On The Path to Becoming a
To Data Driven Utility

Reid Campbell
Director of Water Services
Halifax Water
Pre-2002

Central Scada

East Scada

West Scada

WTP Scada
Post 2002

- Remote Stations
- Repeater
- Remote Stations
- Surftline(s)
- Gateway
- PI Interface Node(s)
- PDA
- PI Interface Node(s)
- VTS
- WTP PLC(s)
- LAN/WAN
- DH+
- PI Server
- Notification
- PI ProcessBook
- PI DataLink
- PI WebParts
**Leak Awareness....The White Board**

### Central Region Zone Night Flows (m3/h)

<table>
<thead>
<tr>
<th>District Metered Area</th>
<th>Benchmark</th>
<th>14-Jul</th>
<th>13-Jul</th>
<th>12-Jul</th>
<th>11-Jul</th>
<th>10-Jul</th>
<th>Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedford Core</td>
<td>7.1</td>
<td>16.2</td>
<td>10.5</td>
<td>19.0</td>
<td>17.9</td>
<td>18.4</td>
<td>+ 9.1</td>
</tr>
<tr>
<td>Sackville Green</td>
<td>144.0</td>
<td>166.3</td>
<td>170.6</td>
<td>168.2</td>
<td>156.5</td>
<td>155.6</td>
<td>+ 22.3</td>
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<tr>
<td>Sackville Core</td>
<td>37.0</td>
<td>42.8</td>
<td>42.8</td>
<td>42.3</td>
<td>43.3</td>
<td>46.7</td>
<td>+ 5.8</td>
</tr>
<tr>
<td>Blue Mtn</td>
<td>2.7</td>
<td>3.4</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
<td>+ 0.7</td>
</tr>
<tr>
<td><em>Siles</em></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>+ 0.0</td>
</tr>
<tr>
<td>Mowatt</td>
<td>1.3</td>
<td>4.1</td>
<td>3.0</td>
<td>4.2</td>
<td>4.1</td>
<td>3.4</td>
<td>+ 2.8</td>
</tr>
</tbody>
</table>

Information posted automatically to HRWC Intranet

*Note: Benchmarks for each district metered area represent the ideal flow rates for night-time operations.*
Other Applications

Large Customer Monitoring

CT Achieved  138.74 mg*min/L
CT Required  33.40 mg*min/L

CT Calculator
Wet Weather Management Program

Smart Data

FlowWorks
Online Database & RDII Analysis Tools
Data QC
Pre and Post Data Analysis

AMG Live
Real-time data viewer for 77 flow monitoring sites

WWAC Data Viewer
Web based ESRI’s ArcGIS Online application tools
Developed and maintained by HW staff
Cross-departmental data sharing
Real-time mobile application

PI Software
Real-time data collection from various assets (pump stations, wet wells, etc)
Overflow monitoring
Operations Support

• Rapid access to multiple data sources in real time has become a prime resource for:
  • Leak detection.
  • Maintenance planning.
  • Emergency
2012: Taking Water Loss Control to the Next Level

• 60% of water main breaks happen overnight.
  – Implications:
    • Pressure goes up at night.
    • We control pressure.
    • We can prevent water main breaks.
Using Sensors and Data to Improve Operations

Pressure spikes in the distribution system captured on SCADA as reservoir altitude valve closes too quickly.

Main failure correlates to pressure spikes.
Advanced Metering Infrastructure

• 50% through AMI implementation.
• Not about meter reading
• From 4 data points to 8,760 data points per year for most customers.
• Its about data and customer service. Use AMI data:
  – for hydraulic modelling
  – to support minimum night flow analysis.
  – to resolve bill disputes
  – to avoid high bills due to leaks.
  – to let customers manage their own consumption.
  – for rate setting.
IT Strategic Plan.
Questions or Comments?

Reid.Campbell@halifaxwater.ca