

Compiled by WWD Managing Editor Clare Pierson

# Smart Metering

Implementing options for advancement

**Clare Pierson:** Please summarize how water utilities begin justifying and selecting the right AMR/AMI solution.

**Don Schlenger:** The choice of metering technology is tied to deployment strategy, and these both affect the business case. For example, deploying a metering system on large customers scattered throughout the service area first affects which technologies are most economical. Ultimately, these decisions should be based on the data required to provide certain services for various customers, both external and internal. The services should be tied to the utility's goals and objectives, such as conservation or enhanced customer service.

**Pierson:** What is your definition of a "smart grid?" Why is it optimal, and will it be necessary in the near future?

**Schlenger:** In the electric utility industry, smart grid is an aggregate term applied to a collection of technologies and operational practices, including advanced metering systems; wide-area monitoring and analytical systems; time-of-use and real-time pricing tools; advanced switches and cables; smart appliances; communications technologies; and databases to store and analyze huge volumes of consumption information. Smart grid will provide the technology to enable the utility and its customers to become partners in managing the supply-demand relationship. This should increase energy efficiency and reliability, lowering costs and improving service.

Smart grid investments have implications for water utilities because they are major users of energy. Many of the electric smart grid concepts can be applied to water systems, including smart metering and demand response; distribution system sensors for pressure, leaks and even water quality; remote controlled service line shut-offs; and energy management. Some water utilities are beginning to speak in terms of "smart pipes."

**Pierson:** What is the biggest challenge water plants or utilities face in implementing a smart grid system?

**Schlenger:** Although AMI for water utilities is well established, it is evolving rapidly. Business case models for advanced applications need more development. Smart pipes applications for leak detection and distribution system monitoring are expensive or still unproven, and in lean

economic conditions, it may be difficult to cost-justify these technologies.

**Pierson:** Has the stimulus package spurred any more or less interest from utilities in implementing AMR/AMI?

**Schlenger:** While a number of water utilities sought ARRA stimulus money for AMI projects, little of the stimulus money went to such projects in the first round of funding. Metering unmetered customers and increasing conservation in drought-plagued areas were given priority. Many utilities hope to do better in subsequent rounds of funding.

**Pierson:** It seems like one of the few options utilities are left with when planning to implement AMR/AMI, smart grid or other vital upgrades is raising water rates for customers. Do you see any alternatives to this, or are increased rates inevitable?

**Schlenger:** Most water AMI projects can generate significant operating-cost savings and have been justified with rigorous benefit/costs analyses, so they haven't put much pressure on rates. AMI and other systems that enable the water utility to improve its load factors (that is, reducing peak to average ratios) or recover non-revenue water may be able to defer some capital construction. This will also help avoid pressure for rate increases.

AMI/AMR can benefit the consumers by providing them their own consumption data, often on an individual Web page for each customer. Some utilities monitor consumption data, notifying customers about high consumption before they get a bill. Soon, AMI will help customers create and manage household water budgets. WWD

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## WEBresources >>>

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## EPA Issues 2008 Information on Toxic Chemical Releases

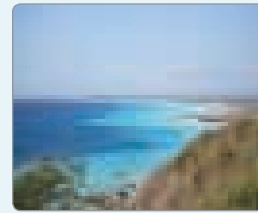
The U.S. EPA released the "2008 Toxics Release Inventory" (TRI), which provides information on toxic chemicals used and released by utilities, refineries, chemical manufacturers, paper companies and many other facilities across the nation.



The TRI is compiled from data submitted to EPA and the states by industry. In EPA's mid-Atlantic region, the 2008 TRI data indicate a 9.1% decrease of 35.2 million lb of on- and off-site chemical releases as compared with 2007.

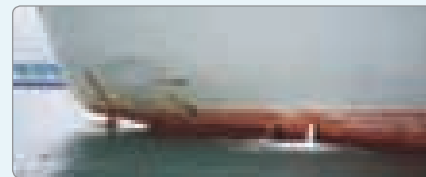
## Wastewater Experts Meet in Cuba

The United Nations (U.N.) Environment Programme and the U.N. Development Programme hosted a four-day regional wastewater management workshop at Hotel Nacional de Cuba in Havana, Cuba.



Among the objectives of the workshop were discussing the final results and experiences in the implementation of the GEF-funded project "Innovative Approaches for Heavily Contaminated Bays in the Wider Caribbean" and sharing lessons learned in the environmental rehabilitation of Havana Bay and its watersheds.

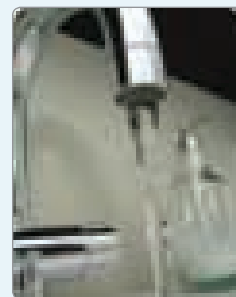
## Wisconsin DNR Announces State Ballast Water Regulation



Wisconsin will start regulating ocean-going ships arriving in its Great Lakes waters at the start of the next shipping season, Feb. 1, 2010, to stop the flow of invasive species arriving in its ballast water.

Ballast water is the main source of harmful new aquatic invaders to the Great Lakes and Wisconsin's inland waters, according to the Wisconsin Department of Natural Resources. Wisconsin joins New York, Michigan and Minnesota in regulating ballast water.

## Study Finds Hundreds of Pollutants in Nation's Tap Water



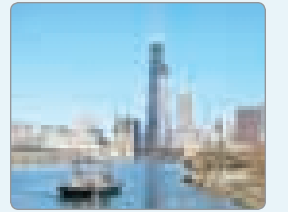
Tap water in many large metropolitan areas is polluted with a cocktail of chemical contaminants, according to a study released

by the Environmental Working Group (EWG). These pollutants usually do not violate any legal standards, but they often come in potentially toxic combinations that raise serious questions, EWG said. Pensacola, Fla.; Riverside, Calif.; and Las Vegas topped the list of major cities with the most contaminated tap water.

In an analysis of 20 million tap water quality tests performed by water utilities between 2004 and 2009, EWG found that water suppliers detected a total of 316 contaminants in water delivered to the public.

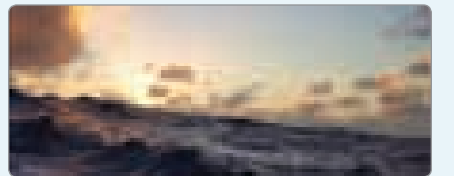
## Federal Funding to be Used for Asian Carp Control

Great Lakes Interagency Task Force Chair and U.S. EPA Administrator Lisa P. Jackson announced \$13 million in federal funding to prevent Asian carp from migrating further toward the Great Lakes.



The U.S. Army Corps of Engineers has identified needs for measures to deter Asian carp from moving closer to Lake Michigan. The majority of funding announced will be used to close conduits and shore up low-lying lands between the Chicago Sanitary Ship Canal and adjacent waterways.

## Study Highlights Ocean Acidification



The Convention on Biological Diversity recently released a study, "Scientific Synthesis of the Impacts of Ocean Acidification on Marine Biological Diversity."

According to the study, seas and oceans absorb approximately one-quarter of the carbon dioxide (CO<sub>2</sub>) emitted to the atmosphere from the burning of fossil fuels, deforestation and other human activities. As more CO<sub>2</sub> has been emitted into the atmosphere, the oceans have absorbed greater amounts at increasingly rapid rates. The absorption of atmospheric CO<sub>2</sub> has resulted in changes to the chemical balance of the oceans, causing them to become more acidic.

## Chinese Delegation Visits NGWA

A 12-member Chinese delegation studying the effects of climate change on groundwater supplies visited the National Ground Water Assn. to learn about the issue. The Chinese group is involved in the International Project on the Climate Change Effect on Groundwater through Monitoring.

Presentations to the delegation included "Monitoring Lakes from Space," "Key lessons from Groundwater Practice" and "Understanding Collector Well Systems." WWD

News compiled by WWD Associate Editor Elizabeth Lisican

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