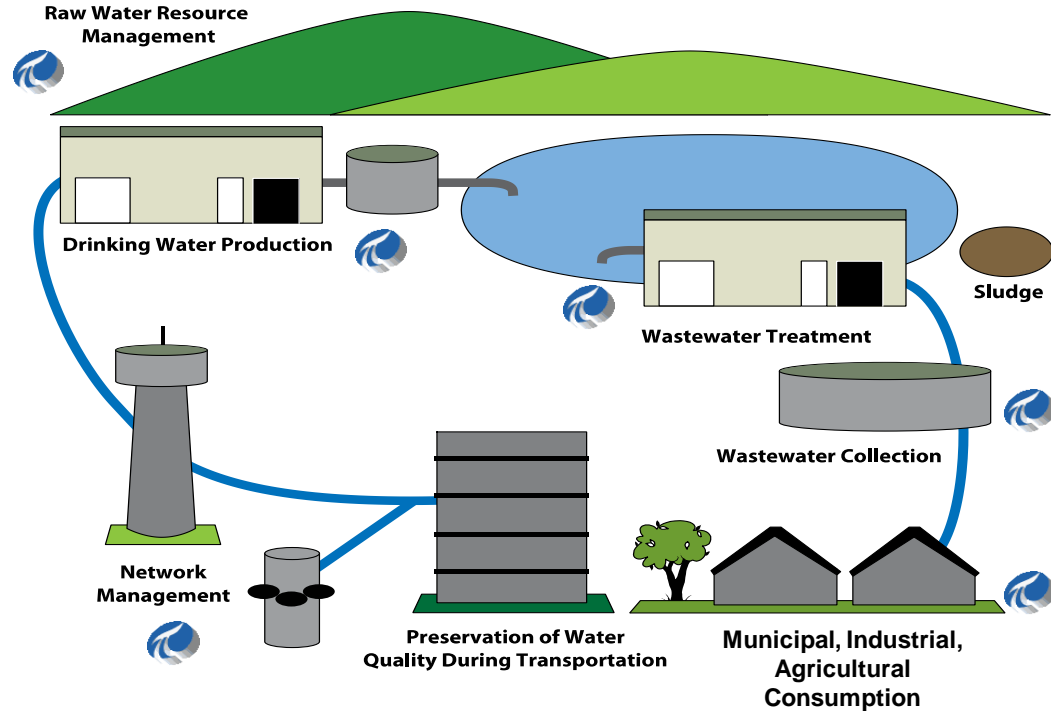


# Global Water Industry Business Value

Presented by **Gary Wong ~ Principal, Global Water Industry,**  
**OSIsoft**

# Integrated Smart Water Management



COLLECT



HISTORIZE



FIND



ANALYZE

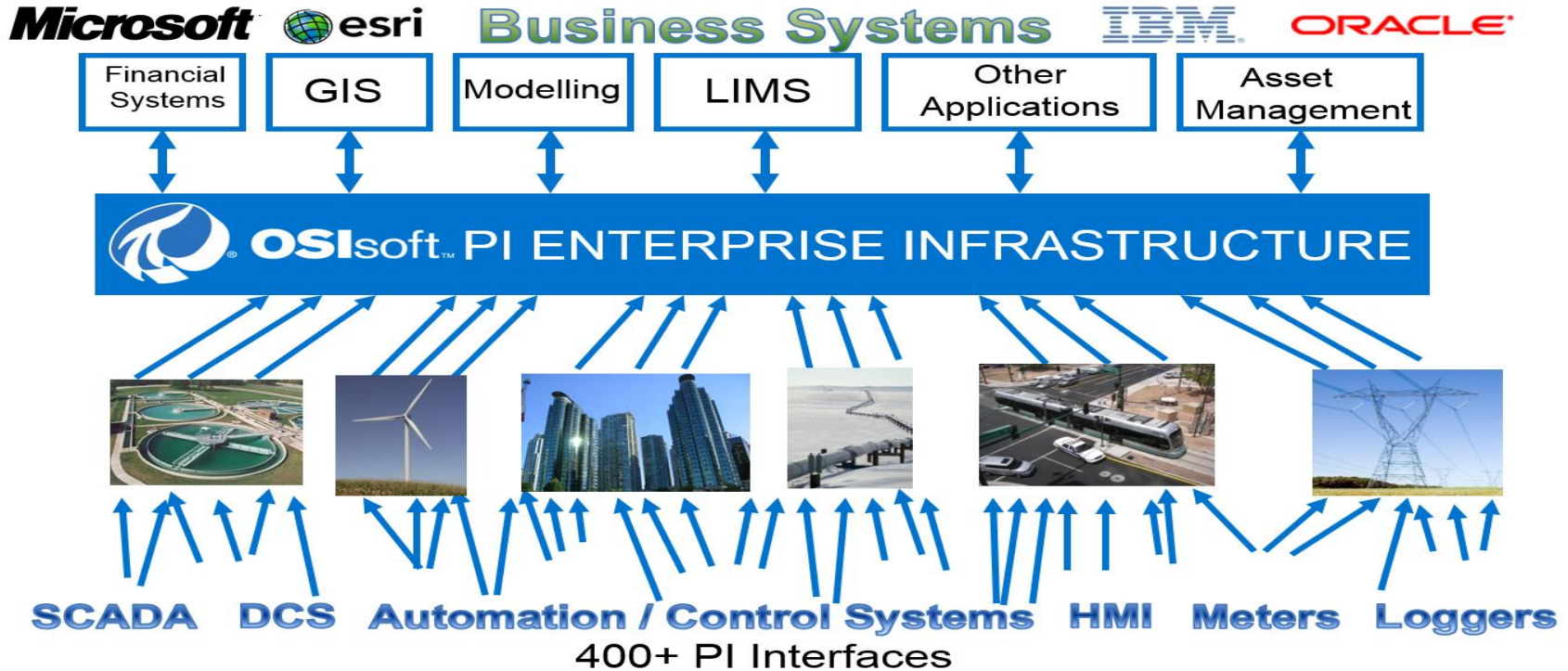


DELIVER



VISUALIZE

# Once Source of the Truth Common Infrastructure



# Customer Successes

## About DWSD

### Drinking Water

- ✓ 1,079 square miles
- ✓ Detroit and 127 suburban communities
- ✓ 40% of Michigan's population
- ✓ 610 MGD produced



### Waste Water

- ✓ 710MGD of water treated
- ✓ 946 square miles
- ✓ +3000 miles of sewer lines

- ✓ +3000 miles of sewer lines
- ✓ 946 square miles
- ✓ 710MGD of water treated

## Ilfat Maatouk, Betty Thomas Detroit Water & Sewerage

### Operational Intelligence in your Water Supply

- Reaching \$500,000 in savings last 3 years
- Automated reporting providing quicker insight
- Real-time dashboards for better decision making

DWSD\CSO Outfall B054-W.WARREN & ROUGE RIVER Notifications[CSO flag] generated a new notification event.

From: sharepoint@dwssd.org

To: Ifat Maatouk

Name: CSO flag

Server: 000000

Databa

Start Time: 5/2/2014 7:50:26 AM Eastern Daylight Time (GMT-04:00:00)

Trigger Time: 5/2/2014 7:50:26 AM Eastern Daylight Time (GMT-04:00:00)

Target: DWSD CSO Outfall B054-W.WARREN & ROUGE RIVER

State: OutsideControl

Priority: Normal

Actions:

Acknowledge

Acknowledge With Comment

Data was not available for attribute 'LEVEL+ OFFSET'.

# Monitoring Flows: Notifications & Event Frames

1	DWF SM SE-S-1 20150214 09:13:00	7667.9 Minutes	2/14/2015 9:1...	2/19/2015 5:0...		DWF
2	DWF SM SE-S-1 20150219 17:00:57	16714.2 Minutes	2/19/2015 5:0...	3/3/2015 7:35...		DWF
3	DWF SM SE-S-1 20150303 20:25:03	1804.9 Minutes	3/3/2015 8:25...	3/5/2015 2:29...		DWF
4	DWF SM SE-S-1 20150305 10:05:00	1822.5 Minutes	3/5/2015 10:0...	3/6/2015 4:27...		DWF
5	OUTFALLBASIN20150129-001	67842.7 Minutes	1/29/2015 9:5...			OUTFALLBASIN
6	SE-S-1 STAGNANT 20150214 17:10:32	1311.8 Minutes	2/14/2015 5:1...	2/15/2015 3:0...		SM STAGNANT
7	SE-S-1 STAGNANT 20150215 17:17:36	2666.2 Minutes	2/15/2015 5:1...	2/17/2015 1:4...		SM STAGNANT
8	SE-S-1 STAGNANT 20150217 14:26:25	1084.2 Minutes	2/17/2015 2:2...	2/18/2015 8:3...	Event frame w...	SM STAGNANT
9	SE-S-1 STAGNANT 20150218 08:30:29	6150.8 Minutes	2/18/2015 8:3...	2/22/2015 3:0...		SM STAGNANT
10	SE-S-1 STAGNANT 20150222 17:18:59	2362.1 Minutes	2/22/2015 5:1...	2/24/2015 8:4...	Event frame w...	SM STAGNANT
11	SE-S-1 STAGNANT 20150224 08:40:56	30475.8 Minutes	2/24/2015 8:4...			SM STAGNANT
12	SE-S-1 STAGNANT 20150224 08:45:06	2881.2 Minutes	2/24/2015 8:4...	2/26/2015 8:4...	Event frame w...	SM STAGNANT
13	SE-S-1 STAGNANT 20150226 08:46:06	27590.6 Minutes	2/26/2015 8:4...			SM STAGNANT
14	SE-S-1 STAGNANT 20150226 08:54:26	245.7 Minutes	2/26/2015 8:5...	2/26/2015 1:0...		SM STAGNANT
15	SE-S-1 STAGNANT 20150226 13:58:48	2922.7 Minutes	2/26/2015 1:5...	2/28/2015 2:4...		SM STAGNANT
16	SE-S-1 STAGNANT 20150228 17:02:08	1322.4 Minutes	2/28/2015 5:0...	3/1/2015 3:04...		SM STAGNANT

# Event Frames

	A	B	C	D	E	F	G	H
1	Event name	Start time	End time	Duration	FLOWRATE	FLOWRAT	LEVEL +OFF	RIVER LEVEL
2	B054 20140811 12:21:12	11-Aug-14 12:21:12	11-Aug-14 14:07:51	0 1:46:39	7.18	0.34	105.50	103.94
3	B054 20140811 14:34:31	11-Aug-14 14:34:31	11-Aug-14 15:17:52	0 0:43:21	9.91	0.19	105.57	104.75

## Explore Events

Search start

8/11/2014

Search end

8/12/2014

☐ Limit to database level

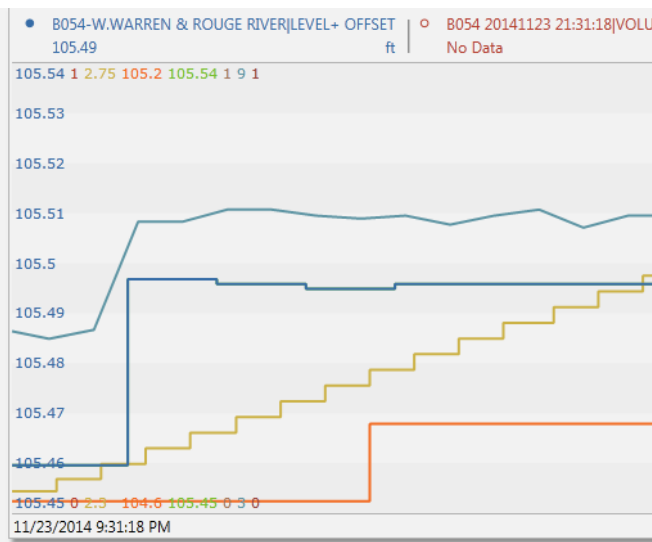
More search options

Preview

Events (2 found)

- B054 20140811 12:21:12
- B054 20140811 14:34:31

Events
Events from 12/26/2013 6:34 AM - 11/9/2015 7:51
▶ B054 20141123 21:31:18 11/23/2014 9:31:18 PM - 11/24/2014 12:01:11
▶ B054 20141014 21:18:57 10/14/2014 9:18:57 PM - 10/14/2014 9:33:38
▶ B054 20141014 17:58:05 10/14/2014 5:58:05 PM - 10/14/2014 8:08:28
▶ B054 20141013 05:10:50 10/13/2014 5:10:50 AM - 10/13/2014 6:01:00
▶ B054 20140930 02:55:01 9/30/2014 2:55:01 AM - 9/30/2014 3:28:08 AM
▶ B054 20140920 20:28:44 9/20/2014 8:28:44 PM - 9/20/2014 9:34:12 PM
▶ B054 20140920 20:08:42 9/20/2014 8:08:42 PM - 9/20/2014 8:18:42 PM
▶ B054 20140910 14:57:05 9/10/2014 2:57:05 PM - 9/10/2014 3:11:55 PM
▶ B054 20140910 13:11:35 9/10/2014 1:11:35 PM - 9/10/2014 2:47:05 PM

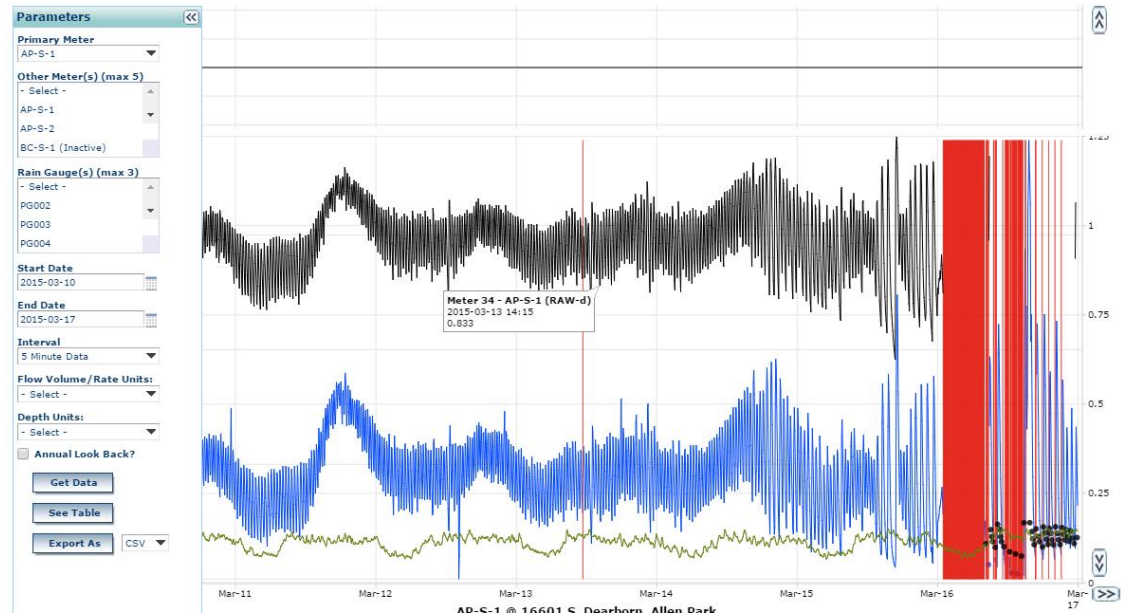




# Sewer Meter Billing

Analyses  
Event Frames  
PI SMT  
Notifications  
**PI Coresight**  
PI DataLink  
Asset Framework

- Linear Interpolation
- Green line
- Correlations
- Flow calculations
- Notifications
- Replace data
- Peaks

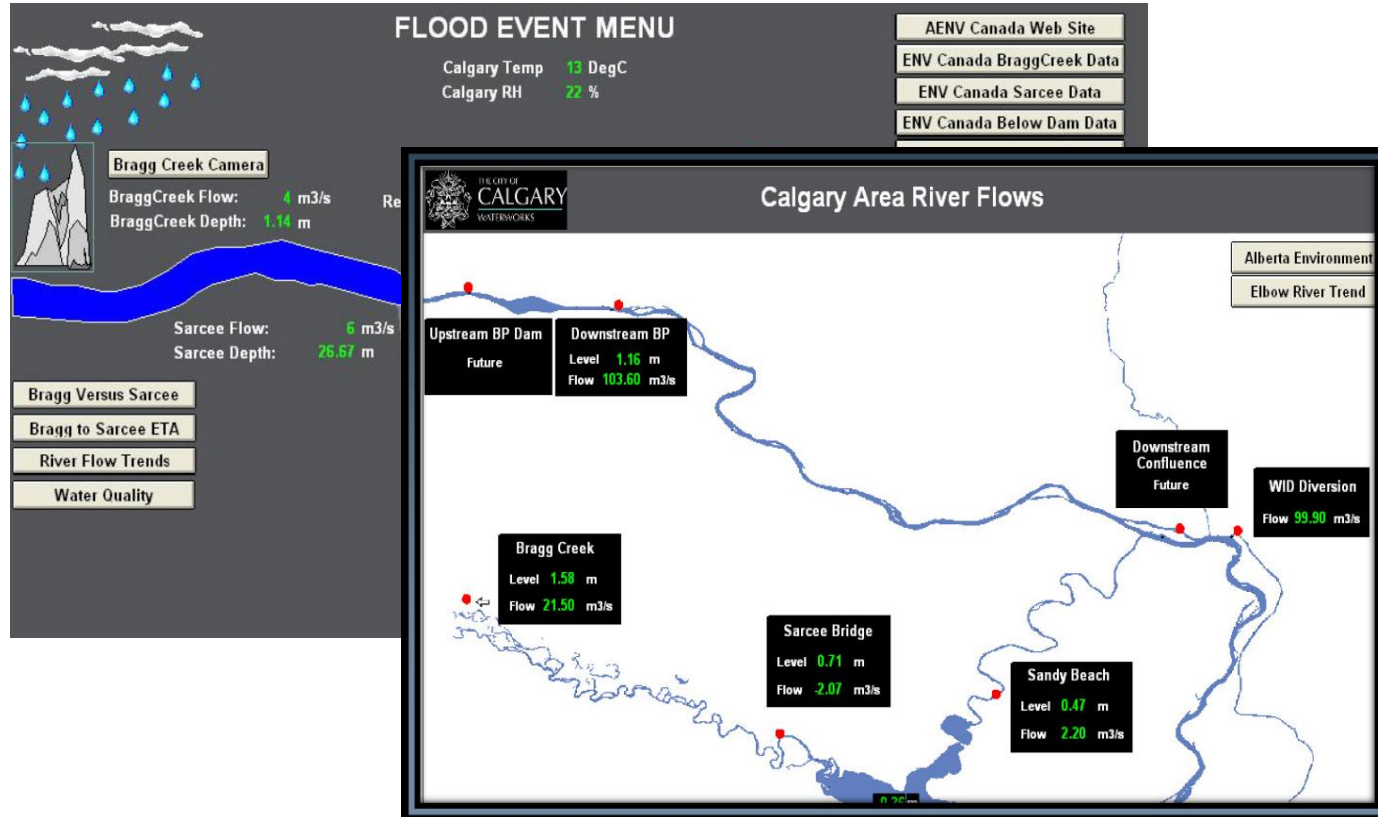




# Financial Solutions

- 2012-2015: **\$500,000**
  - ❖ Automating Reports
  - ❖ Notifications and Event Frames
  - ❖ Using the PI System as a back up
  - ❖ Replacing costly software with the PI system
- Savings and Improvements expected in the next 5 years: **\$2,000,000**
  - ❖ Monitoring Real time data
  - ❖ Energy consumption tracking
  - ❖ Increasing pump efficiency
  - ❖ Predictive data

# Calgary's Emergency Operations

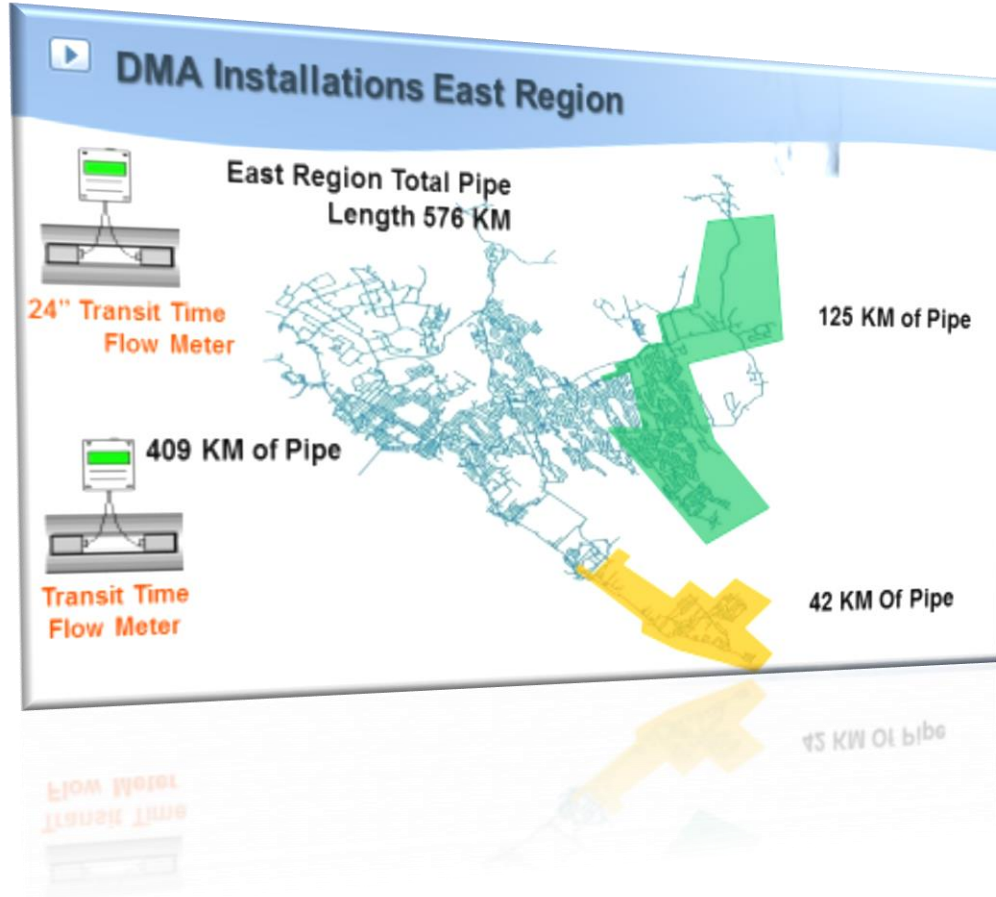


# HALIFAX WATER LEAKAGE REDUCTION

**Carl Yates – General Manager  
Halifax Water**

Real-time Water Loss Control

- Serving 325,000 people
- \$600,000 / year savings



# Reduce Leaks & Non Revenue Water

Water service to 325,000 people.

\$600,000 / yr savings reducing leakage (DMA Night Flows).

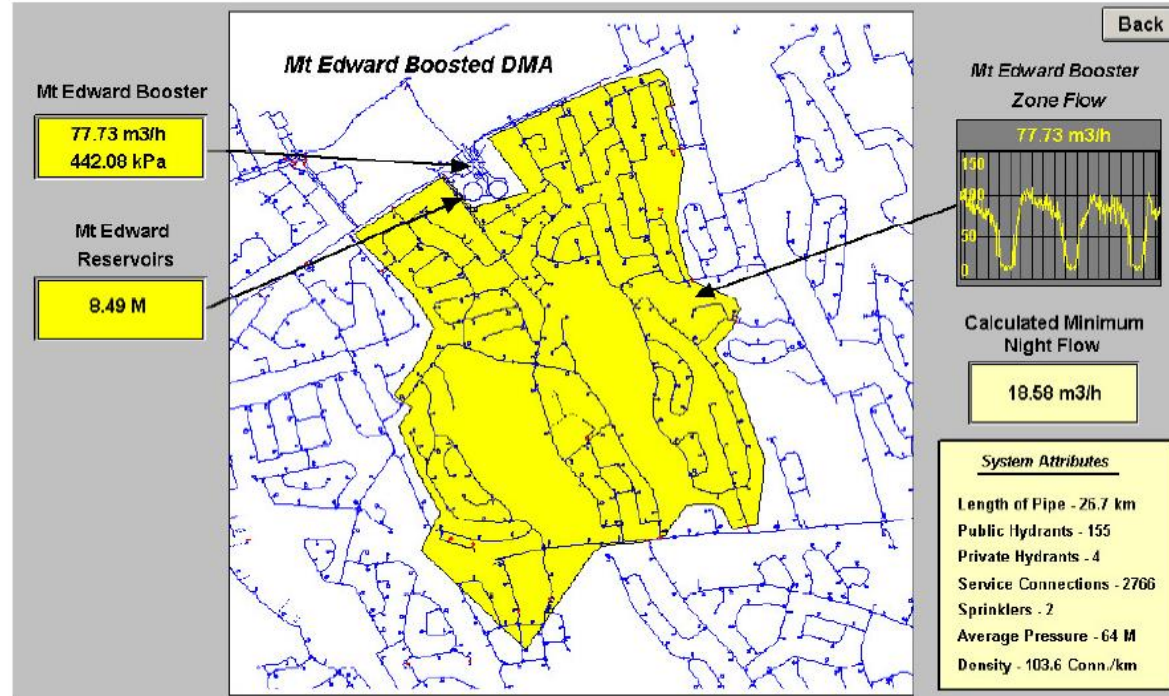
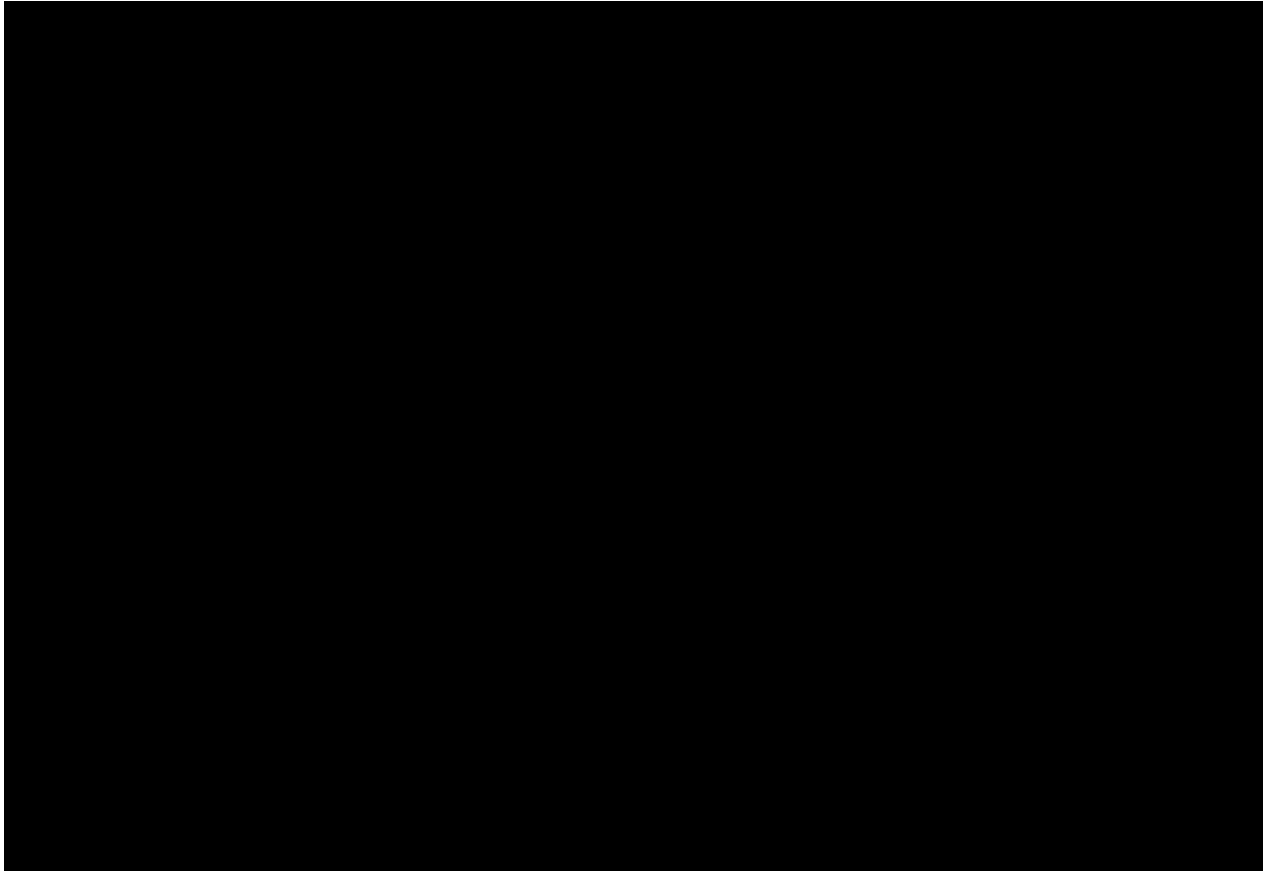


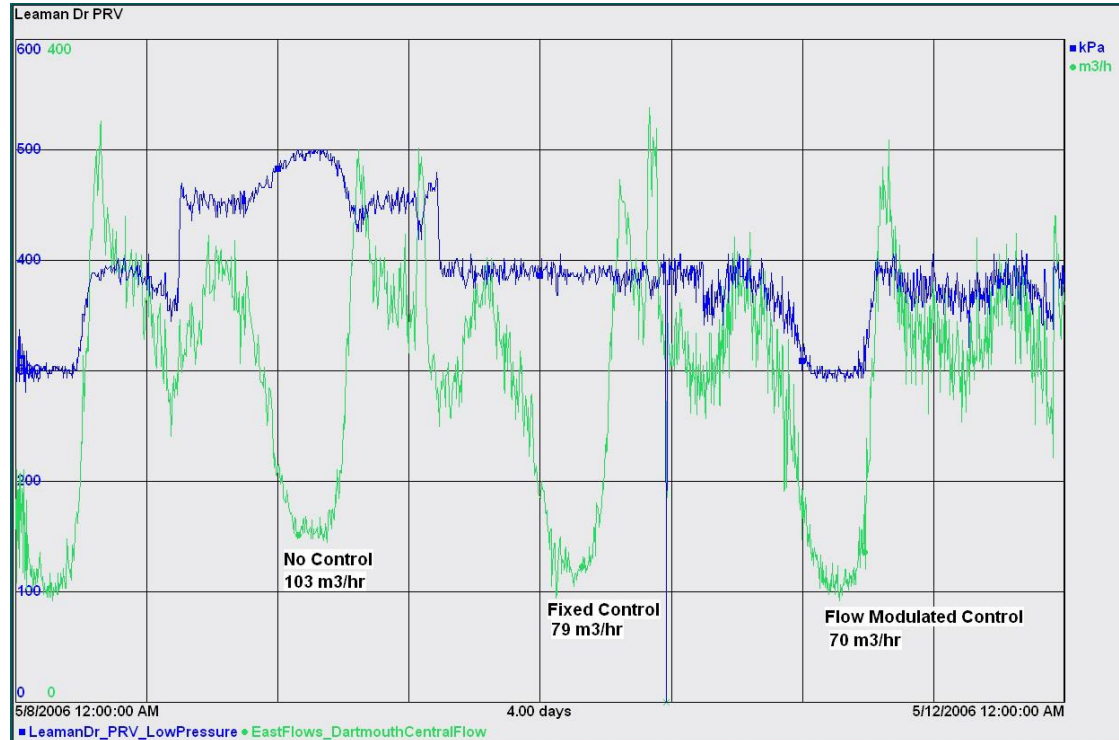
Figure 2.3 Mount Edward DMA, Dartmouth, Nova Scotia

# PI to Esri ArcGIS Demo

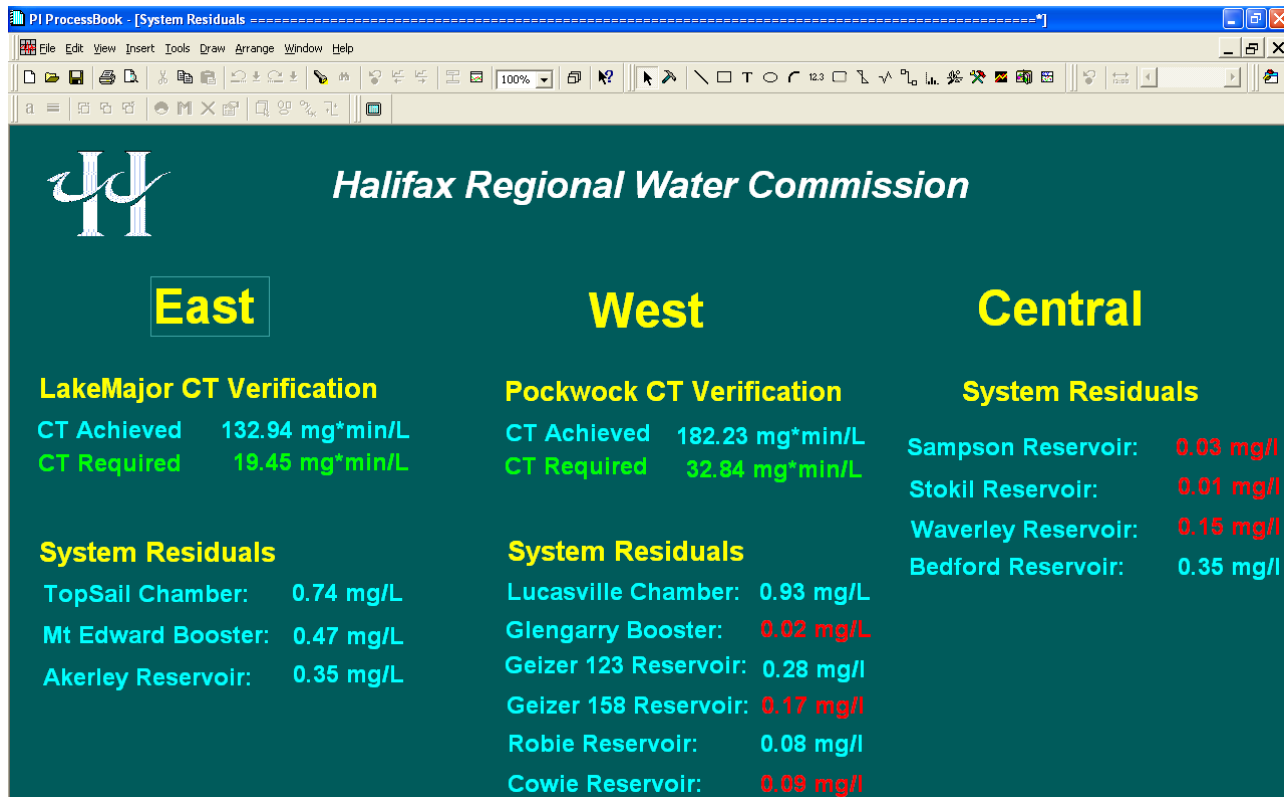


# Reduce Main Breaks: Advanced Pressure Management

Average main breaks dropped from 23 / year to 12 / year (Halifax Water)



# Water Quality – Chlorine Verification



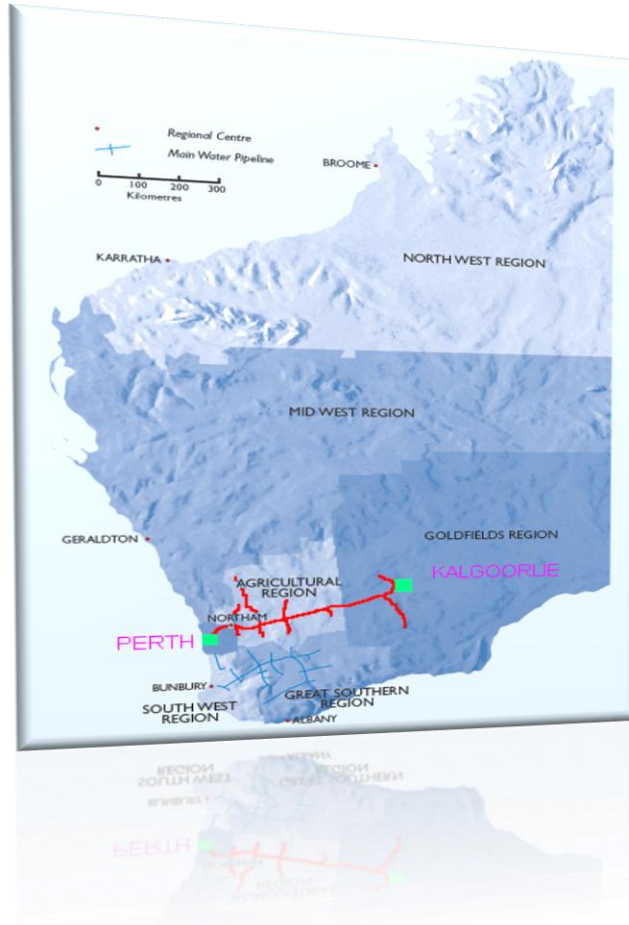


# Water Corporation Transformation

**Ian Scott, Asset Management  
Water Corporation**

By Geography, Western  
Australia is almost 10 times  
larger than the UK

UK has 25 times the population

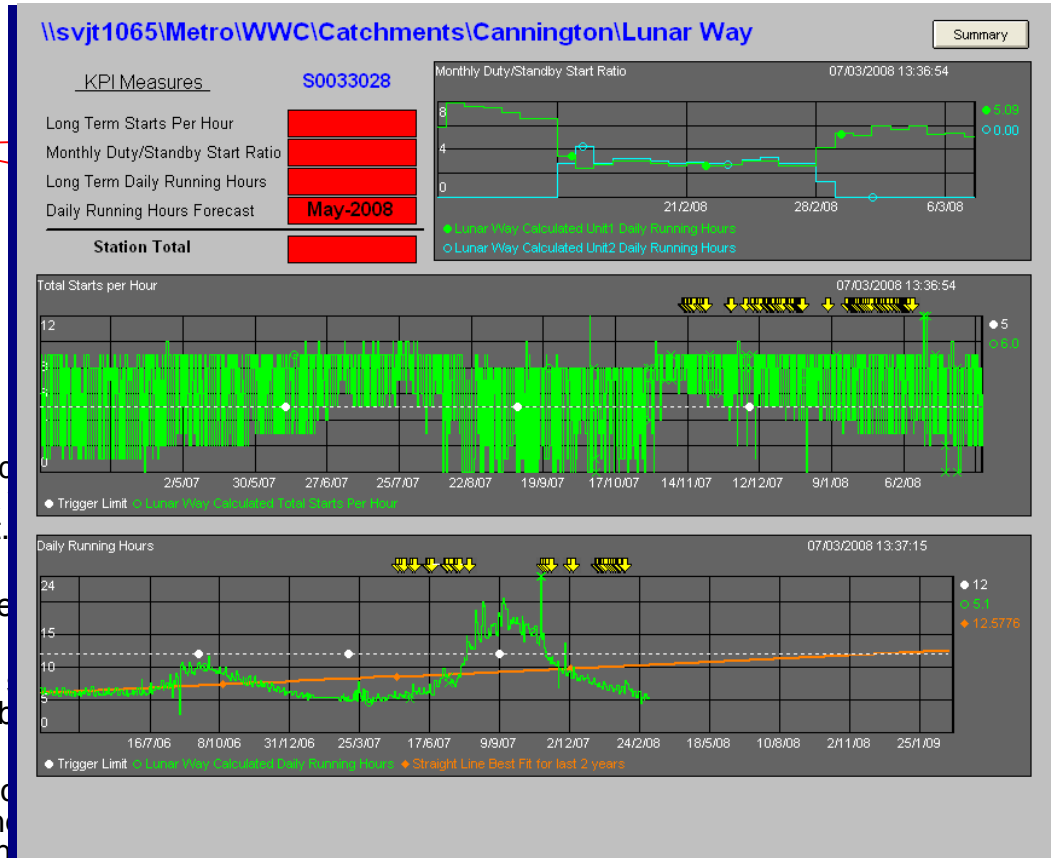


# Wa



# Assets: Pumpstation KPI Forecasting

- Provide quick asset.
- These
- Each "one b
- Predict reach expense



# MAYNILAD WATER: A BEGINNING

**Francisco Castillo – SVP-CIO  
Maynilad Water**

- 540 sq km
- Serving 9M people
- Meter Data Management
- Field MOUS (Monitoring User System)

# Asset Framework Hierarchy

The screenshot displays the PI System Explorer interface, showing the Asset Framework Hierarchy. The left pane lists the hierarchy of assets, including Maynilad, Distribution Gauging Points, and various districts. The right pane shows the details for the 'Bagbag' asset, including a table of attributes and a configuration panel.

**Elements**

- Maynilad
  - Distribution Gauging Points
    - Central A District
    - Central B District
    - North District
    - South District
  - PRV
    - NRW Report Management
    - Pressure Monitoring Points
      - Central B
      - Central A
      - North Caloocan
      - North District
        - Fairview-Commonwealth
        - North Caloocan
          - Quirino-Roosevelt
    - Pump Stations and Inline Boosters
      - ARPS (La Mesa Booster)
        - North A
        - North B
        - North C
      - Pasay
    - Reservoir
      - Algeciras
      - ARPS
      - Ayala-Alabang R1
      - Ayala-Alabang R2
      - Bagbag
      - Binuksuk
      - Caloocan
      - D. Tuazon
      - Ermita
      - Espiritu
      - Novaliches
      - Noveleta
      - Pagcor
      - Pasay
      - Sacred Heart
      - Tondo
    - Treatment Plants
      - La Mesa Treatment Plant 1
      - La Mesa Treatment Plant 2
      - Putatan Treatment Plant
    - Water Sources
      - Dams
      - Angat

**Bagbag**

General | Child Elements | Attributes | Ports | Version

Filter

Name	Value	Unit Of Measure
Floor Elevation	61 m	meter
Level R2	8.50240039825439 m	meter
Stored Volume	155.996741543476 M L	megaliter
Water Elevation at 6:00	69.93 m	<None>
Water Elevation R1	69.7324003982544 m	meter
Water Elevation R2	69.5024003982544 m	meter

Name: Floor Elevation

Description:

Configuration Item: ☒

Categories:

Default UOM: meter

Value Type: Single

Value: 61 m

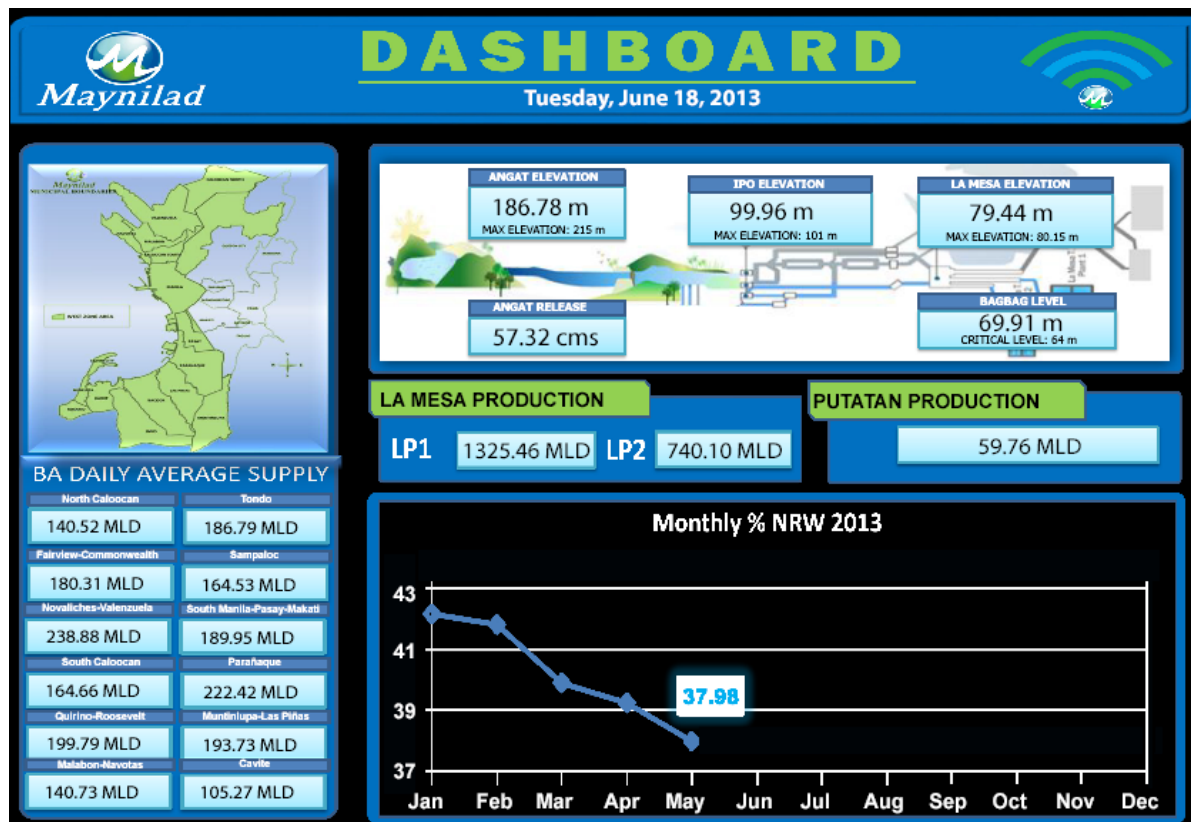
Data Reference: <None>

Settings...

# Benefits Realized (~6 months)

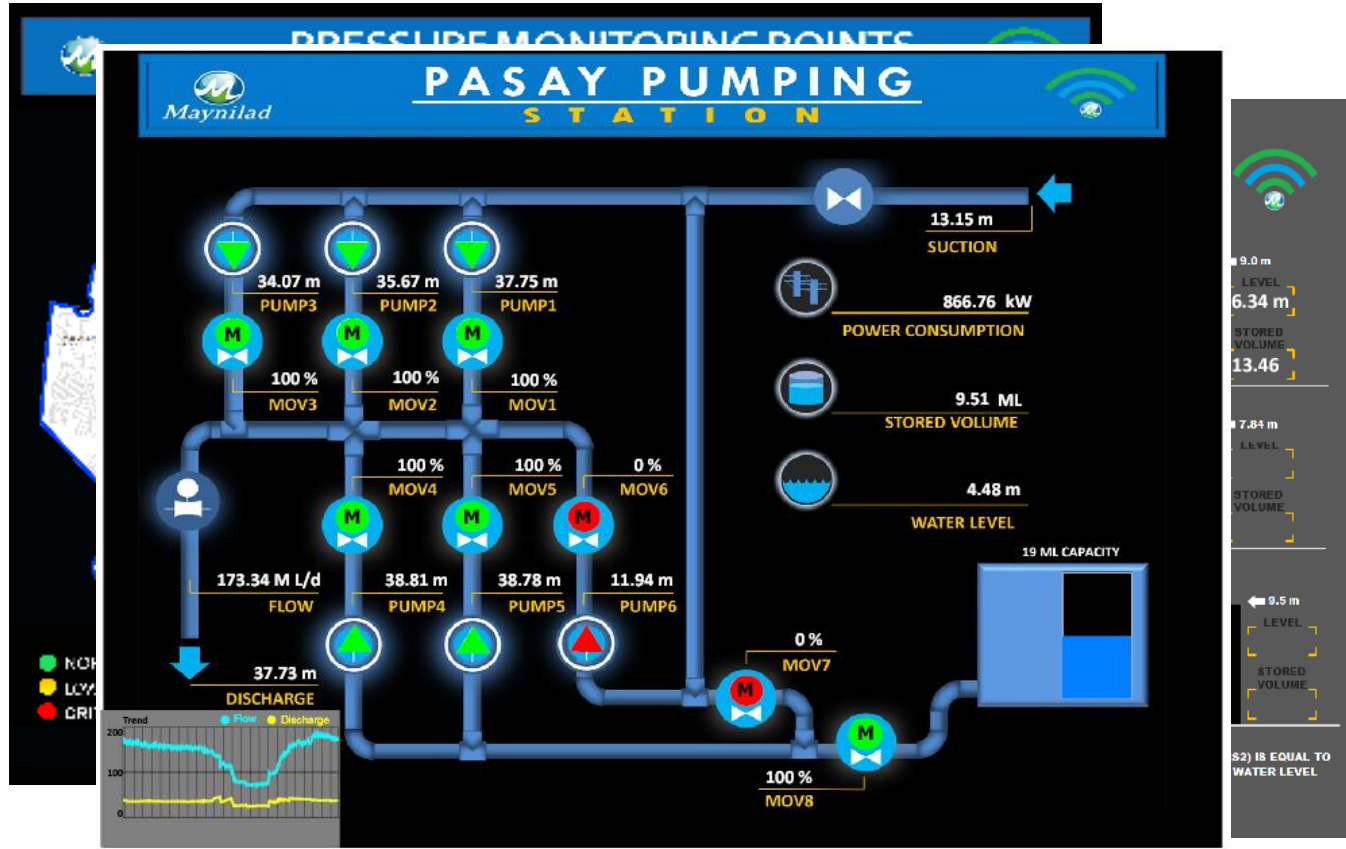
- ✓ Quick response to unusual distribution network changes
- ✓ Better asset condition management
- ✓ Faster assessment on operations efficiency
- ✓ Cost on Operations
  - ✓ Less outsourcing
  - ✓ Reduced downtime
  - ✓ Less manpower
- ✓ Secure, scalable and redundant data management system
- ✓ User friendly

# Dashboard Overview

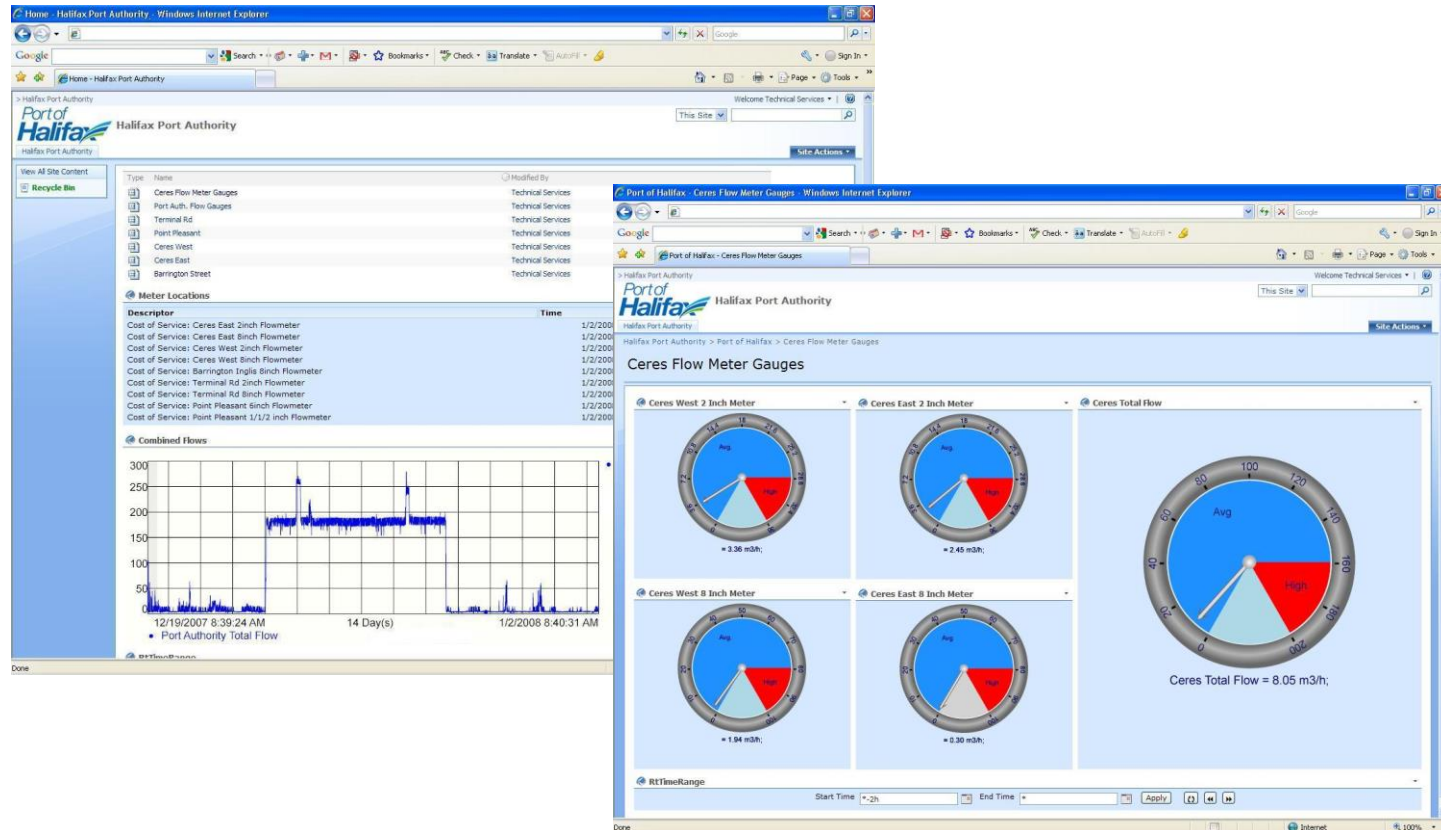




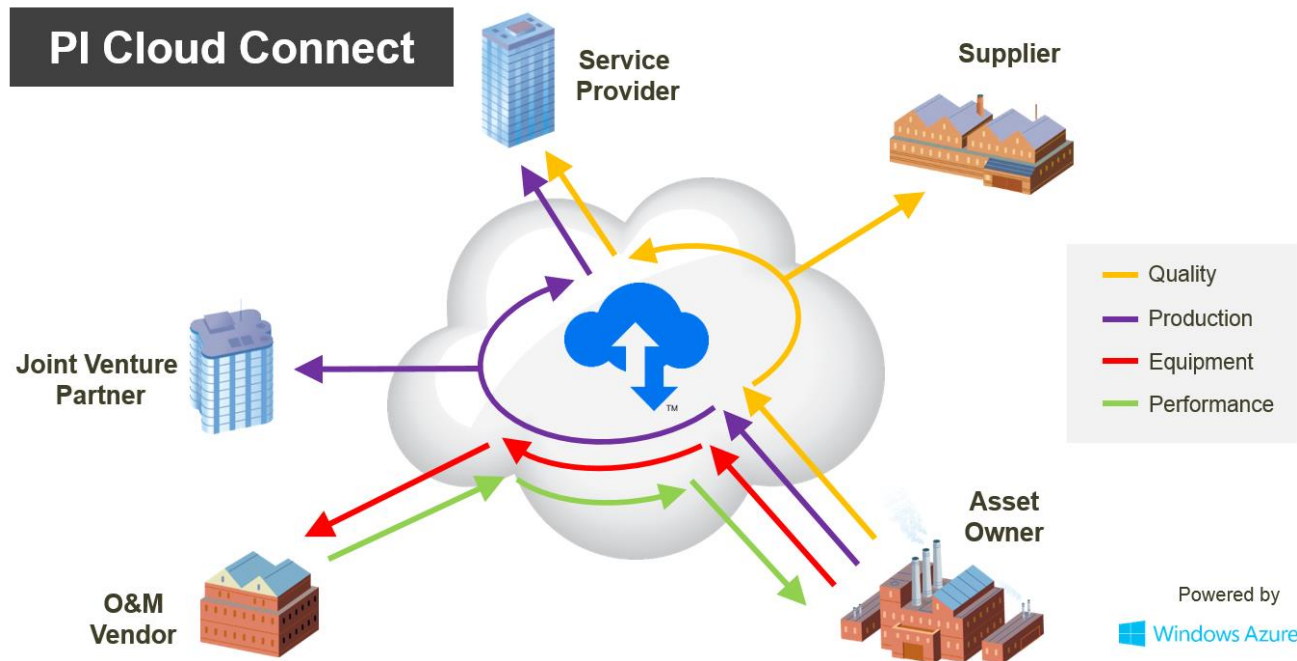
# Pressure Monitoring



# Consumer Transparency



# Connected Services



# Gary Wong

- [gwong@osisoft.com](mailto:gwong@osisoft.com)
- Principal, Global Water Industry
- OSIsoft, LLC