Putting New Technology to Work for You

David Totman, Industry Manager – Global Water Practice
Christa Campbell, Industry Specialist – Global Water Practice
Andrew Hargreaves, Solutions Engineer – Global Water Practice
Putting New Technology to Work for You

*aka, David wants a digital twin…*

- **David Totman**, General Manager of Mercator Water
- **Christa Campbell**, Geographic Information Officer
- **Andrew Hargreaves**, Strategic Business Analyst
Utility Board Meeting

Tuesday, October 10, 2017 09:00 AM  Esri Auditorium

AGENDA ITEMS:

1. **7% Water Rate Increase**
My challenges…

• Failing infrastructure.
• Tap fees have been down ever since the housing crisis, our rates barely cover our operating expenses let alone enough funding for capital improvement projects.
• At risk water supply.
• Replacing a retiring workforce.
• We already have disinfection byproducts due to stagnant water, and now we may be getting new regulations on pharmaceuticals and personal care products.
• Energy costs for pumping are going up.
• We have hackers and cyber-security attacks.
• Lack of general public appreciation for the value of water, no line of sight from the watershed to the faucet.
ArcGIS

An Integrated Web GIS Platform

Providing mapping, analysis, data management, and collaboration
The Power of Geography
ArcGIS Connects People, Processes, and Data

Improving Efficiency, Collaboration and Communication

System of Record
Supports Multiple Types of Systems

System of Engagement

System of Insight
ArcGIS enables every employee and contractor to easily discover, use, make, and share maps from any device, anywhere, anytime.
Introducing The Utility Network
The Utility Network

- Esri’s new method to model Network Data
- Services based architecture provides the ability to *model, edit,* and *analyze* complex networks across the *entire* Esri platform
- Rules enforce modeling concepts to better support *true* representations of assets in greater detail allowing for greater analysis
- Easy exchange of network information with other mission critical systems like Hydraulic Modelling
- Simplified data models provides increased performance and a highly responsive editing and analysis environment
System of Record:

Editing the Utility Network
System of Record:

Containment & Association
System of Insight:

Tracing the Utility Network
Tracing uses network data to answers questions and solves problems about the current state of the network:
- Emergencies: What valves need to be closed to isolate flow to this location?
- Future design: Can the existing equipment handle more capacity at this point?
- Workflows: Crews need different answers depending upon Hydrant Flushing vs Valve Exercising?
Tracing the utility network

- Core Trace Types:
  - Connected
  - Subnetwork
  - Subnetwork Controllers
  - Upstream
  - Downstream
  - Loops
Tracing the utility network

• *Could* have taken a more traditional approach, eg:
  - Provide workflow specific utility traces in the first release
  - Slowly add to that list over time
  - Requires customers/partners to write their own for unique circumstances
System of Engagement:

Network Diagrams