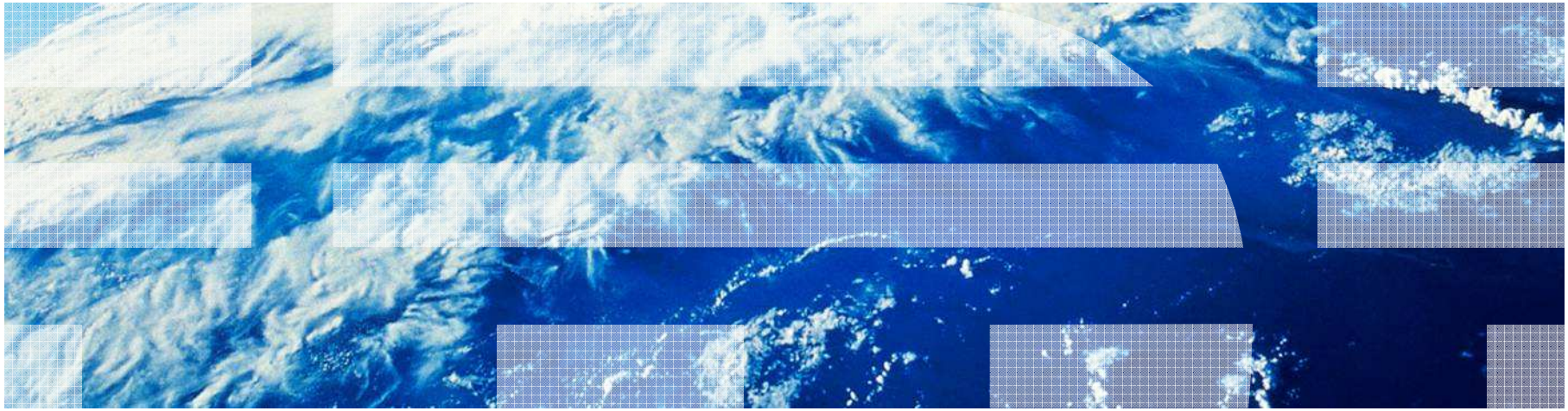
Let's Build a Smarter Planet:

Smart Cape Cod Project Introduction

Cape Cod GIS User Group Meeting
December 15, 2010



© 2010 IBM Corporation

Smart Cape Cod Initiative Aims at Solving Water Problems and Boosting the Economy

"We have to take innovative approaches," says Paul Niedzwiecki, the commission's executive director. "We have a substantial problem but not a lot of existing infrastructure. ***If we're smarter about the solutions, we can do it less expensively– without breaking the backs of the year-round residents of the Cape****."*

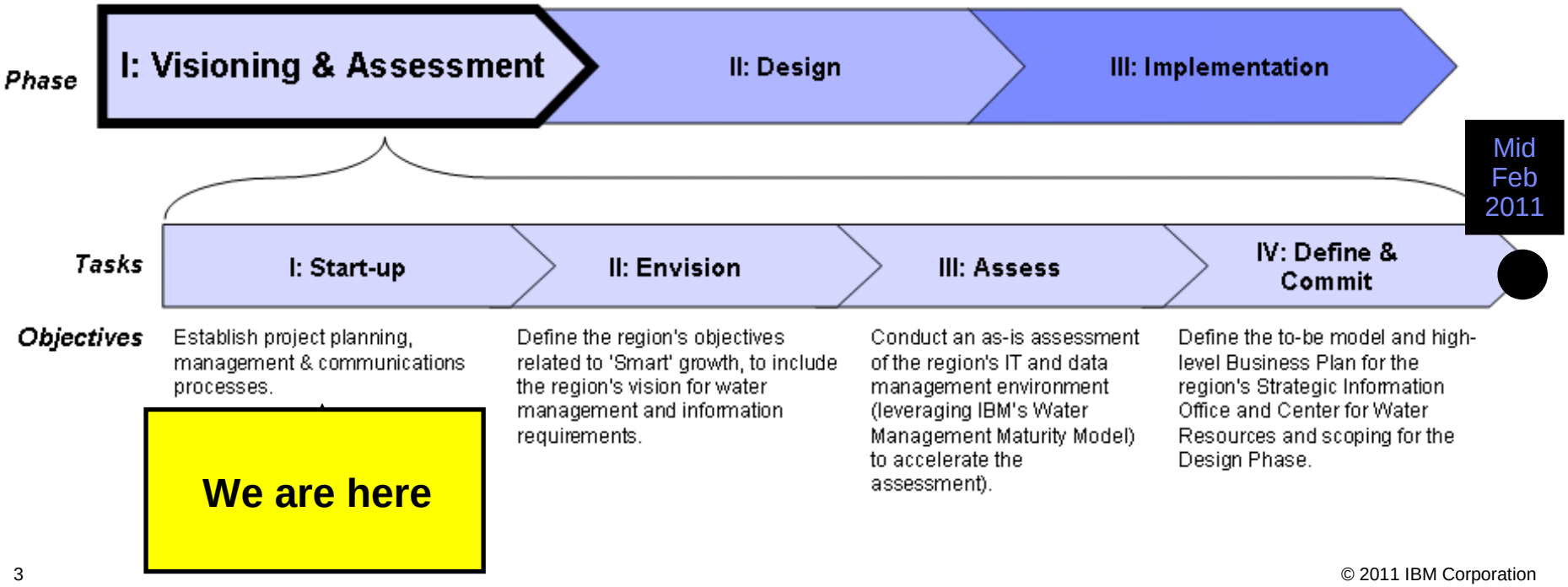
Source: Wikimedia Commons

"Cape Cod's commitment to deploying a broadband infrastructure, its strong base of academic institutions, its entrepreneurial business community and the ***critical linkage between environmental management and the region's economic prosperity*** *all contribute to the region being a natural choice for an innovative project of this nature," said Sharon Nunes, VP, Smarter Cities Strategy and Solutions, IBM*

© 2011 IBM Corporation

Smart Cape Cod Initiative

- The primary focus in Smart Cape Cod Initiative focused developing a strategic regional water information system and Center for Excellence for Water Resources.
- Our objective is to build a strategic relationship to design and implement the components which are critical to the economic development and environmental future of the region.
- We are a three-phased approach based upon our experience with similar engagements; this project addresses the first phase, 'Visioning & Assessment.'



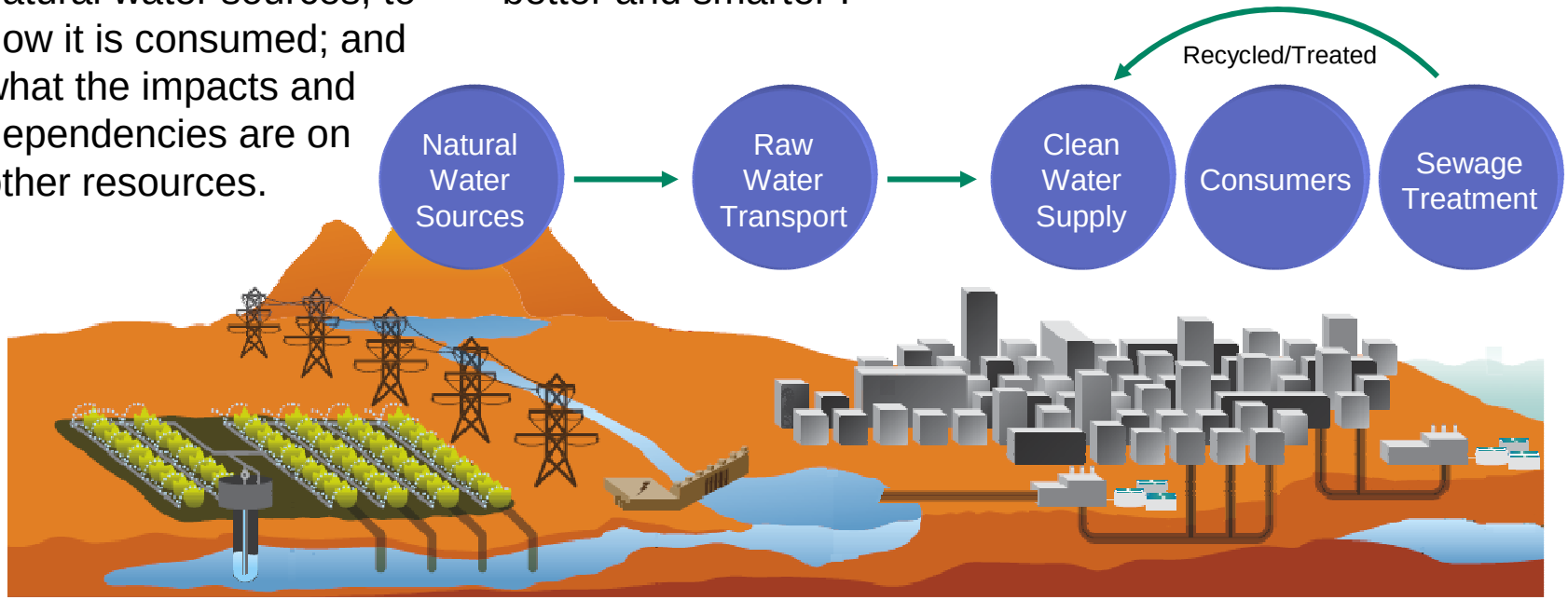
© 2011 IBM Corporation

Smarter Water Management means enabling higher levels collaboration and innovation across value chains and ecosystems

A lot more data is needed to fully understand, model and predict how water flows around this planet – from natural water sources, to how it is consumed; and what the impacts and dependencies are on other resources.

Access to this information will ensure that we don't just fix or rebuild existing infrastructure, but to do it better and smarter .

Allowing us to become smarter in how we consume and pay for water.



© 2011 IBM Corporation

The need for progress in the way water resources and water infrastructure around the world is clear

6x

Increase in global water usage since the 1900s; twice the rate of human population growth.

1.1 billion

The number of people that do not have access to safe water according to The World Bank.

45%

Up to 45% of water is lost due to leaks in an aging water infrastructure around the world.

10,855

Estimated liters of water it takes to make a pair of jeans.

4x

The volume of water in every barrel of oil produced. Tar sands oil is much worse. Many biofuels are far worse still.

2/3

Two thirds of the world's population is projected to face water scarcity by 2025, according to the United Nations..

© 2011 IBM Corporation

Something profound is happening…

INSTRUMENTED

We now have the ability to measure, sense and see the exact condition of practically everything.

INTERCONNECTED

People, systems and objects can communicate and interact with each other in entirely new ways.

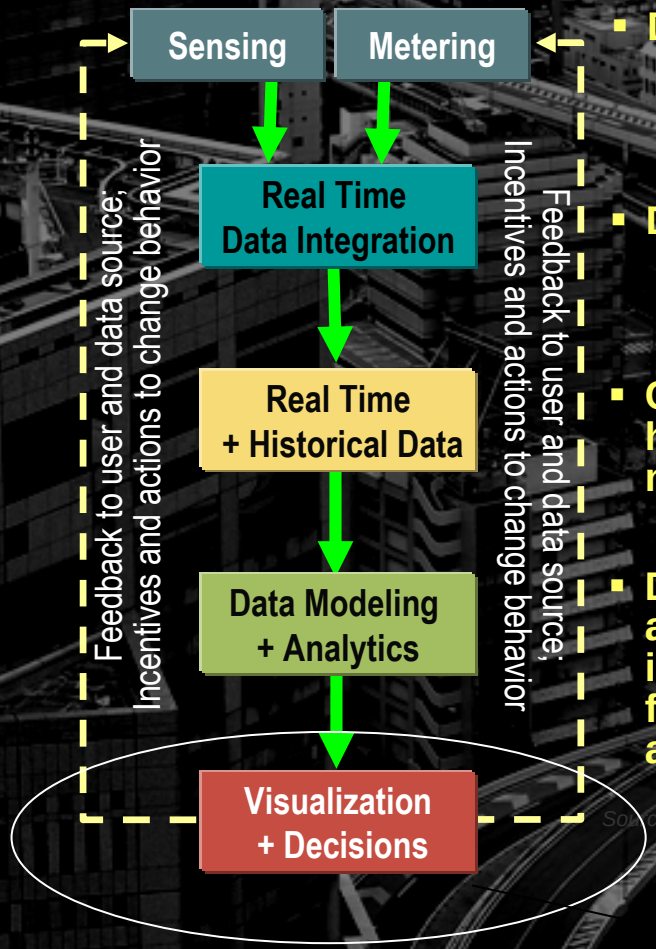
INTELLIGENT

We can respond to changes quickly and accurately, and get better results by predicting and optimizing for future events.

© 2011 IBM Corporation

What does it mean to be a Smarter?

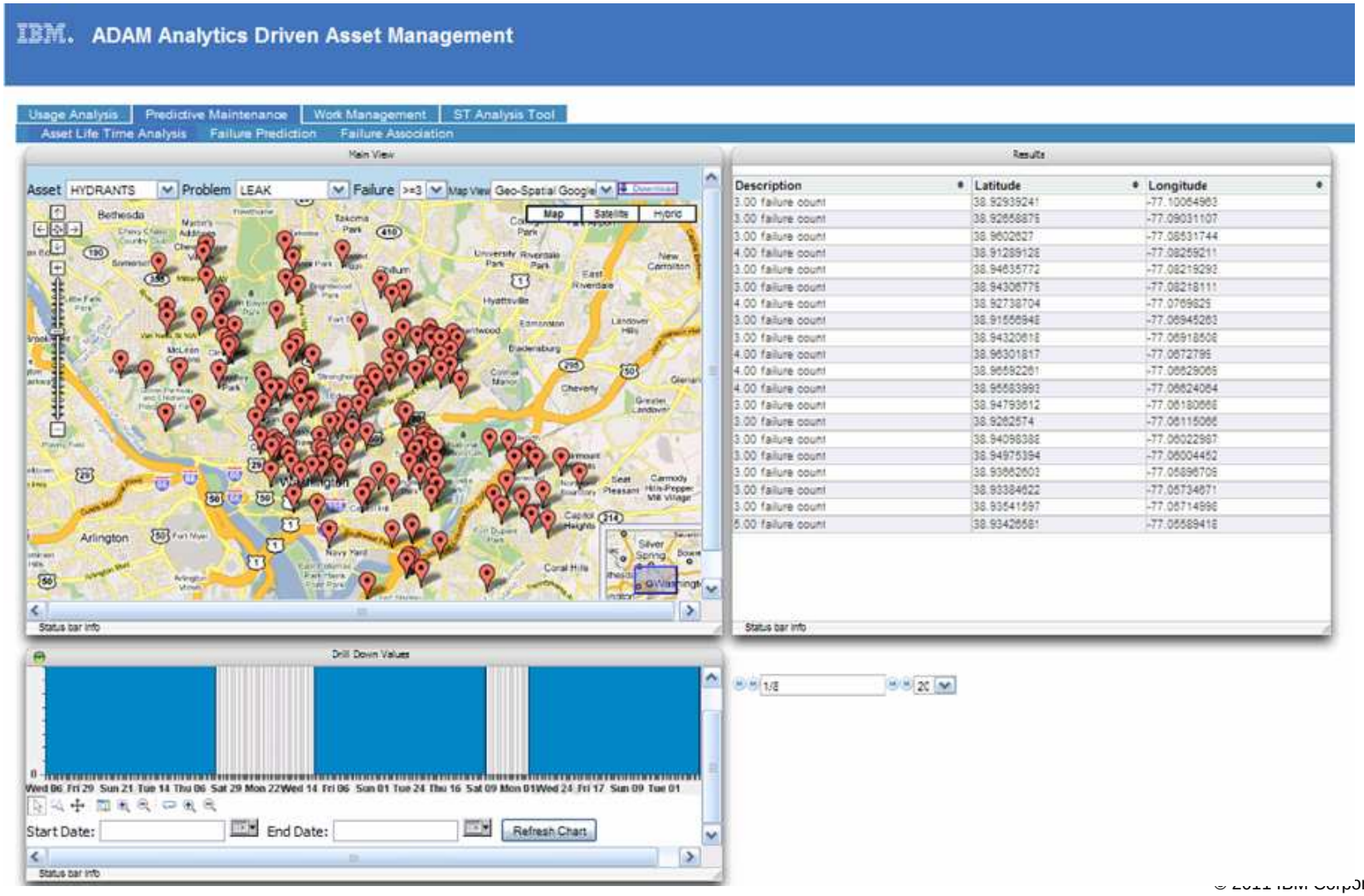
Measuring, Monitoring, Modeling and Managing



- Data collection
- Data Integration
- Comparison of historical data, with newly collected data
- Data modeling and analytics to create insights from data to feed decision support and actions

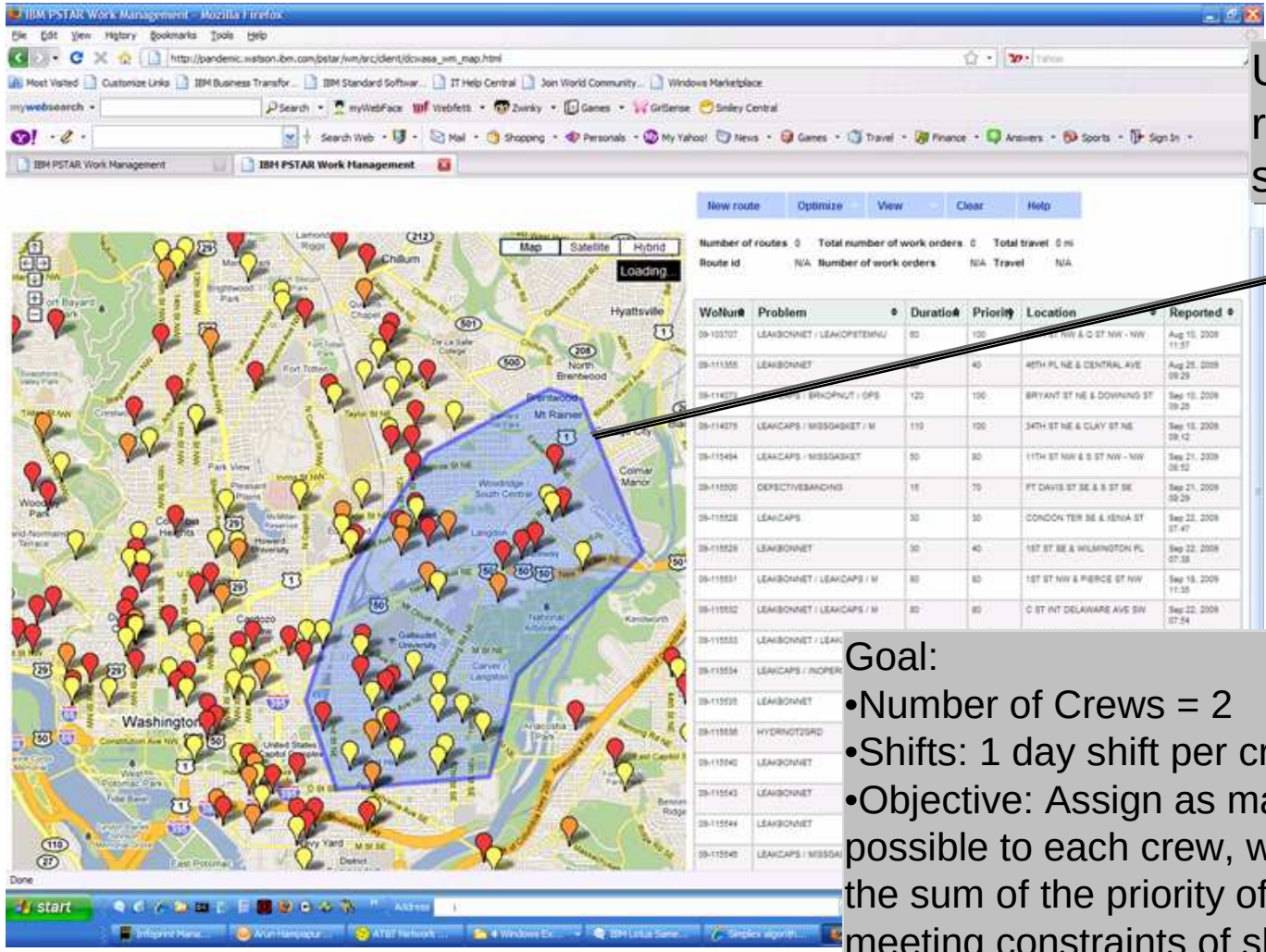
Source: IBM Corporate Strategy

Leveraging GIS in Smarter Water Management - Failure Analysis Example: Hydrants with more than 3 leak problems in the last 3 years



© 2011 IBM Corporation

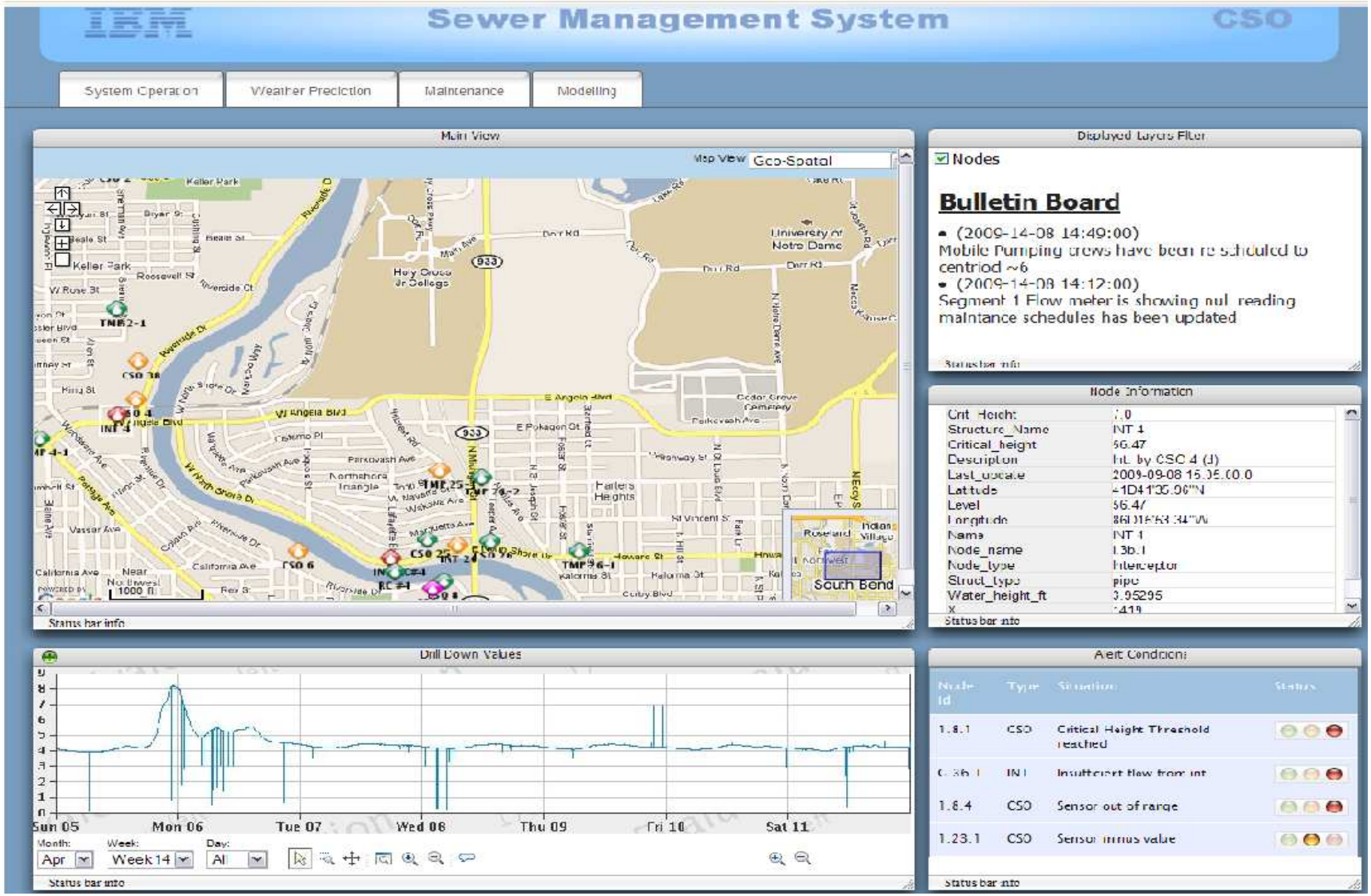
Leveraging GIS in Fleet and Service Management
Automated scheduling in a user selected zone of the city



User selected region for scheduling

Goal:
- Number of Crews = 2
- Shifts: 1 day shift per crew
- Objective: Assign as many WO's as possible to each crew, while maximizing the sum of the priority of the WO's while meeting constraints of shift duration, lunch break & travel time.

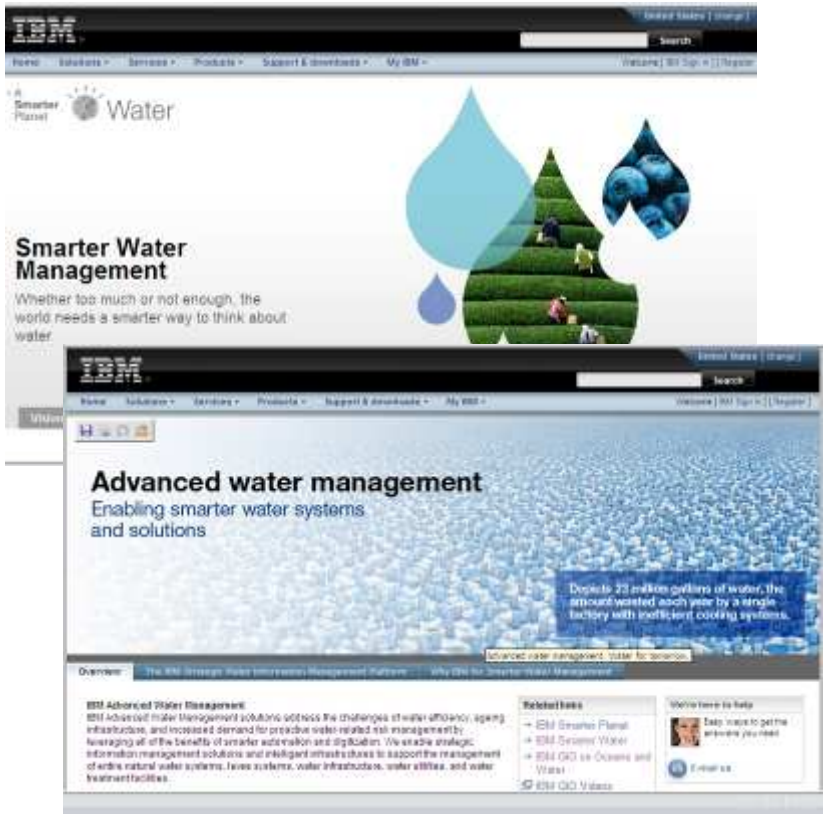
Leveraging GIS to Improve Sewer and Stormwater Management



© 2011 IBM Corporation

For more information & materials

- Smarter Water Management Thought Leadership
  - http://www.ibm.com/smarterplanet/water
- Smarter Water Management Solutions Home Page
  - http://www.ibm.com/green/water
- GIO Report on Oceans and Water
  - http://www.ibm.com/ibm/gio/water.html
- IBM Water Management Pains Summary Report
  - http://www-935.ibm.com/services/us/gbs/bus/pdf/ibm-water-pains-report-jan09.pdf



Contact: Michael Sullivan

© 2011 IBM Corporation

Smart Cape Cod Project - IBM Team Contact Details

Michael Sullivan
Project Executive
1.508-566.2712
mesull@us.ibm.com

Carey Hidaka
chidaka@us.ibm.com

Sadanand Shastri
Sadanand.shastri@us.ibm.com

Maryclare Querzoli
maryclar@us.ibm.com

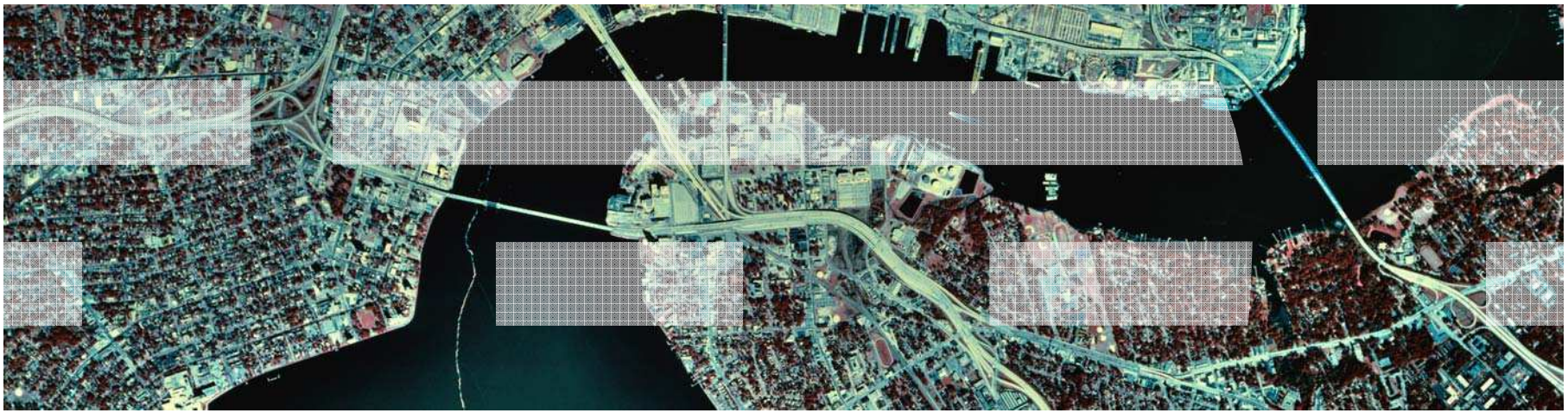
Tim Fain
Project Manager
tfain@us.ibm.com

Perry Hartswick
hartsp@us.ibm.com

Dr. Peter Williams
Peter.r.williams@us.ibm.com

David Zaharchuk
david.zaharchuk@us.ibm.com

Sharon Nunes
Executive Sponsor
slnunes@us.ibm.com



© 2011 IBM Corporation

We've only just begun to uncover what is possible on a smarter planet.

The world will continue to become smaller, flatter and smarter. We are moving into the age of the globally integrated and intelligent economy, society and planet.

By systemically managing water and energy use, as well as carbon emissions, smart organizations will realize true sustainability while achieving real business benefits—driving growth at the individual, organizational and population levels.

Let's work together to drive real progress in our world.

© 2011 IBM Corporation