



## **Appendix E. 2013 New Jersey State Plan Amendment**



Proposed Amendment

to the

State of New Jersey Hazard Mitigation Plan

Narrative

The effects of Hurricane Sandy on New Jersey in 2012 were severe, with economic losses to businesses of up to \$30 billion. Hurricane Sandy, the most intense storm of the 2012 Atlantic hurricane season, formed in the Caribbean Sea north of Panama on October 22, 2012. The strengthening hurricane moved northwards, severely impacting areas of and around the Greater Antilles. As it curved towards the New England region, the hurricane degenerated into an extra-tropical cyclone and shortly afterwards the massive storm made landfall in New Jersey on October 29.

Over two million households in the state lost power in the storm, 346,000 homes were damaged or destroyed, and 37 people were killed. Storm surge and flooding affected a large swath of the state. Governor Chris Christie said the losses caused by Sandy were, "going to be almost incalculable...The devastation on the Jersey Shore is probably going to be the worst we've ever seen." While moving ashore at Atlantic City, Sandy dropped heavy rainfall that reached 11.62 inches in Wildwood Crest. Its landfall was accompanied by high winds, and the highest recorded wind gust in the state was 90 mph at a station just across the border from Staten Island, New York.

**Damages**

As Governor Christie predicted, the Jersey Shore suffered the most severe winds and surf from Hurricane Sandy and the most damage from the storm. Mantoloking was especially hard hit, suffering severe "wash over" including the creation of two new, temporary inlets. Approximately two dozen oceanfront houses in Mantoloking were completely removed from their foundations and destroyed. The Belmar boardwalk was destroyed, along with Perth Amboy's marina and waterfront. Much of the Casino Pier in Seaside Heights and nearby Funtown Pier in Seaside Park collapsed into the ocean due to intense waves. Most of the rides in these amusement parks were destroyed, including roller coasters. [http://en.wikipedia.org/wiki/Effects\\_of\\_Hurricane\\_Sandy\\_in\\_New\\_Jersey\\_-\\_cite\\_note-32](http://en.wikipedia.org/wiki/Effects_of_Hurricane_Sandy_in_New_Jersey_-_cite_note-32)

The seaside communities on Long Beach Island were among the hardest-hit as well. Scores of homes and businesses were destroyed and the storm surge deposited up to four feet of sand on island streets, making them impassable. Governor Christie issued a mandatory evacuation on October 28<sup>th</sup>, and residents and business owners were prohibited from returning until November 10<sup>th</sup>. While no fatalities recorded on Long Beach Island, preliminary damage estimates suggests between \$750 million and \$1 billion in damages occurred on the island alone.

By November 12<sup>th</sup>, homeowners of Ortley Beach still had not been allowed onto the Barrier Island to check on their properties. Ortley Beach was declared "Ground Zero" because of the unbelievable amount of devastation.

Hurricane Sandy created an insurmountable amount of riverine flooding. New Jersey's communities along the west side of the Hudson River (an area dubbed the Gold Coast by real estate marketers), were flooded by the storm surge through New York Bay and into the Hudson River. There were massive power outages in



Bayonne, Jersey City, Hoboken, Weehawken, North Bergen, and Edgewater, forcing the evacuation of patients from Palisades Medical Center.

Half of Jersey City lost power, while large sections of the city's downtown, including City Hall and the Jersey City Medical Center, flooded and had to be evacuated. As high tide approached the Hudson River and overflowed the wall at Exchange Place. Around the same time, Liberty Harbor spilled into the southern part of Marin Boulevard. Both breaches caused water to rush down Columbus Drive and Marin Boulevard where they met near the Historic Downtown. From there, the flood spread throughout the low lying areas of Jersey City.

Half the city of Hoboken was flooded and the city government evacuated two of its fire stations. Hoboken's mayor asked for National Guard help. By late night October 30<sup>th</sup>, an estimated 20,000 people were stranded in Hoboken, surrounded by water. The New Jersey National Guard was deployed and began assisting in rescues on October 31<sup>st</sup>. Additionally, Weehawken fared no better. The downtown neighborhood known as the Shades incurred terrible damage, with nearly every resident forced to temporarily relocate.

In the early morning of October 30<sup>th</sup>, authorities in Bergen County, New Jersey, were evacuating residents after a berm overflowed and flooded several communities. Chief of Staff for the Bergen County Executive, said there were up to five feet of water in the streets of Moonachie and Little Ferry. Also, Sayreville, a community along the Raritan River, faced rising flood waters from the storm surge entering Raritan Bay, which forced the evacuation and rescue of dozens of residents by the Sayreville water rescue team. The Oyster Creek Nuclear Generating Station in Lacey Township was placed on alert when storm waters around the plant rose six feet above normal.

Fires that had destroyed about 14 homes on October 29<sup>th</sup> in Mantoloking restarted in the early morning of October 31<sup>st</sup>, possibly fueled by natural gas. In Morristown, sustained winds peaked at 40 mph with gusts to 68 mph. Other peak gusts included 88 mph in Montclair, 80 mph in Clifton, 78 mph in Newark, 74 mph in Point Pleasant, and 61 mph in Basking Ridge. Gusts along Long Beach Island peaked between 75-90 mph. Many buildings and homes were damaged especially to siding and roof surfaces and hundreds of trees were downed across the state.

### **Energy**

Governor Christie said on the morning of October 30<sup>th</sup>, that some 2.4 million households in the state were without power. No timetable was given on the restoration of power to these customers, although some estimates mentioned a week would be needed before a full damage assessment could be made.

On November 2<sup>th</sup>, 1.6 million customers were still without power, down from 2.7 million. Unfortunately, by November 3<sup>rd</sup>, 31% of homes and businesses in the state did not have electricity.

On the morning of November 5<sup>th</sup>, reported customers in the state without electricity were:

- Jersey Central Power & Light: 382,000
- Public Service Electric & Gas: 375,000
- Atlantic City Electric: 606
- Rockland Electric Company: 19,224

On the morning of November 6<sup>th</sup>, more than 582,000 homes and businesses in the state still did not have power:



- Public Service Electric & Gas: 310,000 remain without service
- Jersey Central Power & Light: 257,884 outages, mainly in Monmouth and Morris counties
- Orange & Rockland: 13,913 remain without service
- Atlantic City Electric: 227, mostly in Atlantic County

On the morning of November 7<sup>th</sup>, winds from a nor'easter delayed restoration of electricity. Federal safety rules prevent line crews working in bucket trucks when winds are greater than 40 mph. About 396,000 homes and businesses remained without service.

- Public Service Electric & Gas: 190,400 remain without service.
- Jersey Central Power & Light: 190,278 remain without service mainly in Monmouth and Morris counties
- Orange & Rockland: 10,744 remain without service.
- Atlantic City Electric: 4,488 remain without service.

At approximately, 6 a.m. EST on November 9<sup>th</sup>, about 265,000 homes and businesses were without power in the state because of Sandy and the subsequent nor'easter.

In the aftermath of the storm, many gas stations were closed and people lined up for hours to get gasoline. According to the American Automobile Association, on November 2<sup>th</sup>, about 60% of the gas stations in New Jersey were closed. On the night of November 2<sup>th</sup>, Governor Christie took action to prevent a fuel shortage and ease the problem of extended wait times and lines at gas stations by signing **Executive Order 108**, declaring a limited state of energy emergency with regard to the supply of motor fuel and implementing odd-even rationing for gasoline purchases in 12 New Jersey counties. Odd-even fuel sales took effect in the following counties at noon on November 3<sup>rd</sup>: Bergen, Essex, Hudson, Hunterdon, Middlesex, Morris, Monmouth, Passaic, Somerset, Sussex, Union, and Warren counties. This ended at 6 a.m. EST on November 13<sup>th</sup>.



Proposed Amendment

to the existing

State of New Jersey Hazard Mitigation Plan

**Plan Amendment**

This Amendment proposes to revise the current 2011 State Hazard Mitigation Plan for the State of New Jersey. It proposes to amend the Plan to add the energy and retail fuel improvements for the State of New Jersey, which will be funded and implemented through the Energy Allocation Initiative.

**Project Description**

The Energy Allocation Initiative is intended to support efforts to encourage enhanced energy resiliency for critical assets and facilities in New Jersey. The program will allow communities to pursue technical innovation by harnessing the resources of the State’s energy, environmental, and emergency management agencies and the perspective of the U.S. Department of Energy’s subject matter experts.

Communities across the State have recognized the importance of energy resiliency in the Hurricane Sandy long-term recovery process. The Hazard Mitigation Grant Program (HMGP) received over 750 Letters of Intent (LOIs) in requests for generators and energy solutions totaling over \$325 million in estimated cost. With the collaboration of representatives from the NJ Office of Emergency Management, NJ Office of Homeland Security & Preparedness, NJ Department of Environmental Protection, and the NJ Board of Public Utilities, each LOI submitted to the HMGP that included an energy project was analyzed. Objective criteria – including population size and density, facility type, NFIP participation, FEMA Public Assistance data, and other relevant factors – were used as a guide to identify those energy resiliency projects that have the potential to serve the greatest need in the event of a future disaster or other event impacting the larger electrical grid. In total, \$25 million is being allocated to 147 jurisdictions and public entities to support energy resiliency projects.

As part of the process, the State partnered with the U.S. Department of Energy (DOE), the DOE’s National Renewable Energy Laboratory (NREL), and FEMA to analyze HMGP requests for energy solutions. NREL developed an energy questionnaire to evaluate potential resilient energy solutions and then analyzed the results on a local/facility level. Based on those results, NREL identified potential opportunities on a local/facility level to build energy resilience by pursuing innovative – but cost-effective – energy solutions. Those opportunities include retrofitting existing solar panel systems to provide continuous power during a disaster; exploring fuel cells, combined-heat-and-power, or other resilient technology which could result in monthly energy savings and be “islanded” from the electrical grid; installing natural gas, solar, or tri-fuel generators; and other innovative technologies.

**Goal**

This initiative is supported by the following goal, which can be found in the 2011 version of the State Plan:

**Goal 5 – Enhance capabilities to make New Jersey less vulnerable to hazards through:**

- Monitor the progress of ongoing mitigation activities by State Agencies
- Provide current information on incentives for mitigation planning and actions



- Encourage the formation of partnerships to leverage and share mitigation resources
- Ensure continuity of critical operations of government and commerce

The State of New Jersey also proposes to add the following goal and corresponding objectives as well. However, please note that the New Jersey State Hazard Mitigation Plan is currently undergoing the update process. If following the numerical order of the current plan, this goal will be considered as Goal 7. The entirety of the following or in part will be included in the updated plan.

**Goal 7 – Continue to enhance and strengthen local mitigation capabilities:**

- Support and provide guidance for local hazard mitigation planning and projects
- Provide technical assistance and training to local governments
- Encourage the adoption, improvement, and enforcement of local codes, ordinances, and land use planning
- Ensure integration of mitigation principles and concepts into existing planning mechanisms, codes, and ordinances
- Encourage planning and the implementation of alternative energy sources, i.e., green initiatives, LEED certification
- Identify and/or provide financial incentives and funding opportunities

**Proposed Mitigation Action**

**ACTION:** Support efforts to encourage enhanced energy resiliency for critical assets and facilities in New Jersey by providing generators to fuel stations that have been identified by the State along State designated evacuation routes as well as provide generators to those State agencies and other agencies/organizations recognized either on the THIRA list, in the State and/or local hazard mitigation plan that serves in a capacity inclusive of, but not limited to: a shelter in place, shelter of last resort or state recognized community shelter, shelter for vulnerable populations and shelters for first responders and/or volunteers that serve in a supportive capacity during all phases of a hazard event.

**HAZARD:** Hurricanes, nor'easters

**BACKGROUND:** On the morning of October 30<sup>th</sup>, after Hurricane Sandy made landfall, Governor Christie stated that some 2.4 million households in the state were without power. As much as a week and a half after the storm, about 265,000 homes and businesses remained without power in the state because of Sandy and nor'easter that followed less than two weeks later. In the aftermath of the storm, many gas stations were closed and people lined up for hours. According to the American Automobile Association, on November 2<sup>th</sup>, approximately 60% of gas stations in New Jersey were closed. Lack of fuel severely affected the ability of emergency personnel to effectively respond to emergency situations in a timely manner as well as respond to those citizens within the community that found themselves in dangerous situations.

**BENEFIT:** Ensures continuity of critical operations of government and commerce, especially in situations where resources (i.e., fuel) may be taxed to the point that it hinders first responders and other emergency management departments/sections as well as those agencies and organizations that provide support (i.e., shelters, services to vulnerable populations) during times of disasters when normal operations have been moderately to severely disrupted.

**PRIORITY:** High



**ESTIMATED COST:** \$25,000,000.00

**RESPONSIBLE ORGANIZATION:** EDA/NJOEM

**TARGET:** October 2013

**COMPLETION DATE:** October 2016

**FUNDING SOURCES:** FEMA