

Robert Renner



Riding Out the Storm

Dealing with the effects of hurricanes on drinking water systems

The aftermath of 2012's Superstorm Sandy was a difficult time for many water utilities. SWS Managing Editor Mary Beth Nevulis recently spoke with Robert Renner, executive director of the Water Research Foundation, to discuss how utilities can prepare themselves and their customers for these kinds of storms.

Mary Beth Nevulis: What are possible operational and economic implications of hurricanes on drinking water systems?

Robert Renner: There are numerous operational and economic impacts after a hurricane. For example, water utilities reported a marked increase in the need for staff—both existing personnel as well as contracted labor and vendors—to meet operational demands, increase sampling of water, and conduct emergency operations and other safety precautions. Further, utilities found that external factors such as road closures played a large role in preventing efficient operations, as it is difficult for staff and vendors delivering supplies to access the facilities.

From an economic standpoint, most water utilities can expect increased personnel and treatment costs related to a major storm. Medium-sized systems (3,301 to 10,000 customers) incurred the greatest cost per customer to respond and recover from Hurricane Irene, while small drinking water systems (3,300 and fewer customers) were the most vulnerable systems to these costs. Finally, systems reported that Federal Emergency Management Agency (FEMA) reimbursement arrived several months after costs were incurred, so utilities should anticipate these delays when planning how to maintain drinking water services during and after a severe storm.

Nevalis: What are some lessons

learned from Hurricane Irene and Superstorm Sandy that water utilities can use to prepare for these storms?

Renner: The water utilities that fared best during Sandy often had in place contingency plans to access emergency power. Establishing a direct line of communication to the power company was critical.

The utilities that fared best during Irene also had this direct line of communication, and had formed strategic partnerships with other utilities and several municipal public works departments. This helped restore services more quickly and efficiently by providing drinking water systems with the necessary support and resources to deal with unexpected failures during a storm. For example, small utilities borrowed generators and other equipment from large-scale utilities to improve their response capabilities to Hurricane Irene. Relationships matter.

It also is important to take adequate steps before a storm strikes. Performing timely infrastructure maintenance and replacement can greatly reduce damages during a storm. Documenting an "After Action Report" or a lessons-learned document can greatly improve responses to future emergencies and natural disasters.

Finally, utility managers should consider sitting down with an insurance agent to help systems better prepare for emergency costs. Because medium-sized utilities incurred the greatest cost per

customer after Hurricane Irene, these utilities should be mindful of potential costs when planning an operating budget. All utilities that apply for FEMA relief should plan for funding to be delivered several months after additional costs were incurred and, therefore, should plan and budget accordingly.

Nevalis: What can utilities do to prepare or help their customers before, during and after a big storm?

Renner: We found that drinking water systems should prioritize and establish a clear line of communication with their customers as well as regulators, neighboring systems, other utilities, emergency responders and media outlets in advance of any storm. Multiple clear channels of communications are critical to ensuring that as many people as possible actually receive the information. This, in turn, can help customers prepare for potential service disruptions, and help them troubleshoot issues accessing drinking water that may not necessarily involve the water utility. **SWS**

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