Building a Smarter Planet:
Innovation in Smarter Water Management

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The Traditional Water Network: A 19th Century System

"One barrier to better management of water resources is simply lack of data" – *Wired Magazine*

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Technology is Changing the Possibilities

Instrument to Manage

Integrate to Innovate

Optimize to Transform

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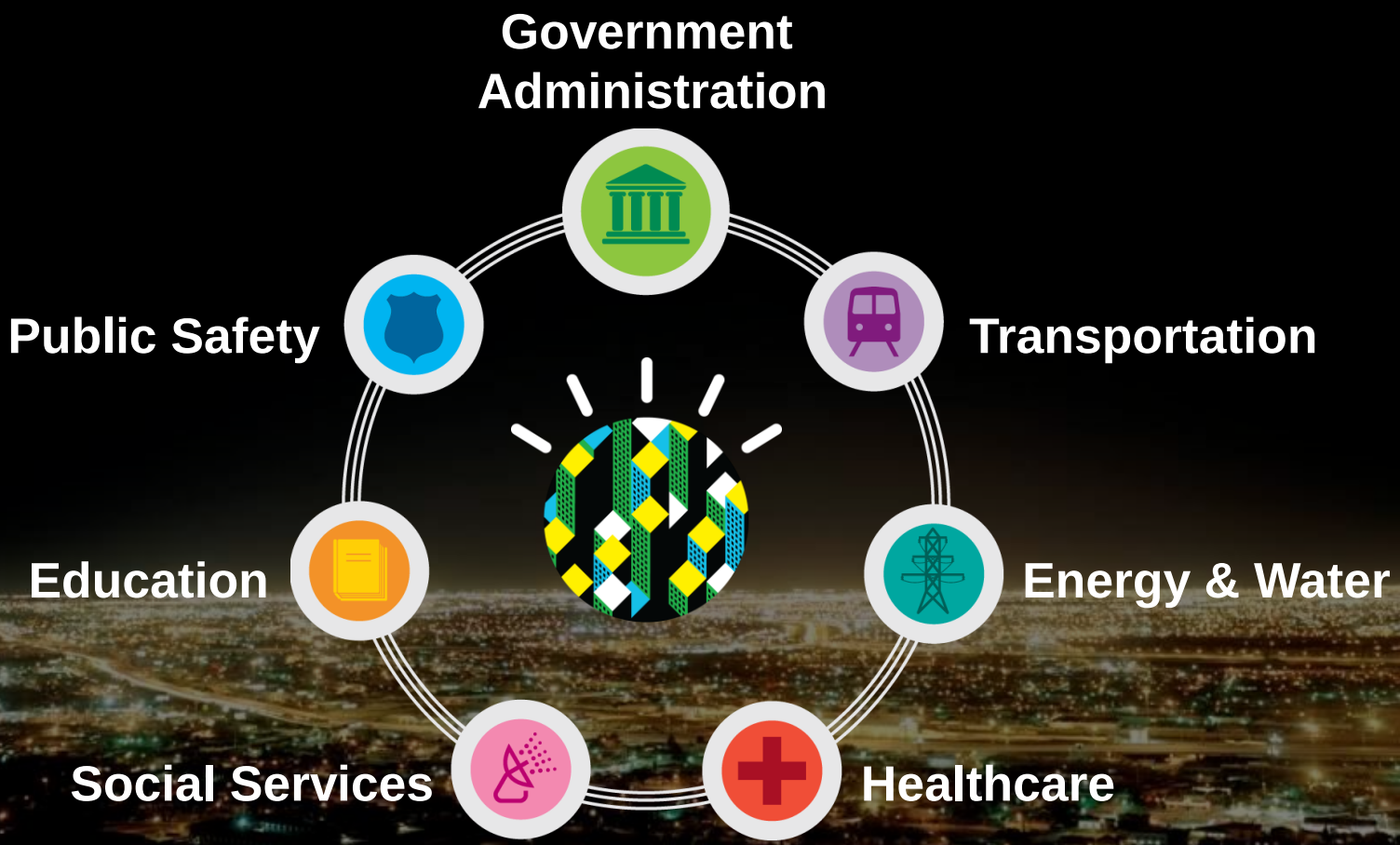
Water Management is critical to building Smarter Cities



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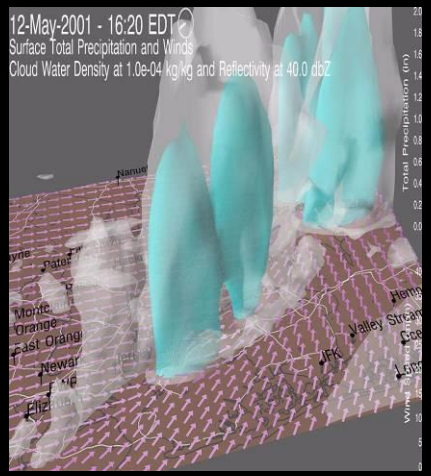
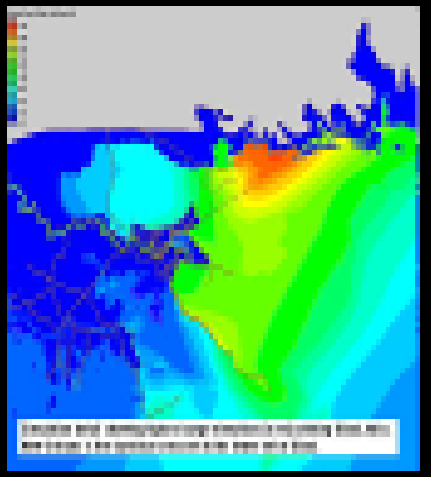
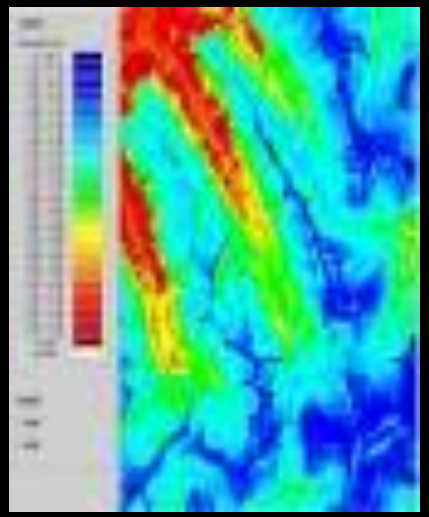
The Smart Water Network: A 21st Century System

- Data from usage, pressure, contaminations
- Analysis for leak detection, valve placement
- Optimization for work scheduling, collaboration







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Improving the entire water ecosystem

Availability:

- Run off systems
- Climate models

Delivery:

- Risk of levee failure
- Leak detection

Consumption:

- Precision irrigation
- Smart metering

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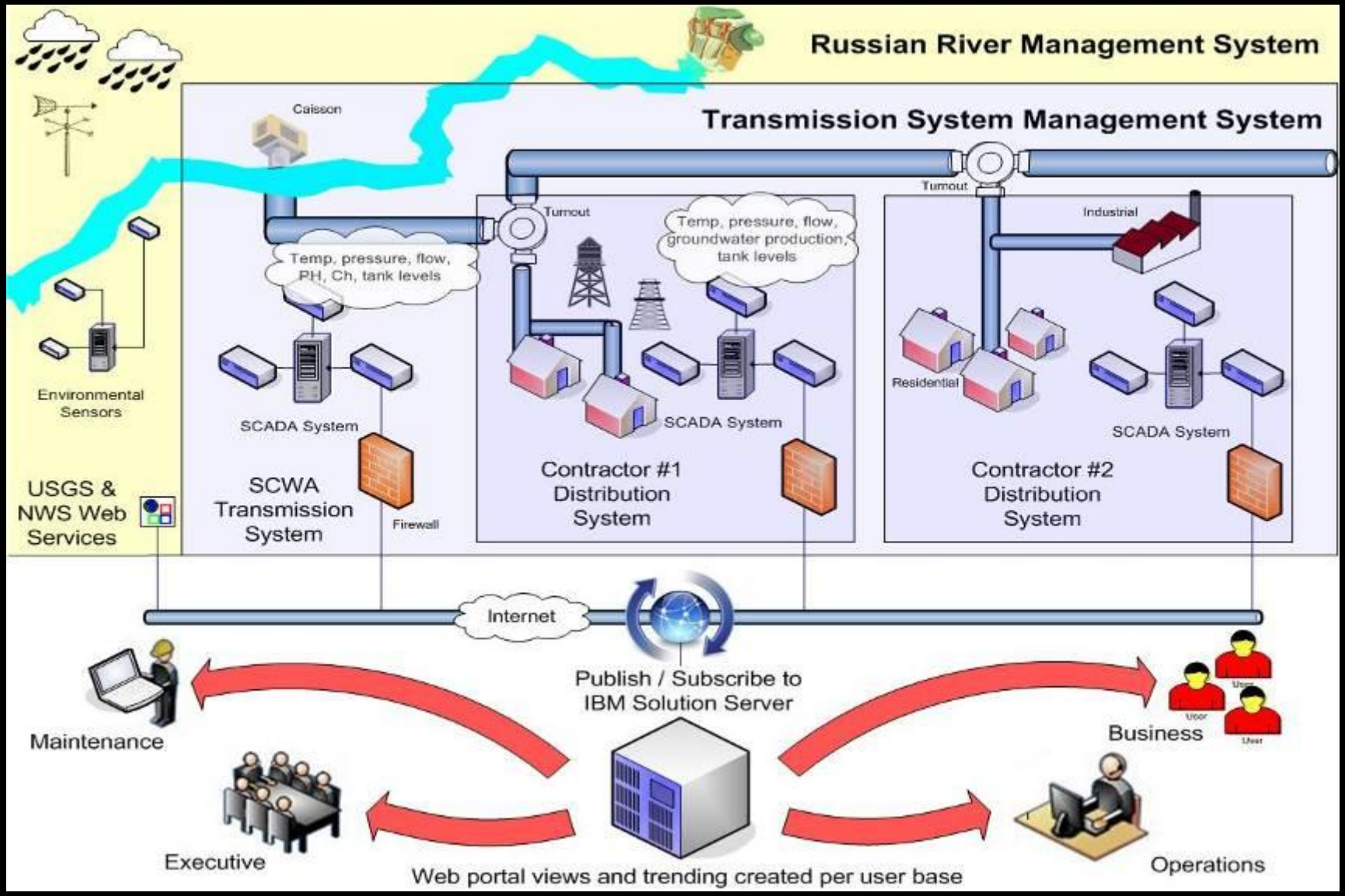
Sonoma County: Collaboration Platform



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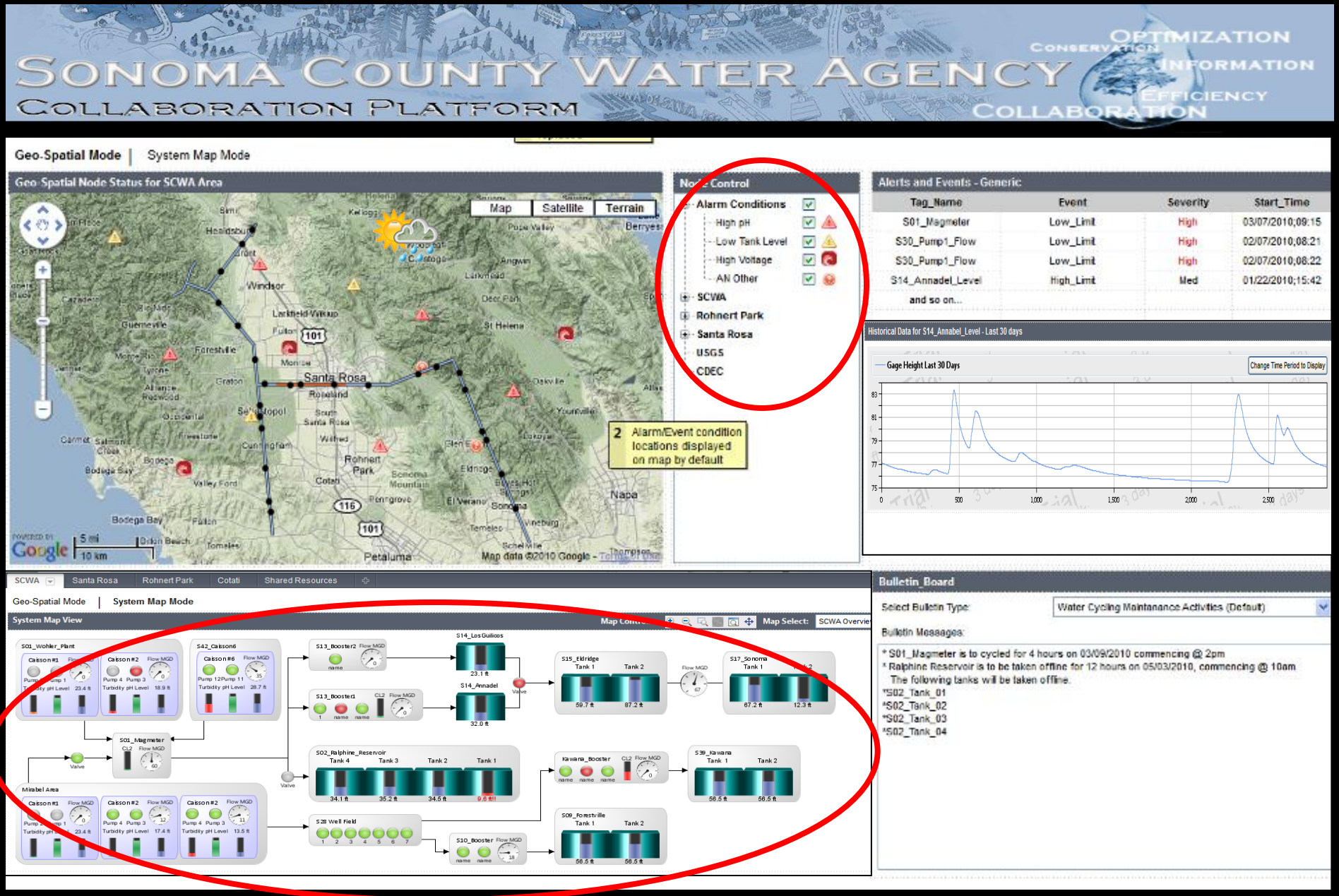

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Dubuque: Sustainable consumption and usage

The IBM Smarter City Sustainability Model
DUBUQUE PREVIEW EDITION

Water | Elect

Sustainability report for the
Wasserman
household

Usage trend
12.51%
reduction

Estimated savings
45
gallons

Green points
176
points

Water usage by day in gallons

MAY 2009 | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | JAN 2010 | FEB | MAR | APRIL | MAY | JUN

147 gal

23
THURSDAY

Hourly breakdown | Weekly usage | This week's game

20 GAL/HR

12 AM 1 2 3 4 5 6 7 8 9 10 11 12 PM 1 2 3 4 5 6 7 8 9 10 11 12 AM

Potential leak: 2 gals/hr
First detected: 5/19/2010

To report, click here or call the water department at 589-4291.

Information, predictive models, behavior-based incentives

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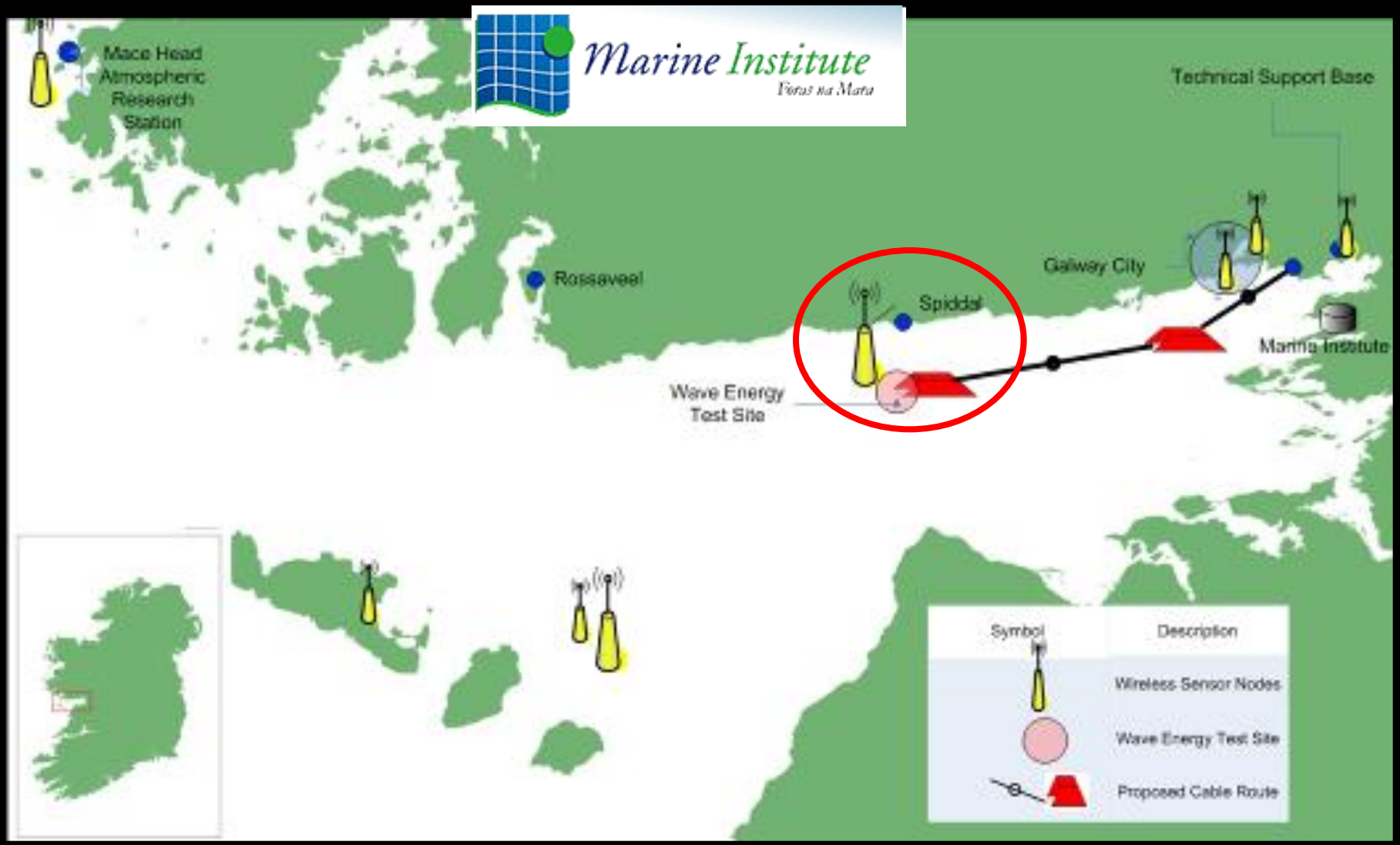
Galway Bay: Natural Water System Management



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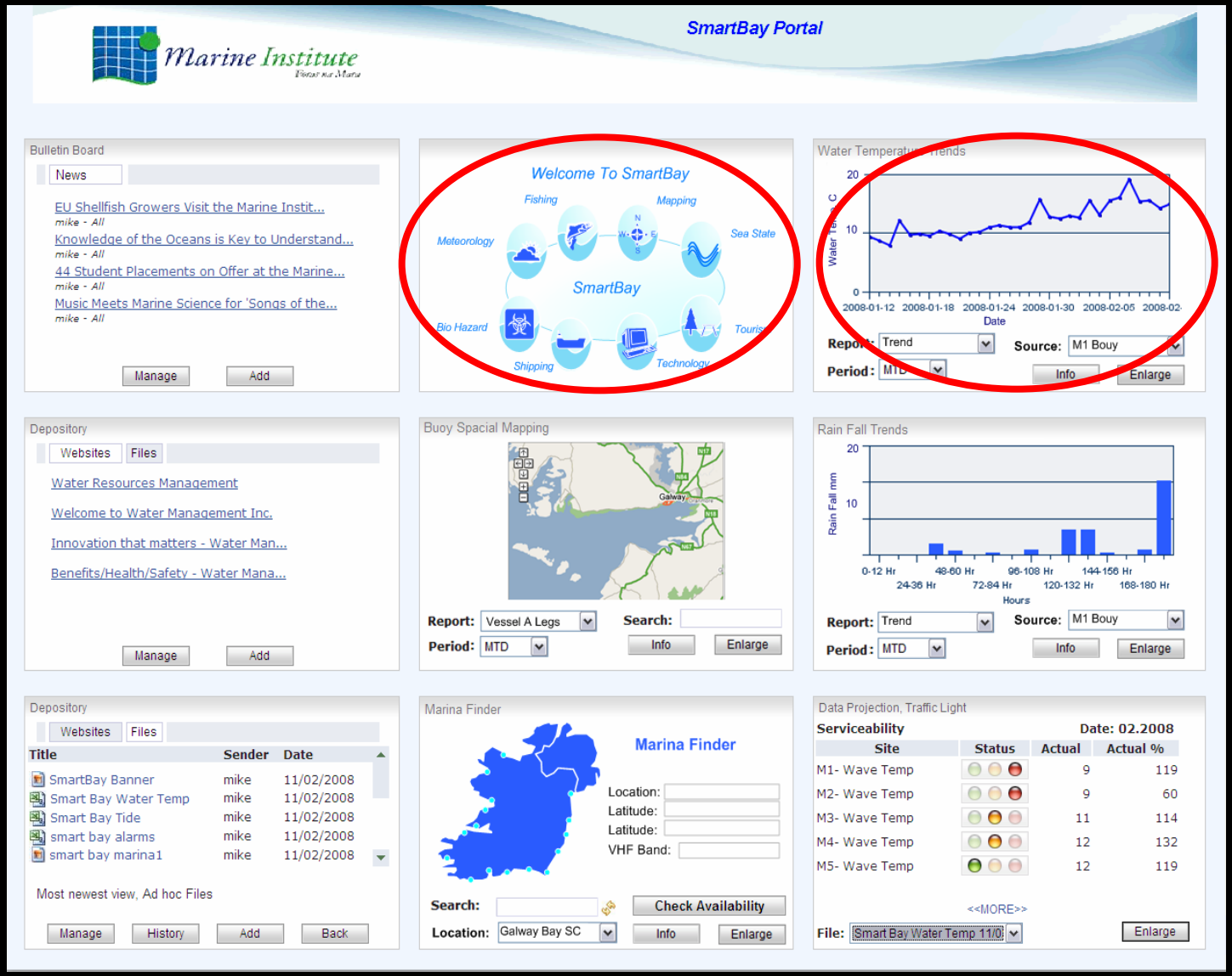
Galway Bay: Natural Water System Management



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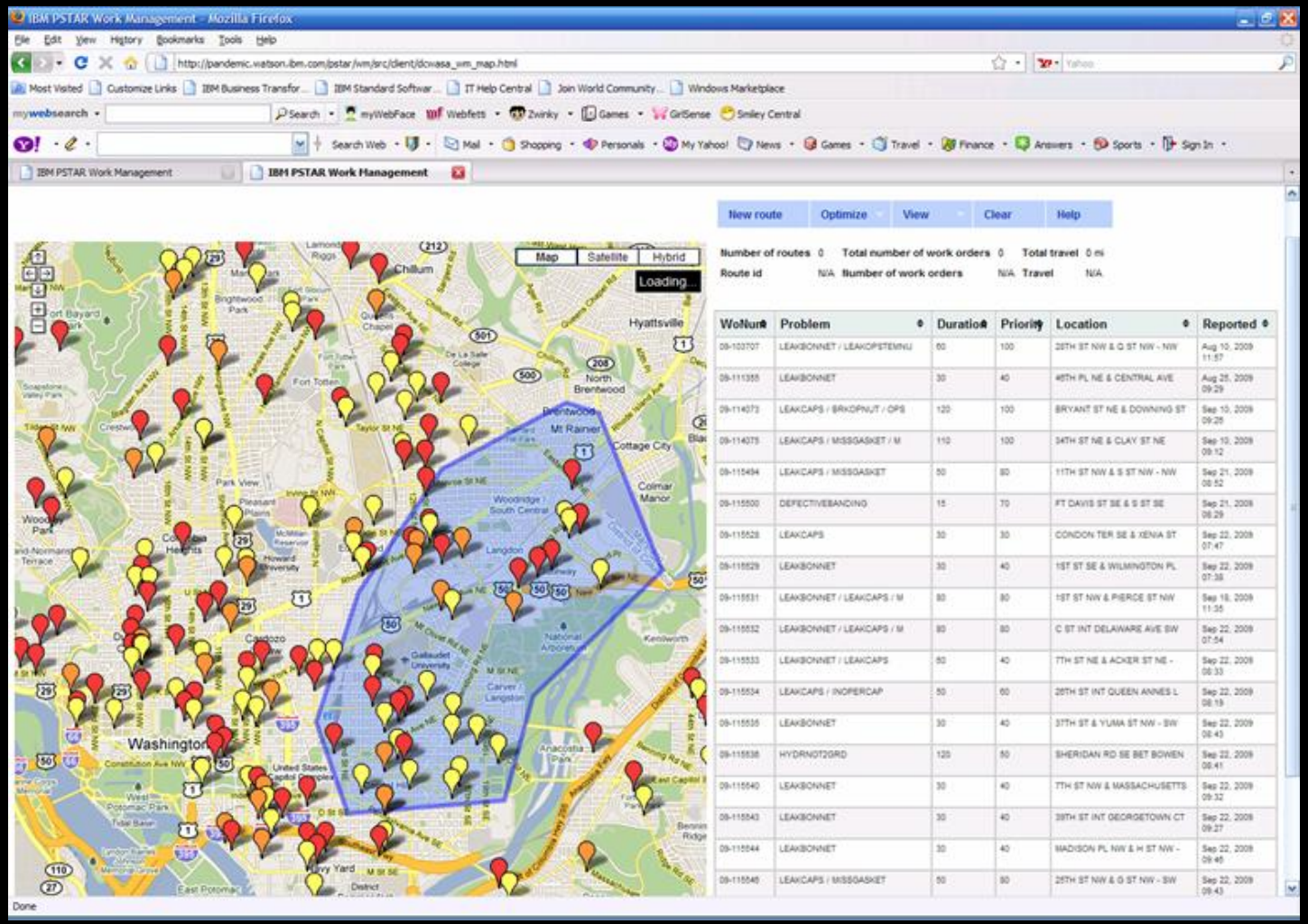
DC Water & Sewer Authority: Automated Scheduling



Maximize number and priority of work orders per team

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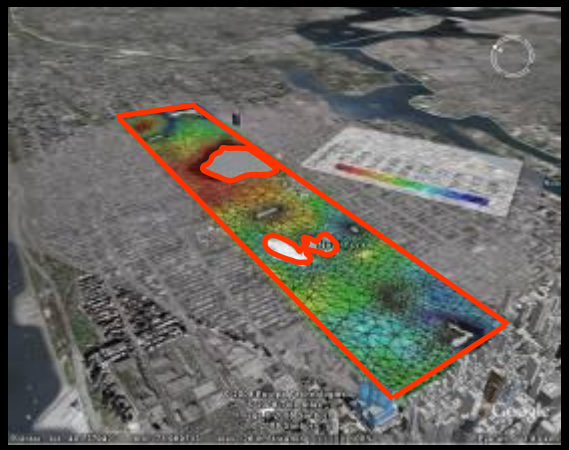
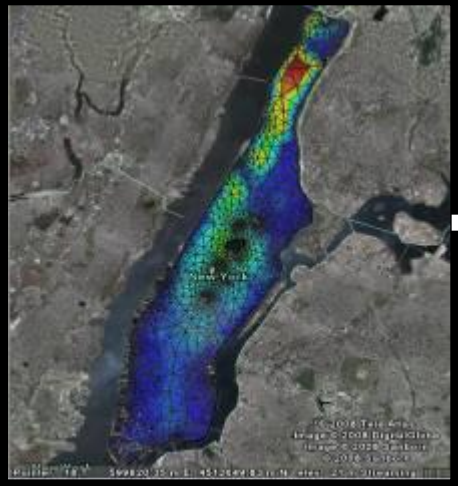
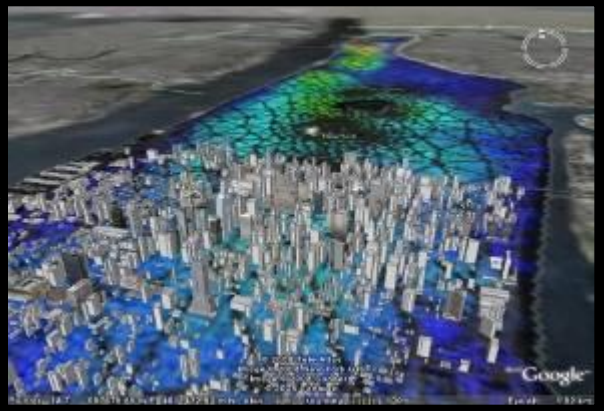
Rio de Janeiro: Advanced flooding prediction







Analysis of Precipitation

Flood Prediction

Impact Estimates

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Other applications for Smarter Water management

Global usage analysis and individual incentives

Leakage Detection at the Network / Residential Level

Leakage Reduction using Dynamic Pressure Control

Optimal Valve Placement for Pressure Reduction

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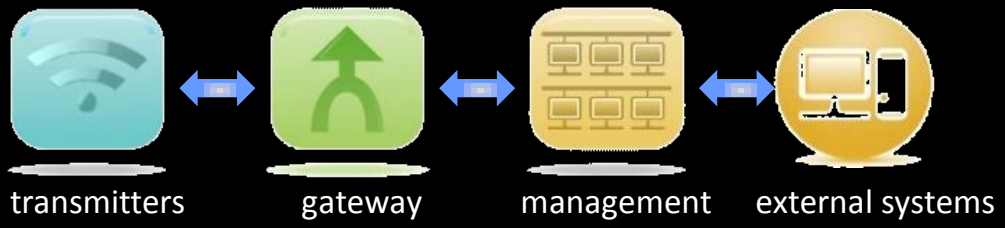
Expanding the systems we can manage remotely

Miltel Communications Ltd

- Low-power, long range sensor data transmission
- Used for levees, water meters, etc.



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Considerations for Entrepreneurs

What?

Instrument to Manage ***(Data)***

Integrate to Innovate ***(Analysis)***

Optimize to Transform ***(Coordination)***

Where?

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