



# Press Release

## **For Immediate Release**

### **For More Information Contact**

Ryan Carbain  
201.964.2473  
[rcarbain@mww.com](mailto:rcarbain@mww.com)

### **Editor's Note:**

In addition to this project, Water Research Foundation staff is available should you have drinking water quality related questions in the aftermath of Hurricane Sandy.

## **Water Research Foundation Issues Report on the Operational and Economic Impacts of Hurricane Irene on Drinking Water Systems**

### **Lessons learned and Recommendations for Water Utilities in the Wake of Hurricane Sandy to Help Prepare for Future Storms**

**Denver, CO, November 5, 2012** – Hurricane Irene made landfall in North Carolina on August 27, 2011, and continued as a tropical storm through New York, New England, and Quebec, Canada. The hurricane caused wide-spread flooding and wind damage, resulting in infrastructure losses and power outages. More specifically, the Hurricane impacted the operations of drinking water systems along the East Coast of the United States.

Immediately after Hurricane Irene struck in 2011, the Water Research Foundation (WaterRF) funded a survey of impacted drinking water systems. The lessons learned were compiled into a summary report to provide water systems with the most up-to-date information related to developing and managing an appropriate emergency response plan. Given the widespread and catastrophic impact of Hurricane Sandy, the findings and recommendations are especially timely. However, it's important to note that although water utilities actively plan for natural disasters, there is always an unknown potential impact from such a significant storm like Sandy.

The research effort included surveys of 65 water systems impacted by Hurricane Irene and was designed to assess the operational and financial impacts of the storm. The "[Report on the Operational and Economic Impacts of Hurricane Irene on Drinking Water Systems](#)," is now available at [www.WaterRF.org](http://www.WaterRF.org) to the general public.

"Hurricanes can cause significant damage to water utility facilities and disrupt operations as evidenced by Hurricanes Irene and, just this past week, Sandy," said Rob Renner, WaterRF Executive Director. "What's critical is that we learn from these events and improve how systems prepare for, endure, and recover from such storms."

**Here are a few of the lessons learned from Hurricane Irene that are highlighted in the new report:**

**Lessons Learned: Safety Precautions**

Many survey respondents indicated that increased water sampling was a primary precautionary measure taken during and following the storm.

**Lessons Learned: Staffing**

Emergency situations often require additional staff, additional time from existing staff, and in some cases, contract staff or vendors in order to respond to an emergency situation. Additional related costs are often acquired during extreme storm events.

**Lessons Learned: Road Blocks**

A major obstacle that many survey respondents faced was road closures. Respondents recommended including evacuation and alternate access routes to assist crews during emergency situations.

**Lessons Learned: System Size and Emergency Response Costs**

According to the results of this survey, medium-sized systems (serving 3,301 to 10,000 customers) incurred the greatest cost per customer to respond to and recover from Hurricane Irene.

**Lessons Learned: System Size and Operating Costs**

Small drinking water systems (serving 3,300 or fewer customers) were found to be most vulnerable to an increase in operating costs as a result of Hurricane Irene.

**Lessons Learned: Financial Assistance**

Drinking water systems reported that FEMA reimbursement arrived several months after costs were incurred. Drinking water systems can anticipate this kind of delay in their business continuity plans in order to maintain drinking water services.

**Based on their real-world experiences, impacted water utilities offered a number of recommendations, outlined below:**

**Recommendation: Insurance**

Insurance coverage may affect emergency fund relief eligibility. Sitting down with an insurance agent may help drinking water systems prepare financially for future emergency costs.

**Recommendation: Sampling**

Drinking water systems found that communication with power providers was critical and recommend establishing clear lines of communication with these providers. Drinking water systems that had developed comprehensive emergency power plans that incorporated communication protocols for internal and external power sources found that they were able to deal with power issues efficiently and avoid prolonged power outages.

**Recommendation: Communication**

Survey respondents indicated that having established clear channels of communication with regulators, neighboring drinking water systems, other utilities, media outlets, and other local emergency responders prior to the storm was invaluable during and following the hurricane.

**Recommendation: Infrastructure Maintenance**

Survey respondents recommended timely infrastructure maintenance and replacement as key to maintaining the resiliency of infrastructure and reducing damages during a major storm event such as a hurricane.

**Recommendation: FEMA**

Drinking water systems found that it was important to coordinate with the appropriate entities to determine the primary FEMA contact and to establish clear lines of communication to keep all parties informed of the process.

**Recommendation: Partnerships**

Diverse and strategic partnerships can provide drinking water systems with support and resources needed to address unexpected failures during storm events. Partnerships with utilities, public works, and public service providers in neighboring towns can help supplement the local availability of emergency assistance.

**Recommendation: Regular Planning**

Drinking water systems reported that having an up-to-date emergency response plan was critical to its effectiveness

**Recommendation: Documenting Lessons Learned**

Documenting successes and failures in an “After Action Report” immediately following an emergency event can act as a record of damages, infrastructure capacity, response protocols, recommendations for future emergencies and improvements.

**Recommendation: Incident Command Structure (ICS)**

Drinking water systems identified their ICS as an important resource for responding to storm events. Regularly updating their ICS, keeping staff well-informed about their ICS and making sure that all roles are taken seriously were identified as critical actions for being prepared for an emergency.

**Recommendation: Take Advantage of Resources**

Some larger water utilities were able to successfully provide assistance to smaller drinking water systems by loaning equipment, such as generators, during and after Hurricane Irene.

**About the Water Research Foundation**

Founded in 1966, the Water Research Foundation is an international, 501(c)3 non-profit organization that sponsors research to enable water utilities, public health agencies and other professionals to provide safe and affordable drinking water to the public. With more than 1,000 subscribers who provide water to 80 percent of the U.S. population, WaterRF has funded and managed more than 1,000 projects. For more information, go to [www.WaterRF.org](http://www.WaterRF.org).