“Getting Comfortable Being Uncomfortable: The Foundations of a Smart Water Journey”

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LOUISVILLE MSD’S DATA DRIVEN DIGITAL TRANSFORMATION CASE STUDY

Presenter: Melinda Tam, PE, Tetra Tech
MSD BACKGROUND

LARGE UTILITY:
Largest nonprofit public utility in KY

STAKEHOLDERS:
755,000 residents
24 million annual visitors

CORE BUSINESS:
WW Collection & Treatment
Stormwater Management
Riverine Flood Protection
• Highly complex and interconnected network
• Spatial and temporal variability of flows
• Changing conditions at any time

• **Optimizes**: Solves complex routing for optimal flow management

• **Robust**: anticipates all possible failures with security to avoid risks

• **Adaptive**: responds to rapid changing field conditions and climate – Real time control loop in 5 minutes

• **High performance**: optimizes critical operational decisions in real time and anticipates future conditions
PROGRESSIVE OPTIMIZATION

- Start with low set points
- Gain confidence over time
- Raise set point without adverse impacts
- Skeptics to believers
- Provide operational tools
- Continuous improvements
LOUISVILLE MSD

23-year Digital Water Transformation Journey

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Successful Adaptive Management
BENEFITS REALIZED

**CAPITAL COST SAVINGS**

$200M

**PRODUCTION EFFICIENCY:**

90% INCREASE

- Total collection and treatment system optimization
- Sustainable triple bottom line benefits
- Protect public health and safety
- Improve quality of life and community development
- Provide workforce opportunities
What is Waterly?

Operationally Aligned Data Management
...for operators that hate technology
Mukwonago Information
Population ~ 8,000
Average Flow ~750 kGal/day
1 WWTP
5 Wells
4 Lift Stations

Mukwonago, WI
Mukwonago’s Smart Water Journey

De-risking the first step
Mukwonago's Story

Waterly

Burn the Clipboard 🔥