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GOOD STORY

Hurricane Sandy: High School Students Innovate to Address Gas Shortages in the Wake of Sandy

The LLIS.gov team identified several innovative Whole Community ideas and practices to support preparedness, response, and recovery following Hurricane Sandy.

SUMMARY

Following Hurricane Sandy, a group of innovative New Jersey high school students partnered with the [Department of Energy](http://www.doe.state.nj.gov) (DOE) to provide information related to available fuel and generators to victims. The students employed open data sources and online maps to collect and share these critical, with up-to-date information to survivors in the disaster areas.

DESCRIPTION

Hurricane Sandy

On Monday, October 29, 2012, Hurricane Sandy made landfall near Atlantic City, New Jersey, pushing a massive storm surge to shore and generating winds to up to 75 miles per hour. The National Hurricane Center downgraded Sandy to a post-tropical cyclone shortly after landfall. Sandy caused storm surge, record flooding, and wind damage. Nine days after the storm, a large nor'easter caused massive snowfall undermining response operations in the disaster-impacted areas.

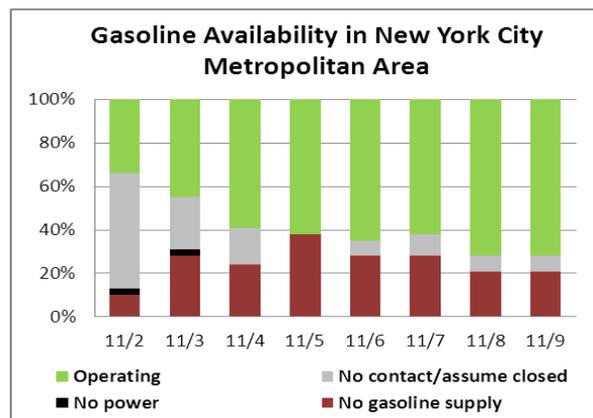


Hurricane Sandy Following Landfall
(Source: NOAA)

As a result of these events, millions of people were left without power and hundreds were displaced along the East Coast from North Carolina to Maine. New York and New Jersey, two of the most populated states in the nation, were particularly impacted by the storm.

Fuel Shortage Issues

Following Sandy, disaster area residents as well as state and local responders experienced widespread fuel shortages. In many cases, prolonged power outages in the disaster areas hindered the ability of gas stations that lacked backup generators to pump available gas. On November 2, President Barack Obama stated,



Status of New York Area Gas Stations as of November 2 (Source: EIA)

“Hurricane Sandy struck the East Coast on October 29, causing severe damage to the petroleum refining and distribution sector- including pipelines, refineries, bulk terminals, and ports. Product deliveries already lost, as well as demand increases as retail systems are restored, require that replacement volumes be made available immediately.”

On November 2, DOE released approximately two million gallons of fuel from the [Northeast Home Heating Oil Reserve](#) for the first time ever.

This release helped ensure that Federal, state, and local responders in the impacted areas could access the fuel they needed to continue response and recovery operations. The release included diesel fuel for emergency equipment and buildings, electrical generators, water pumps, trucks, and other vehicles. In addition, on the same day the Department of Homeland Security waived the [Merchant Marine Act of 1920](#), also called Jones Act. This allowed foreign-flagged vessels to ship gasoline, diesel, and other petroleum products from the Gulf of Mexico to Northeastern ports for a limited time. By November 15, the Department of Defense’s [Defense Logistics Agency](#) had delivered 7.8 million gallons of gas to the disaster areas.

Gas Station Status Mapping Operations

Although fuel was delivered to the disaster areas during recovery operations, many victims encountered difficulties locating operating gas stations. In addition, many operating gas stations had long lines and often had rationing restrictions in place.

Students at Franklin High School in New Brunswick, New Jersey, employed open data sources and already existing online maps to provide Hurricane Sandy survivors with up-to-date information on available fuel and charging stations. These students used information gathered from personal observations, media reports, and [Twitter](#) and [Facebook](#) updates to collect status information for the disaster area. The students then used the free online mapping service [Mappler](#) to publish information on whether gas stations in the area were open, had power, had available fuel, and/or served as charging stations.

Dr. Wansoo Im, Rutgers University professor and mentor to the students, helped link these Mappler data with DOE resources such as the DOE Gas Station Call Center. Call Center personnel then used the information gathered by the students to identify needs at the different gas stations and to help restoration efforts.

The DOE’s [Northeast Home Heating Oil Reserve](#) is an emergency supply of oil that includes one million barrels of fuel oil. This reserve is stored in Connecticut and Massachusetts, and is part of the [Strategic Petroleum Reserve](#) (SPR), which include a total of 727 million barrels of oil. The SPR is deployed in the event of a disruption in commercial oil supplies that threatens the U.S. economy.

The [Merchant Marine Act of 1920](#), better known as the Jones Act, is a series of shipping laws requiring commercial ships delivering goods between ports in the U.S. to be built, owned, operated and manned by U.S. citizens and to be registered under the U.S. flag. The laws protect the domestic shipping industry and are important to maintaining U.S. national security.

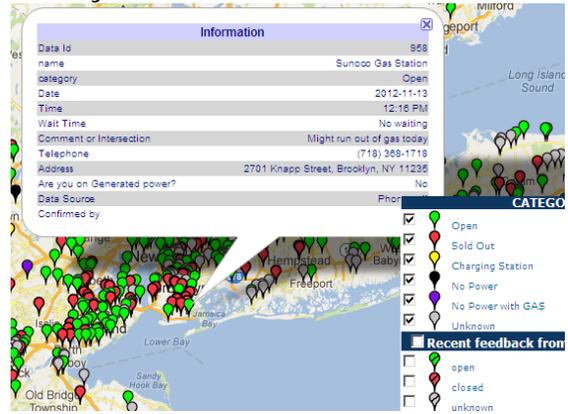


Students Uploading Gas and Charging Station Information to an Online Map (Source: DOE)

During recovery operations, the DOE established a Gas Station Call Center. Gas station owners and managers along the East Coast could call this toll-free number if they needed state and local assistance in restoring power or securing supplies of gasoline.

The students entered the information through the Mapper gas station app to create a visual map outlining the status of fuel resources in the community. The information was then fed directly into [Google's Sandy Crisis Map](#), allowing thousands of people to access information on the availability of fuel in their area.

This innovative partnership between a group of high school students and the DOE provided current and accurate information that significantly lowered the wait time for drivers seeking to refuel. In addition, this partnership assisted government and commercial efforts to direct power and fuel resources to the areas most affected by the storm.



Location and Operating Status of Gas Stations in some Disaster Areas after Sandy (Source: Mapper)

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Northeast Home Heating Oil Reserve - Profile

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