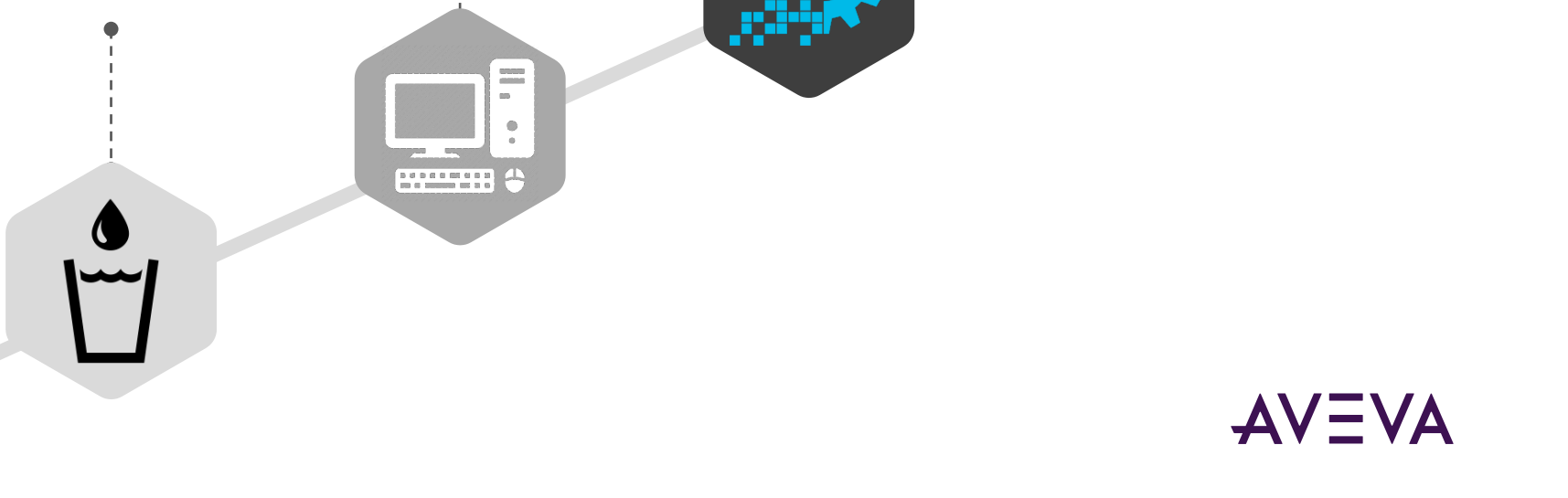


Providing fundamental & reliable services

Optimizing operations, delivery and Support

Transforming operations and systems to meet future needs

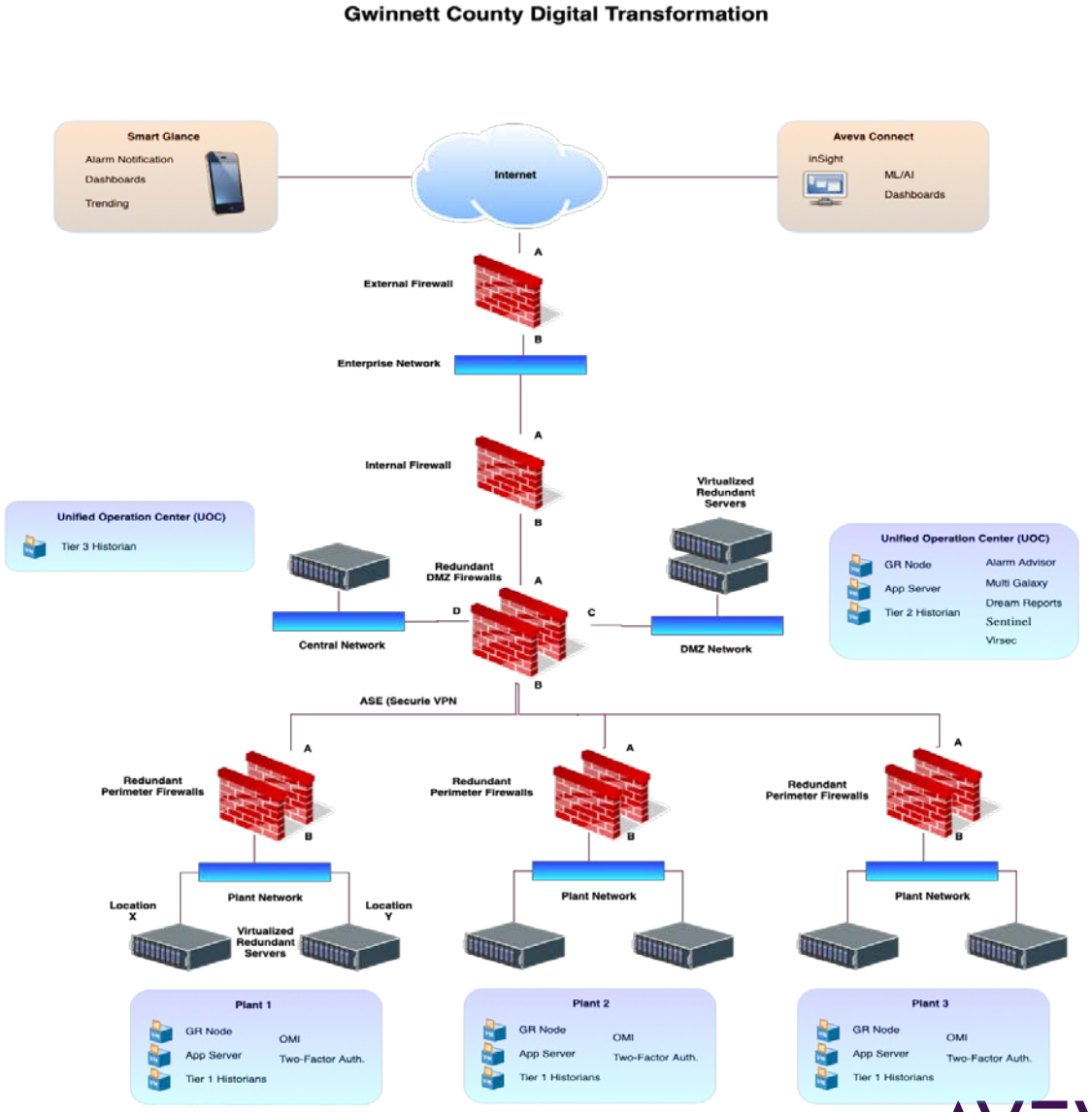
Continue to be a utility of the future



Digital Transformation/Security Lesson Learned

Gwinnett County Water Resources

- OMI (Plant Level)
  - Design Concepts & Situational Awareness
  - PreVision (Visual Pattern Recognition)
  - Two Factor Authentication
  - Playback
- UOC
  - Multi Galaxy (DMZ & Enterprise)
  - Access Anywhere OMI
- Enterprise Level
  - Insight View (Cloud)
  - Alarm Advisor (Decision Support Systems)
  - AI/ML (Behavioral Analysis)



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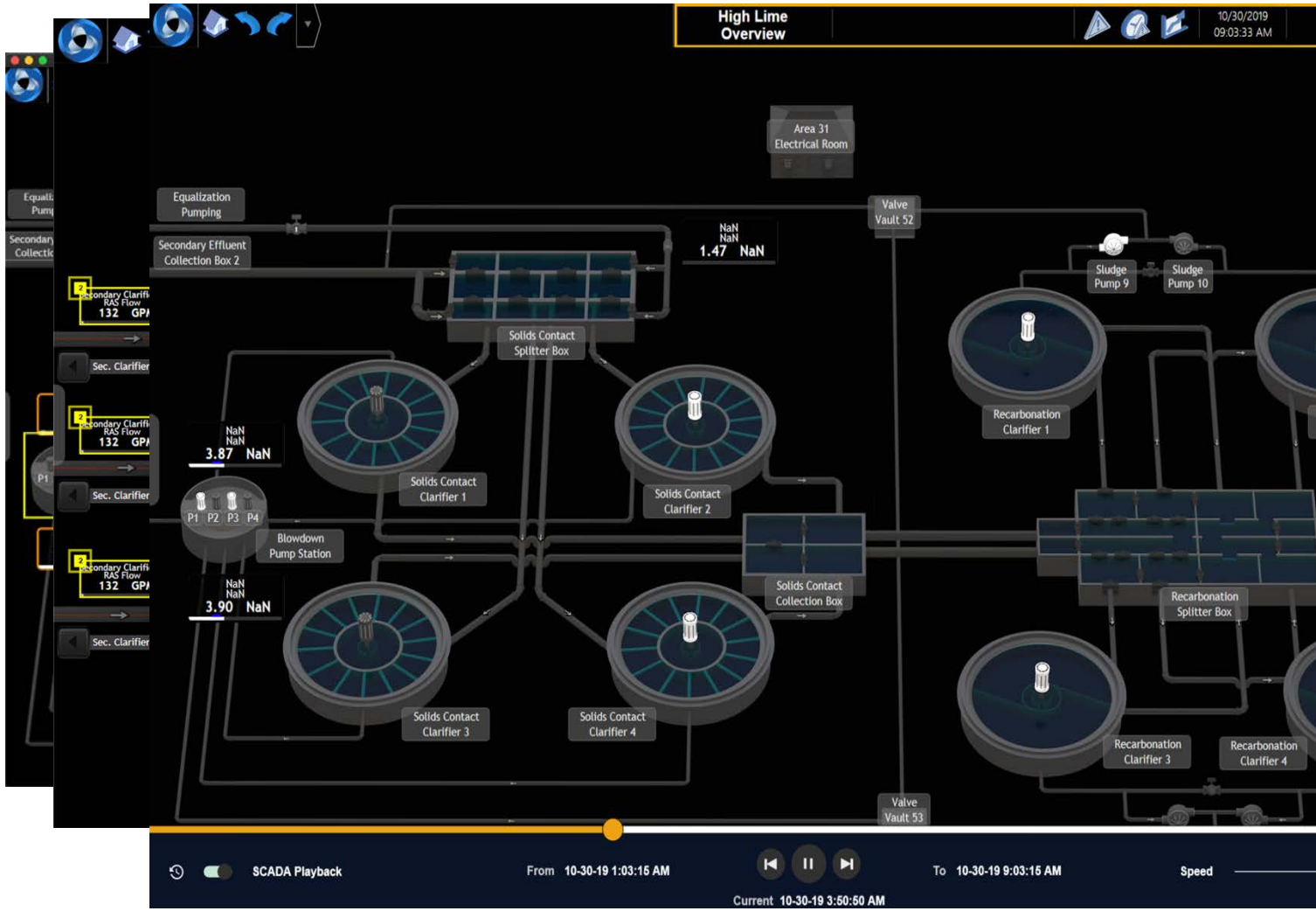
OMI (Plant Level)

Design Concepts & Situational Awareness

- Adaptability
  - Response Compatibility
  - Digital Twin
  - Dynamic Sizing
- Consistency
  - Symbol Libraries
  - Element Style Libraries
- Explicit and Implicit Messages



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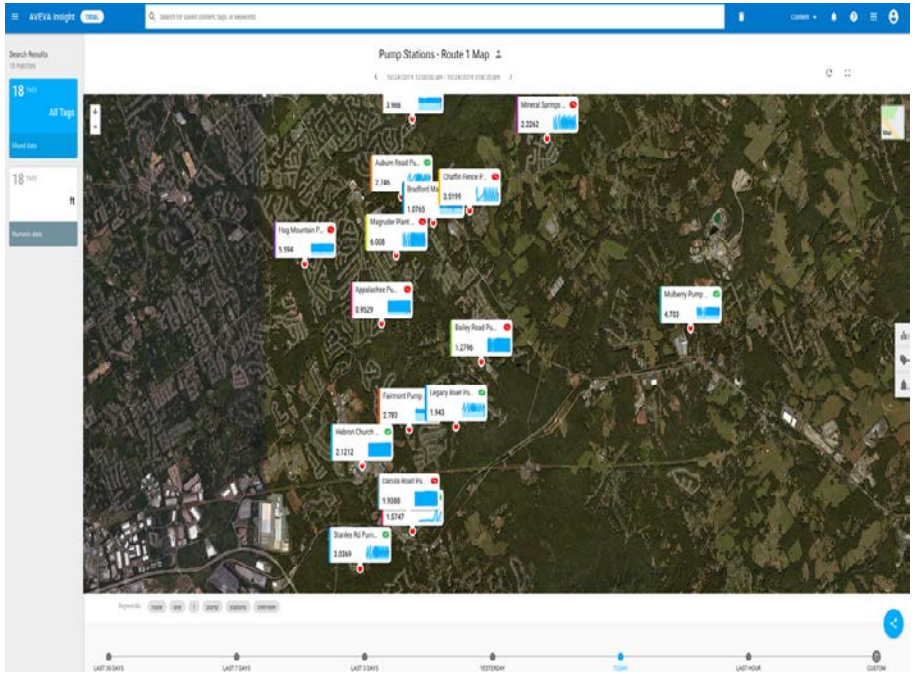
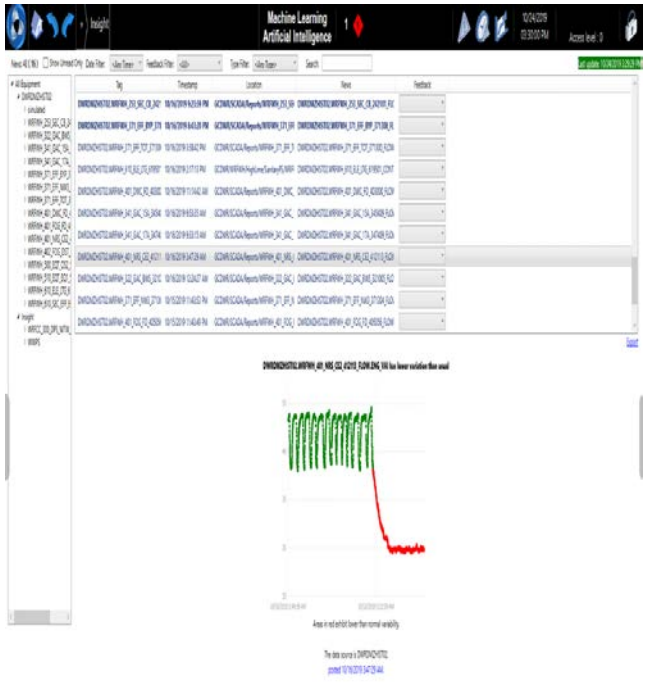
Enterprise Level

Staying ahead of the curve with Insight

- Elevate knowledge
  - Map View
  - Dashboards
  - Alexa Integration
  - Cloud Integration – AI/ML/Data Sharing





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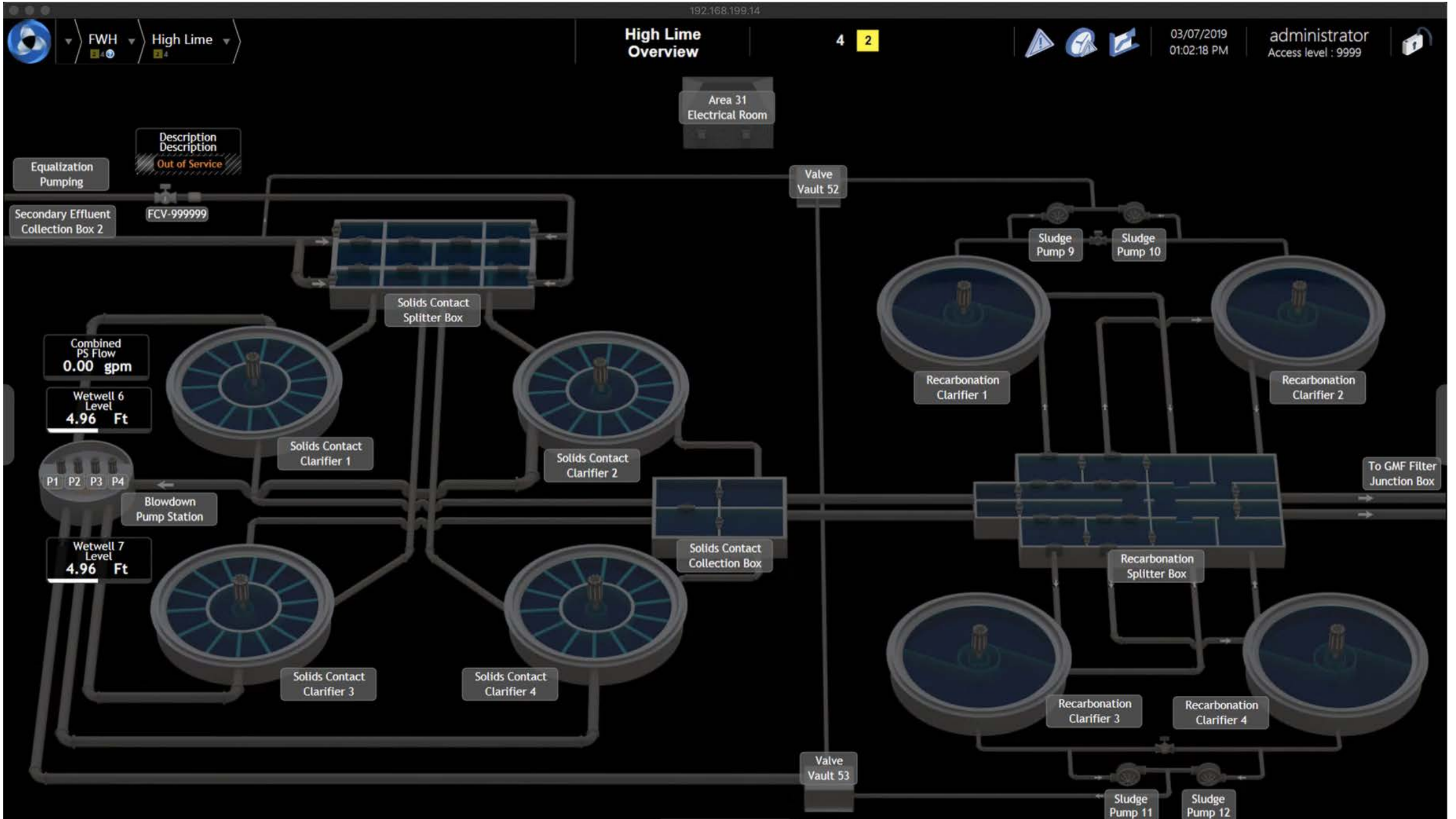
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High Lime
High Lime Overview
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Description
Description
Out of Service
Equalization Pumping
Secondary Effluent Collection Box 2
FCV-999999
Valve Vault 52
Sludge Pump 9
Sludge Pump 10
Solids Contact Splitter Box
Combined PS Flow
0.00 gpm
Wetwell 6 Level
4.96 Ft
Recarbonation Clarifier 1
Recarbonation Clarifier 2
Solids Contact Clarifier 1
Solids Contact Clarifier 2
P1 P2 P3 P4
Blowdown Pump Station
To GMF Filter Junction Box
Wetwell 7 Level
4.96 Ft
Solids Contact Collection Box
Recarbonation Splitter Box
Solids Contact Clarifier 3
Solids Contact Clarifier 4
Recarbonation Clarifier 3
Recarbonation Clarifier 4
Valve Vault 53
Sludge Pump 11
Sludge Pump 12

Gwinnett County Overview Map

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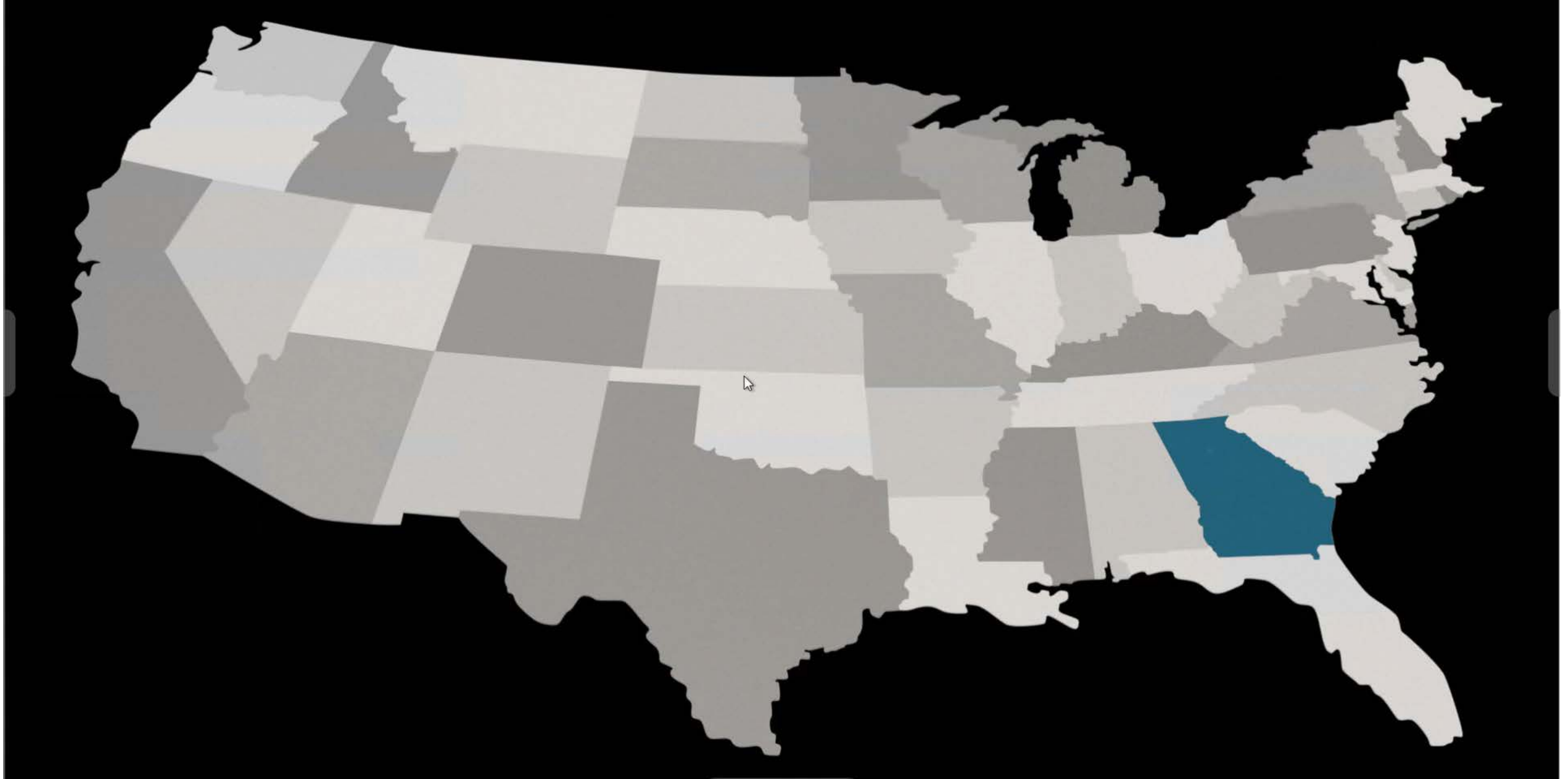

Visibility Drives Performance

Key Questions to Achieve Operational Excellence

Real-time Performance Management

How am I doing (right now!) relative to my plan?

Real-time Decision Support

What should I do (right now!) to maximize the capability of our operations?

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Kohima Smart City

AVEVA's Unified Operations Center helps create blueprint in sustainable smart city innovation

Integrated cross-city command center and technology platform optimizing the management and efficiency of the city's smart services

Deployed remotely to manage traffic, energy consumption using smart street lighting, city pollution monitoring and public address system

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