Building a Real-time Situation Awareness Map

Improving EPCOR Water Canada's System Reliability

Using Performance Indicators

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EPCOR Organization Overview

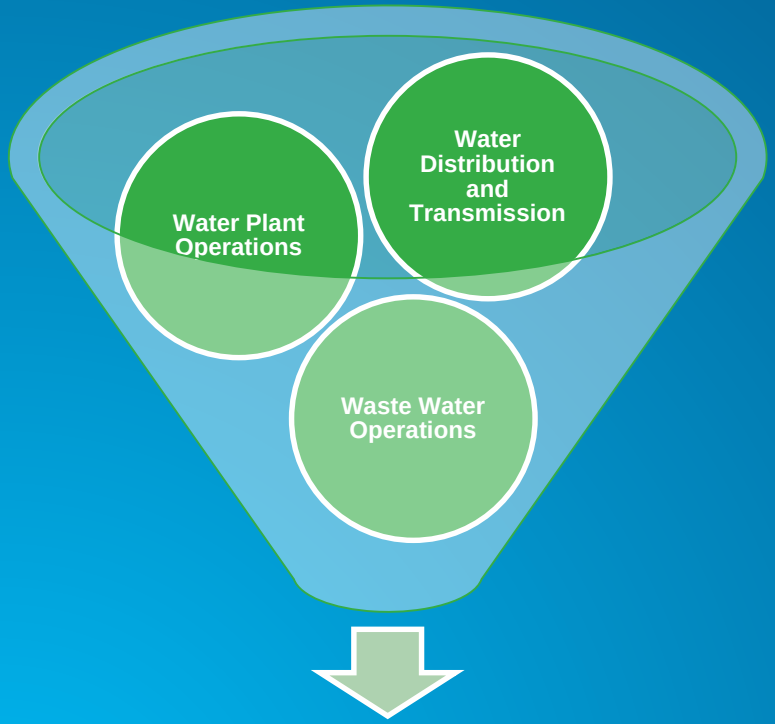
What is Situational Awareness for a Water Utility

Understanding your system

Knowing what is going on so that we can figure out what to do

Responding to events and changes in environmental conditions

EPCOR Water's State of Readiness



- Each business unit has a specific mandate
- One EPCOR and One State of Readiness
- State of readiness informs our ability to:
  - to perform our day to day function
  - Respond to emergencies
  - Provide support to external entities

Important Performance Indicators

- **EPCOR Water Canada operates according to Performance Based Regulations (PBR) found in the City of Edmonton Bylaw.**

System Reliability

Water Quality

Environment

Safety

System Reliability Factors Simplified

- Main Break Duration
- Water Main Break
- Response Time
- Water Quality
- Water Pressure
- Planned Interruption

- Main break identification, confirmation, assessment and repair
- Water quality reporting, sampling and resolution
- Project selection and implementation
- Adequate customer notification
- Managing Hazardous Energy Isolation (closed valves)
- Transmission main shut down
- Plant shut down

Solution - Dependencies

Required a browser-based tool:

- Ease of use, access, and in application development

Collaboratively identify top 10 critical indicators

Identify data sources and define data update frequency

Solution - Data

Outages

- Water main breaks
- Hydrants out of service
- Planned shutdowns
- Projects under construction

Water Quality

- Pressure monitoring stations
- Pressure zones
- Water quality complaints

Customers

- Critical and top 50 customers

EPCOR Assets

- Water mains, valves and hydrants
- EPCOR locations

Solution - Architecture

GIS

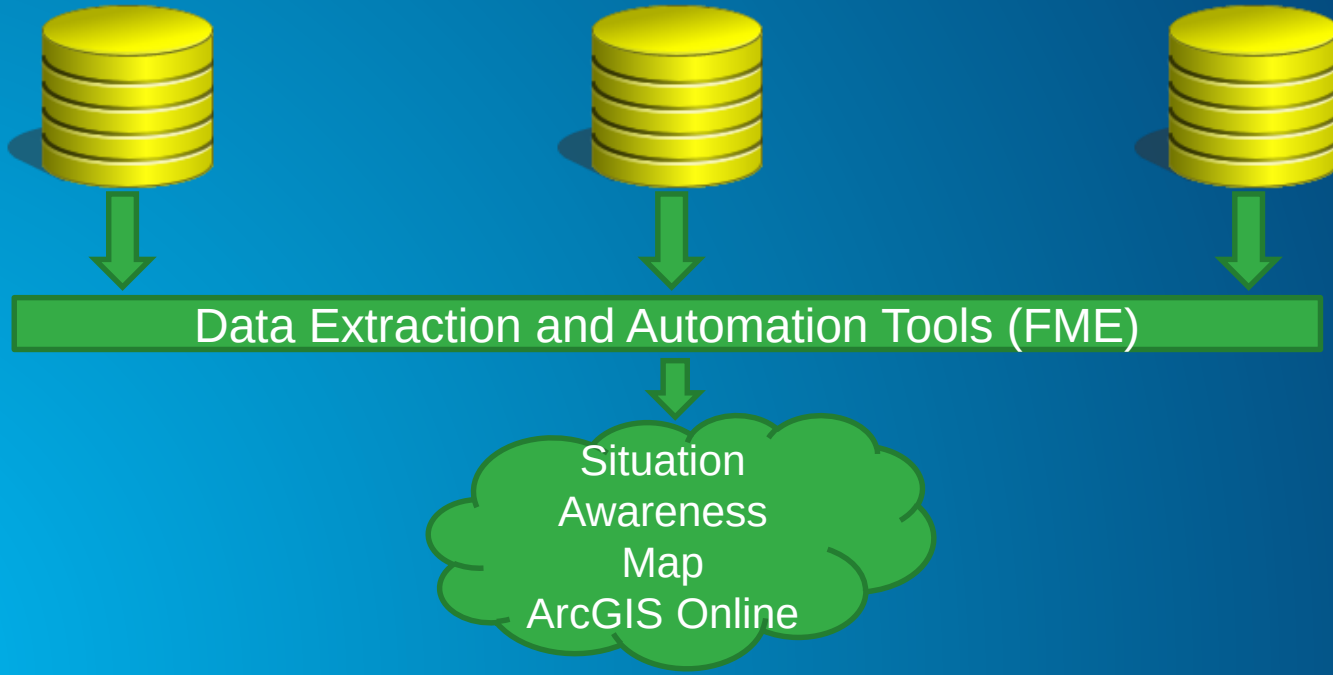
Geographic Information System

IVARA

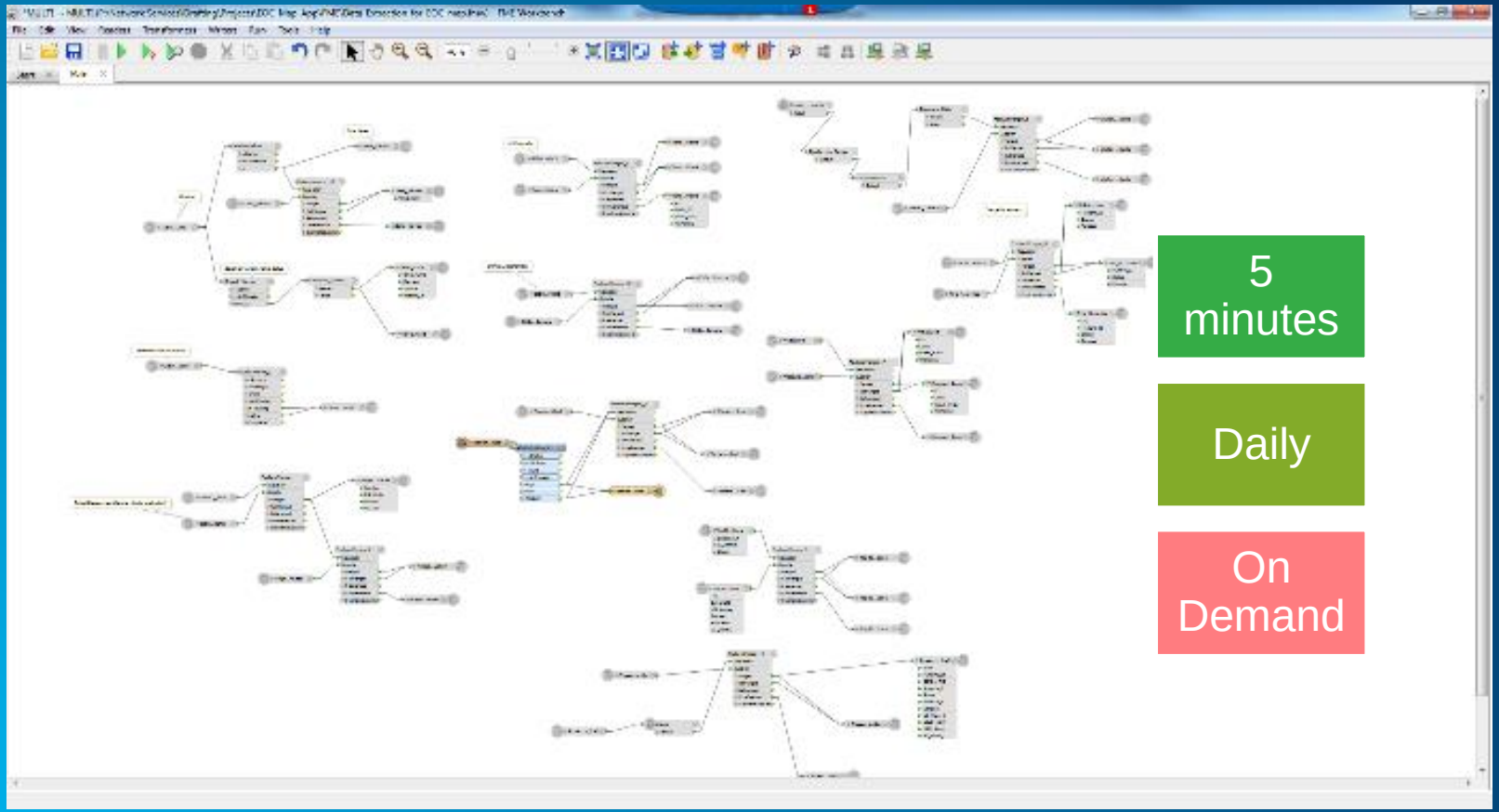
Asset Performance Management System

SCADA

Supervisory control and data acquisition



Solution – Data Extraction and Automation



5 minutes

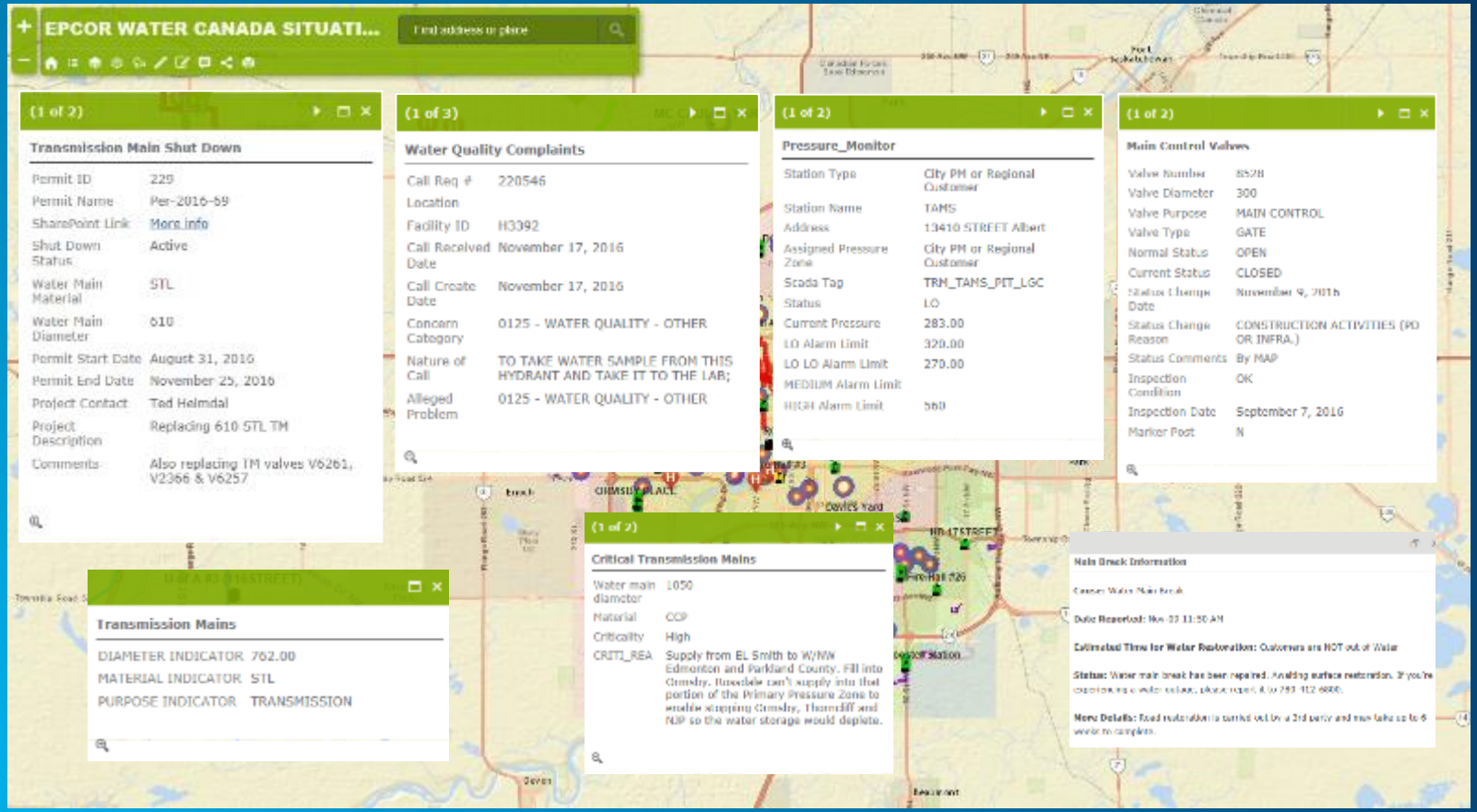
Daily

On Demand

FME Workbench View

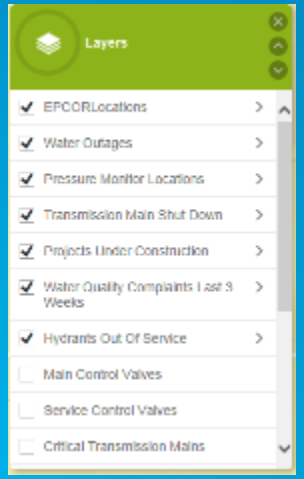
Solution - Interface

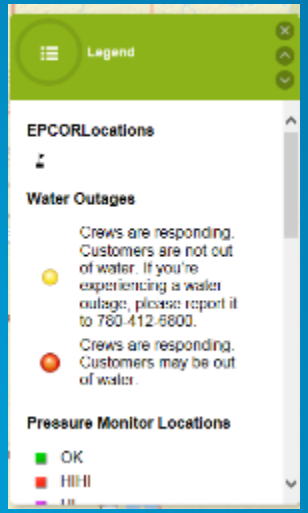
- **Browser based web mapping application built on ArcGIS Online**

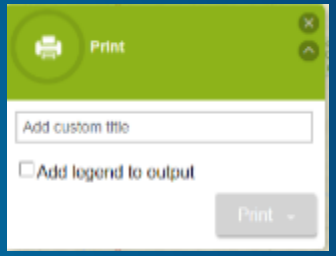


Solution - Interface

Layer Control	Legend	Edit	Print
Manages layer visibility	Aligns to layer presence and visibility	Allows users to create data to support EOC operations	Allows users to print quality maps on demand







ArcGIS Online

Benefits

- Improved ability to communicate situational awareness for our operations
- A dependable, predictable resource in place to support the emergency operation centers (EOC)
- A tool that is woven into how we do our work
- The SAM synergizes our data and synchronizes our work flow processes

User Stories

- User Stories

Thank you

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esri Canada