

4. Mitigation Strategy

WHAT'S NEW IN CHAPTER 4?

- *Goals and objectives have been slightly modified to more closely coincide with those found in the 2014 NJ State Mitigation Plan. This is discussed in Chapter 1.*
- *Expanded documentation regarding mitigation actions and the process by which the actions were collected and analyzed.*

Bergen County's mitigation strategy will serve as a long-term roadmap for reducing potential losses due to natural hazards that were identified in the risk assessment (Section 3). This section will describe how Bergen County and its municipalities will accomplish the mission of the entire planning process.

Bergen County's general mitigation planning approach included the following components:

1. **Develop mitigation goals:** FEMA defines mitigation goals as general guidelines that explain what should be achieved. Goals are usually broad, long-term policy statements that represent visions for reducing or avoiding losses from the identified natural hazards. For the 2008 Plan, Bergen County developed mitigation goals that were determined to be timely and still relevant for this Plan update.
2. **Identify mitigation Actions:** Mitigation actions are specific actions that help achieve the mitigation goals. Mitigation actions were identified based on the risk assessment, mitigation goals, and input from Bergen County's 70 municipalities. These actions were evaluated against the mitigation goals and other evaluation criteria.
3. **Implementation Strategy:** Actions with the highest priority are recommended for first consideration. This section describes how the mitigation actions will be implemented.

4.1 Mitigation Goals and Objectives

Mitigation goals and objectives were identified by the Plan Committee in 2008. These goals and objectives remain unchanged for the 2014 plan update. Each goal has several corresponding objectives that further specify implementation actions. The objectives are specific actions and are able to be measured.

Goal 1: Protect and promote public health and safety

Objectives

- a. Achieve excellence in hazard mitigation planning
- b. Improve service to vulnerable populations; reduce harm resulting from emergencies
- c. Educate citizens regarding sustainable development, disaster preparedness and hazard mitigation
- d. Implement and maintain state-of-the-art disaster warning systems

Goal 2: Safeguard critical public facilities and infrastructure

Objectives

- a. Analyze and mitigate potential impacts from hazards for all public facilities and infrastructure (new and existing)

- b. Implement mitigation programs that protect all critical governmental facilities and services and promote reliability of systems to minimize impacts from hazards, maintain operations and expedite recovery in emergencies
- c. Create back-up facilities for critical systems such as water, sewer, digital data, electricity, and communications for all critical facilities
- d. Formalize and implement best practices for protecting systems and networks

Goal 3: Protect public and private property

Objectives

- a. Adopt and enforce public policies to minimize impacts of development and enhance safe construction in high-hazard areas
- b. Integrate new hazard and risk information into building codes, land use planning mechanisms and other public regulations
- c. Educate public officials, developers, realtors, insurance agents, contractors, property owners, and the general public regarding hazard vulnerability and potential severity as well as potential mitigation actions
- d. Promote hazard mitigation of all public and privately-owned property
- e. Incorporate hazard mitigation into all community planning and projects
- f. Promote hazard mitigation for all historic structures
- g. Promote post-disaster mitigation as integral with repair and recovery efforts

Goal 4: Promote economic vitality in Bergen County and its 70 constituent municipalities

Objectives

- a. Partner with the private sector - small and large businesses - to promote hazard mitigation as integral to standard business practices
- b. Educate businesses and community members regarding how economic vitality may be impacted by potential hazards and how the impacts on the business sector may impact the local citizens
- c. Partner with the private sector to create programs and processes whereby employees may be an active, powerful resource for disaster preparedness and mitigation both on the job and at home

Goal 5: Preserve the natural environment and promote human health

Objectives

- a. Analyze the secondary effects of potential disasters on human and environmental health, such as mold growth, hazardous material spills, chemical releases by fire/flood/ice, materials used for cleanup and recovery, etc., and develop projects to mitigate potential impacts
- b. Convert all materials and chemicals used by government agencies in development, operations, maintenance, etc., to environmentally benign and conservation friendly materials and chemicals, considering a balance of social, economic, and environmental accounting
- c. Decrease consumption of energy at the municipal and county level (petrochemical, electrical, etc.)
- d. Decrease greenhouse gas emissions at the municipal and county level to 1990 levels by the year 2010
- e. Conduct educational programs regarding all manner of environmental and human health awareness, including but not limited to, global warming, energy efficiency, carbon emissions, recycling and reuse

- f. Engage the public and private sectors in energy efficiency and carbon emission reduction programs such as blanketing water heaters, converting to compact florescent lighting, weather proofing, maintaining proper tire pressure, etc.

4.2 Identifying Mitigation Actions

Mitigation actions are activities designed to reduce or eliminate losses resulting from natural hazards. There are four primary types of mitigation actions that are represented in Bergen County's mitigation strategy, as represented in Table 4.1.

Table 4.1: Mitigation Action Types

Mitigation Action Type	Description	Examples
Local Plans and Regulations	Government, administrative, or regulatory actions or processes that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> ▪ Land use ordinances ▪ Comprehensive plans ▪ Subdivision regulations ▪ Building codes ▪ NFIP CRS ▪ Stormwater management regulations and plans ▪ Capital improvement programs
Structure and Infrastructure Projects	Actions that involve modification of existing buildings or structures to protect them or remove them from a hazard area. Applies to public or private structures, or critical facilities.	<ul style="list-style-type: none"> ▪ Acquisitions and elevations of structures in flood prone areas ▪ Flood walls and retaining walls ▪ Detention and retention structures ▪ Culverts ▪ Utility undergrounding
Natural Systems Protection	Actions that minimize hazard loss and also preserve or restore the functions of natural systems.	<ul style="list-style-type: none"> ▪ Sediment and erosion control ▪ Stream corridor restoration ▪ Forest management ▪ Wetland restoration and preservation
Education and Awareness Programs	Actions to inform and educate citizens, elected officials and property owners about hazards and potential ways to mitigate them.	<ul style="list-style-type: none"> ▪ Websites ▪ Real estate disclosure ▪ Mailings to residents in hazard-prone areas ▪ Radio and television ads
Energy Allocation for Critical Infrastructure*	Permanent, dual-fuel generators for critical infrastructure	<ul style="list-style-type: none"> ▪ Generators only

*Post Superstorm Sandy, FEMA has allowed the inclusion of generators as mitigation Energy Allocation for Critical Infrastructure. It should also be noted that preparedness and response actions are different from mitigation actions, and do not meet the federal mitigation planning requirements for identifying mitigation actions. Preparedness and response actions are those actions taken to prepare for or respond to a hazard event. Purchasing equipment for municipal departments is one example of a preparedness action that does not qualify as a mitigation action.

The Planning Team worked with each Bergen municipality to brainstorm potential new mitigation actions for inclusion in the Plan. The Risk Assessment included critical facility worksheets that were completed for all critical facilities within each Bergen County jurisdiction. Each community also had to consider what capabilities it currently has to implement any mitigation actions, and where mitigation can be improved, or where it can be incorporated in to the day-to-day business of each municipality.

The Planning Team utilized the “Action Worksheet” provided by FEMA in order to gather detailed information about each proposed mitigation action. The sheets were sent to every municipality as an interactive PDF, which allows for online completion and submission. The learning curve was quite steep for a significant portion of the participating municipalities, but the Planning Team believes it was a worthwhile approach that should be continued for the next five-year Plan update. The “Action Worksheet” allowed for each action to be evaluated on its own by the person filling out the form. Table 4.2 details the information requested for each new mitigation action.

Table 4.2: Action Worksheet

Action Worksheet	
Your plan name	
Your community name	
Community action number	
Assessing the Risk	
Hazard(s) addressed	
Risk finding	
Describing the Action	
Action category	
Action type	
Action description	
Existing, future &/or NA	
Evaluating the Action	
Cost estimate	
Costs High/Med/Low- Use action evaluation criteria	
Benefits High/Med/Low-Use action evaluation criteria	
Technical	
Political	
Legal	
Environmental	
Social	
Administrative capability	
Local champion	
Other community objectives	
Implementing the Action	
Priority	
Local planning mechanism	
Responsible party	

Potential funding sources	
Time line	
Reporting on Progress	
Action progress status	

An explanation of the evaluation criteria was provided to each participating jurisdiction to facilitate the evaluation of the mitigation actions. Bergen County is using a combination of the STAPLEE criteria and several qualitative factors, such as a comparison costs and benefits. A benefit cost review is a required component of the mitigation strategy, and a planning level review has been undertaken of each action's costs versus benefits. Estimates of actual costs are also included where known.

Table 4.3: Action Evaluation Criteria

Cost Effectiveness	
Cost estimate	<i>- How much do you estimate it will cost to implement the action?</i>
Costs- Please choose one per mitigation action	<i>High-Existing funding levels are not adequate to cover the costs of the proposed project, and implementation would require an increase in revenue through an alternative source (e.g., bonds, grants, and fee increases).</i>
	<i>Medium- The project could be implemented with existing funding, but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.</i>
	<i>Low- The project could be funded under the existing budget. The project is part of or can be part of an existing, ongoing, program.</i>
Benefits- Please choose one per mitigation action	<i>High- Project will have an immediate impact on the reduction of risk exposure to life and property.</i>
	<i>Medium- Project will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.</i>
	<i>Low- Long-term benefits of the project are difficult to quantify in the short term.</i>
Other Factors	
Technical	<i>- Is the mitigation action technically feasible? - Eliminate actions that are not.</i>
Political	<i>- Is there overall public support for the mitigation action? - Is there the political will to support it?</i>
Legal	<i>- Does the community have the authority to implement the action?</i>
Environmental	<i>- What are the potential environmental impacts of the action? - Will it comply with environmental regulations?</i>
Social	<i>- Will the proposed action affect one segment of the population? - Will it disrupt established neighborhoods, break up voting districts or cause the relocation of lower income people?</i>
Administrative capability	<i>- Does the community have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?</i>

Local champion	- Is there a strong advocate for the action among local departments and agencies that will support its implementation?
Other community objectives	- Does the action further other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation?

4.3 Prioritization of New Mitigation Actions

Bergen County is utilizing the following prioritization criteria:

High Priority: A project that meets multiple plan goals, benefits exceed costs, has funding secured under existing programs or authorizations, or is grant-eligible, and can be completed in 1-5 years once project is funded.

Medium Priority: A project that meets at least one plan goal, benefits exceed costs, funding has not been secured and would require a special funding authorization under existing programs, grant eligibility is questionable, and can be completed in 1-5 years once project is funded.

Low Priority: A project that will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, and project is not grant-eligible and/or timeframe for completion is long-term (5-10 years).

Due to the large volume of mitigation actions submitted by Bergen County municipalities, the full list can be found in **Appendix H**.

4.4 2013 Proposed Mitigation Actions

Included in this Plan update are all of the 2013 mitigation actions submitted by the Bergen municipalities post Superstorm Sandy via Letters of Intent (LOI). The LOI is the first step in the selection of mitigation projects under HMGP and HMA. Depending upon the type of mitigation action, different funding sources may be available.

Table 4.4: Eligible Mitigation Activities

Eligible Mitigation Activities	HMGP	PDM	FMA	RFC	SRL
1. Mitigation Projects	X	X	X	X	X
Property Acquisition and Structure Demolition or Relocation and Elevation	X	X	X	X	X
Structure Elevation	X	X	X	X	X
Mitigation Reconstruction					X
Dry Floodproofing of Historic Residential Structures	X	X	X	X	X
Dry Floodproofing of Non-Residential Structures	X	X	X	X	
Minor Localized Flood Reduction Projects	X	X	X	X	X
Structural Retrofitting of Existing Buildings	X	X			
Non-Structural Retrofitting of Existing Buildings	X	X			
Safe Room Construction	X	X			
Infrastructure Retrofit	X	X			
Soil Stabilization	X	X			

Wildfire Mitigation	X	X			
Post Disaster Code Enforcement	X				
5% Initiative Projects	X				
2. Hazard Mitigation Planning	X	X	X		
3. Management Costs	X	X	X	X	X

A summary of the 2013 Letters of Intent submitted to Bergen County post Hurricane Sandy is provided in Table 4.5. Copies of the Letters of Intent can be found in **Appendix F**.

Table 4.5: Bergen County LOI's Submitted

Applicant Name	Proj S#	Type	Title	Amount
Bergen Community College	421	Generator	Bergen Community College: Generators for County Shelter	\$250,000.00
Bergen County	434	Generator	Bergen County Generator: Police Department	\$525,000.00
Bergen County	741	Generator	Bergen County Generator: Administrative	\$1,600,000.00
Bergen County	743	Generator	Bergen County Generator: DPW Complex	\$325,000.00
Bergen County	744	Generator	Bergen County Generator: Law & Public Safety	\$200,000.00
Bergen County	745	Generator	Bergen County: New Agency Building	\$725,000.00
Bergen County	746	Generator	Bergen County Generator: New Maintenance Garage	\$75,000.00
Bergen County	747	Generator	Bergen County Generator: Special	\$125,000.00
Bergen County	750	Generator	Bergen County Generator: Prosecutors Office	\$625,000.00
Bergen County	431	Drainage	Bergen County Department of Public Works Flood Control - Flood Protection for Tide Gate Controls	\$300,000.00
Bergen County	436	Planning	Bergen County Strategic Planning Study for Systematic Mitigation Planning	\$100,000.00
Bergen County	1609	Elev Other	Bergen County--Saddle Brook River Bridge Replacements	\$18,700,000.00
Bergen County	1997	Elev Other	Bergen County - Marcellus Street Bridge Improvements	\$170,855.00
Bergen County Department of Public Works	1602	Drainage	DPW - Flood Protection for Tide Gate Controls	\$300,000.00
Bergen County Department of Public Works	1607	Generator	Bergen County DPW - Emergency Power Supply for Traffic Signals	\$1,593,600.00
Bergen County Technical And Special Services	422	Generator	Bergen County Technical Schools: Generators for Emergency Shelter	\$117,000.00
Bergen County Technical And Special Services	424	Planning	Bergen County: Strategic Planning Study for Systematic Mitigation Planning	\$100,000.00
Bergen County Utilities Authority	426	Generator	Bergen County Utilities Authority (BCUA) Multiple Mitigation Measures	\$30,000,000.00
Bergenfield Boro	468	ANS	Outdoor Warning System	\$215,000.00
Bogota Boro	266	Drainage	Bogota Flood Control (Drainage Pipe)	\$2,500,000.00
Bogota Boro	267	Drainage	Bogota Flood Control	\$2,000,000.00
Bogota Boro	469	Drainage	Bogota Project Type Selection of "Other" (No Description Provided)	\$2,000,000.00
Carlstadt Boro	268	Drainage	Carlstadt Flood Control (Outfall Check Valves)	\$1,102,000.00

Carlstadt Boro	269	Drainage	Carlstadt Flood Control	\$17,635,000.00
Carlstadt Boro	470	Generator	Carlstadt Generators for Shelters	\$2,622,000.00
Carlstadt Boro	1681	Generator	Carlstadt Town Hall Generators	\$675,000.00
Carlstadt Boro	1682	Generator	Carlstadt Firehouse Generator	\$225,000.00
Carlstadt Boro	1683	Generator	Carlstadt Portable and Towable Generators	\$610,200.00
Carlstadt Sewerage Authority	278	Drainage	Carlstadt Sewerage Authority (Sanitary Collection and Pumping Station Improvements)	\$1,500,000.00
Cliffside Park Boro	480	Generator	Cliffside Park	\$115,000.00
Cliffside Park Boro	482	Generator	Cliffside Park Generator at Manhattan Place Sewer Pump Station	\$55,000.00
Closter Boro	484	Generator	Closter Library and Senior Center Generator	\$120,000.00
Closter Boro	1685	Generator	Closter Public Works Generator	\$165,000.00
Cresskill Boro	1249	Generator	Generator for Shelters/Weather Detection	\$225,000.00
Demarest Public School	486	Generator	Northern Valley Regional High School (NVRHS) Generator	\$385,000.00
Dumont Boro	488	Generator	Dumont Generator	\$76,000.00
East Rutherford Boro	280	Floodproofing	East Rutherford Floodproofing of Residential Structure	\$40,000.00
East Rutherford Boro	281	Drainage	East Rutherford Flood Control	\$2,900,000.00
East Rutherford Boro	498	Generator	East Rutherford Pump Station Generator	\$167,333.00
East Rutherford Boro	1688	Generator	East Rutherford Civic Center Generator	\$167,300.00
East Rutherford Boro	1689	Generator	East Rutherford Fire Station #2 Generator	\$167,333.00
Edgewater Boro	499	Generator	Edgewater Generator for Pump station #4	\$90,000.00
Edgewater Boro	500	Generator	Edgewater Generator for Fire Company #1	\$90,000.00
Edgewater Boro	501	Drainage	Edgewater Flood Doors - Marina	\$26,550.00
Edgewater Boro	502	Drainage	Edgewater Flood Doors: Community Center	\$17,250.00
Edgewater Boro	503	Drainage	Edgewater Flood Doors: Borough Hall	\$30,300.00
Edgewater Boro	504	Drainage	Edgewater Flood Control: River Road	\$10,000,000.00
Edgewater Boro	1392	Generator	Edgewater Generator - Pump Station #4	\$120,000.00
Edgewater Boro	1393	Generator	Edgewater - Generator - Fire Company #1	\$120,000.00
Edgewater Boro	1420	Floodproofing	(UPDATE) Edgewater - Flood Control - Marina Flood Doors	\$35,400.00
Edgewater Boro	1421	Floodproofing	(UPDATED) Edgewater - Flood Control- Borough Hall Flood Doors	\$40,400.00
Edgewater Boro	1422	Floodproofing	(UPDATED) Edgewater - Flood Control - Community Center Flood Doors	\$23,000.00
Edgewater Boro School District	505	Generator	Edgewater Board of Education - Generator : George Washington School	\$480,000.00
Edgewater Boro School District	506	Generator	Edgewater Board of Education: Generator - Eleanor Van Gelder School	\$530,000.00
Edgewater Boro School District	1326	Generator	Edgewater Board of Education - Generator - George Washington School	\$480,000.00
Edgewater Boro School District	1327	Generator	Edgewater Board of Education - Eleanor Van Gelder	\$530,000.00
Elmwood Park Boro	508	Drainage	Elmwood Park Flood Control: Dredging of Fleischers Brook	\$250,000.00
Elmwood Park Boro	509	Drainage	Elmwood Park Flood Control: Pump Station #6 Improvements	\$400,000.00

Emerson Boro	511	Generator	Emerson Generator - Shelter at 20 Palisade Ave	\$45,000.00
Emerson Boro	512	Generator	Emerson Generator - Fire Dept	\$100,000.00
Emerson Boro	513	Drainage	Emerson Flood Control: Localized Flood Reduction on Forest Ave (County Rd 0013)	\$160,000.00
Englewood City	514	Generator	Englewood Generator(s)	\$110,000.00
Englewood Cliffs Boro	515	Generator	Englewood Cliffs Generator	\$90,000.00
Fair Lawn Boro	518	Generator	Fair Lawn Generators	\$250,000.00
Fair Lawn Boro	519	Generator	Fair Lawn Standby Emergency Generators	\$400,000.00
Fair Lawn Boro	520	Drainage	Fair Lawn Sump Pump	\$18,000.00
Fair Lawn Boro	522	Drainage	Fair Lawn Flood Control: Installation of Flood Control Valves	\$200,000.00
Fairview Boro	524	Generator	Fairview Generator	\$150,000.00
Fairview Boro	526	Drainage	Fairview Flood Control: DPW Facility	\$500,000.00
Fort Lee Board of Ed	1603	Generator	Fort Lee Public Schools - Generator	\$1,000,000.00
Franklin Lakes Boro	527	Other	Franklin Lakes Equipment - Monitoring Equipment for Class 1 Dam	\$300,000.00
Garfield City	151	Acq Demo Bldg	Garfield Acquisition of 6 Properties	\$3,100,000.00
Garfield City	753	Generator	Garfield Generator: Fire Co #5	\$75,000.00
Garfield City	755	Generator	Garfield Generator - Fire Co 1	\$75,000.00
Garfield City	757	Generator	Garfield Generator - Fire Co 3	\$75,000.00
Garfield City	758	Generator	Garfield Generator - Recreational Center (Emergency Shelter)	\$100,000.00
Garfield City	1335	Generator	Garfield -Generator - DPW	\$175,000.00
Glen Rock Boro	813	Drainage	Glen Rock Flood Control - Pump Replacement	\$202,500.00
Hackensack City	816	Generator	Hackensack Generators - Public Safety Bldgs, Shelters, & Pump House	\$575,000.00
Hackensack City	882	Drainage	Hackensack Flood Control: Dredge Coles Brook & Riser Ditch	\$456,000.00
Hackensack City	886	Drainage	Hackensack Flood Control - Storm Water	\$250,000.00
Hackensack City	1710	Generator	Hackensack Police and Fire Generator	\$236,000.00
Hackensack City	1711	Generator	Hackensack Public Works Generator	\$18,000.00
Hackensack City	1712	Generator	Hackensack	\$25,000.00
Hackensack Housing Authority	895	Generator	Hackensack Housing Authority Generator	\$60,000.00
Harrington Park Boro	898	Generator	Harrington Park Generators - Mitigation Activities & Public Bldgs	\$255,600.00
Harrington Park Boro	951	Drainage	Harrington Park Flood Control - Multiple	\$4,226,000.00
Hasbrouck Heights Boro	905	Generator	Hasbrouck Heights	\$195,000.00
Haworth Boro	906	Generator	Haworth Generator	\$58,500.00
Haworth Boro	908	ANS	Haworth Lightning Detection System	\$45,750.00
Hillsdale Boro	152	Acq Demo Bldg	Hillsdale Acquisition of 17 Structures	\$7,735,400.00
Hillsdale Boro	912	Generator	Hillsdale Generator	\$60,000.00
Ho-Ho-Kus Boro	915	Drainage	Ho-Ho-Kus Flood Control	\$25,500.00
Leonia Boro	918	Generator	Leonia Generators - Recreation Center	\$30,000.00
Leonia Boro	1694	Generator	Leonia Public Works Generator	\$30,000.00

Little Ferry Boro	920	Generator	Generator for Main Street Pump Station	\$150,000.00
Little Ferry Boro	921	Generator	Generator for Willow Lake Pump Station	\$150,000.00
Little Ferry Boro	922	Generator	Generator for Memorial School	\$1,200,000.00
Little Ferry Boro	923	Drainage	Installation of Tide Gate at Newark Bay	\$3,000,000,000.00
Little Ferry Boro	924	Generator	Generator for Police Dept/ Borough Hall	\$700,000.00
Little Ferry Boro	948	Drainage	Installation of an automatic self-cleaning grating system to the Losen Slote Pump Station	\$400,000.00
Little Ferry Boro	925	Drainage	Willow Lake Dredging & Expansion	\$1,500,000.00
Little Ferry Boro	927	Drainage	Soil Stabilization at First Aid Station Bldg	\$150,000.00
Little Ferry Boro	928	Drainage	Cleaning and de-snagging of drainage ditches.	\$4,500,000.00
Little Ferry Boro	930	Drainage	Main Street Corridor Storm Water System Upgrades	\$500,000.00
Little Ferry Boro	933	Drainage	New Construction of Storm Water Pump Station and Check Valve	\$2,000,000.00
Little Ferry Boro	934	Drainage	Install drainage at Robby Road Park	\$150,000.00
Little Ferry Boro	1342	Drainage	Install drainage at Robby Rd Park	\$125,000.00
Lodi Boro	937	Generator	Lodi - Generators for Sewer Pump Stations	\$125,000.00
Lodi Boro	939	Generator	Lodi Generator & Heater/AC Unit for EOC & Police Station	\$120,000.00
Lodi Boro	943	Generator	Lodi Generators - 3 Fire Stations	\$120,000.00
Lodi Boro	945	Elev Other	Lodi - Utilities Elevation at Residential	\$15,000.00
Lodi Boro	1837	Generator	Energy Allocation - Generators	\$245,000.00
Lyndhurst Township	164	Acq Demo Bldg	Lyndhurst Acquisition of 4 Structures	\$1,400,000.00
Lyndhurst Township	241	Elev Building	Lyndhurst Elevation of Residences along the Passaic River	\$3,520,000.00
Lyndhurst Township	283	Drainage	Lyndhurst Improvements to Pumping Stations #1, 2, & 4	\$2,884,840.00
Lyndhurst Township	285	Drainage	Lyndhurst Flood Control (Riverbank Improvements along the Passaic River)	\$60,000,000.00
Lyndhurst Township	288	Drainage	Lyndhurst Flood Control (Backflow preventers at existing stormwater outfall locations)	\$1,200,000.00
Lyndhurst Township	977	Generator	Lyndhurst Generator - Shelter	\$68,470.00
Lyndhurst Township	982	Elev Other	Lyndhurst Elevation of Generators - Sloan-Kettering Cancer	\$650,000.00
Mahwah Township	147	Acq Demo Bldg	Mahwah Acquisition of 18 Structures	\$5,500,000.00
Mahwah Township	149	Acq Demo Bldg	Mahwah Acquisition of 5 Structures	\$1,800,000.00
Mahwah Township	244	Elev Building	Mahwah Elevation of 1 Structure	\$175,000.00
Mahwah Township	993	Generator	Mahwah Township Hall Generators	\$93,000.00
Mahwah Township	1002	Drainage	Mahwah - Flood Control (Multiple Projects)	\$5,930,000.00
Mahwah Township	1426	Drainage	(UPDATED) Mahwah - Flood Control - Multiple Projects	\$13,430,000.00
Mahwah Township	1720	Generator	Mahwah Township Well Generators	\$93,000.00
Mahwah Township	1838	Generator	Energy Allocation - Generators	\$186,000.00
Mahwah Township	2003	Generator	Mahwah Township - Generator for Administration Building (Shelter Portion)	\$93,000.00
Maywood Boro	1005	Generator	Maywood Towable Generators	\$170,000.00
Maywood Boro	1718	Generator	Maywood Senior Center Generator	\$75,000.00

Maywood Boro	1719	Generator	Maywood Public Works Generator	\$75,000.00
Midland Park Board of	1605	Generator	Midland Park of Education - Generator	\$60,000.00
Midland Park Boro	1012	Generator	Midland Park Generator	\$40,000.00
Montvale Boro	1013	Generator	Montvale Generator	\$385,000.00
Moonachie Boro	245	Elev Building	Moonachie Elevation of Municipal Building	\$4,500,000.00
Moonachie Boro	1014	Generator	Moonachie Generator - Lincoln Street	\$250,000.00
Moonachie Boro	1015	Elev Other	Moonachie - Elevation of Moonachie Rd	\$150,000.00
Moonachie Boro	1016	Elev Other	Moonachie - Elevation of Mechanicals	\$125,000.00
Moonachie Boro	1017	Elev Other	Moonachie Elevation of Fire House's Electrical Infrastructure	\$50,000.00
Moonachie Boro	1368	Elev Other	Moonachie- Elevation of Boilers	\$500,000.00
Moonachie Boro	1019	Drainage	Moonachie Flood Control - Town-Wide Dredging Program	\$4,300,000.00
Moonachie Boro	1020	Drainage	Moonachie Flood Control - Berm Construction	\$1,300,000.00
New Milford Boro	168	Acq Demo	New Milford Acquisition/Elevation of 37	\$12,500,000.00
New Milford Boro	248	Elev Building	New Milford Elevation/Acquisition of 37	\$12,500,000.00
New Milford Boro	1021	Drainage	New Milford Flood Control - Hirschfeld Brook Flood Control Project	\$1,700,000.00
North Arlington Boro	1022	Drainage	North Arlington - Flood Control - Backflow Preventers	\$2,178,000.00
North Arlington Boro	1419	Drainage	North Arlington - Flood Control - Drainage System Improvements	\$0.00
North Arlington Boro	1023	Drainage	North Arlington - Generator - Clayton Block Pumping Station	\$68,984.00
North Arlington Boro	1133	Generator	North Arlington Generator - Eagles Fire	\$45,365.00
North Arlington Boro	1136	Generator	North Arlington - Generator - EMS Building	\$45,365.00
North Arlington Boro	1138	Generator	North Arlington - Generator - Police	\$85,885.00
North Arlington Boro	1139	Generator	North Arlington - Generator - DPW	\$43,365.00
North Arlington Boro	1418	Drainage	North Arlington-Flood Control- Flood Wall	\$1,748,175.00
North Arlington Boro	1690	Elev Other	North Arlington Disposal Road Main Breaker Replacement	\$60,000.00
North Arlington Boro	1691	Elev Other	North Arlington Disposal Road Pump Station Protection/Relocation	\$60,000.00
Northvale Boro	1141	Generator	Northvale - Generator- Fire Department	\$30,000.00
Northvale Boro	1144	Generator	Northvale - Generator - Ambulance Corps	\$30,000.00
Norwood Boro	1153	Generator	Norwood - Portable Generators - Multiple	\$395,000.00
Norwood Boro	1156	Generator	Norwood Permanent Generators - Multiple	\$320,000.00
Oakland Boro	1375	Generator	Oakland - Generators	\$62,000.00
Oakland Boro	1727	Generator	Oakland Borough Hall Generator	\$58,000.00
Oakland Boro	1728	Generator	Oakland Senior Center Generator	\$57,000.00
Old Tappan Boro	1184	Generator	Old Tappan Generators - Police Dept & DPW	\$150,000.00
Paramus Boro	1185	Generator	Paramus Generators	\$25,000.00
Paramus Boro	1722	Generator	Paramus Borough Hall Generator	\$75,000.00
Ramsey Boro	1186	Generator	Ramsey Generators	\$775,000.00
Ramsey Boro	1382	Drainage	Ramsey Flood Control - Crystal Spring Lake Dam Spillway and Gate Valve	\$1,000,000.00

Ridgefield Boro	1187	Generator	Ridgefield Generator - DPW	\$150,000.00
Ridgefield Boro	1377	Generator	Ridgefield Ambulance Squad and Firehouse Generators	\$225,000.00
Ridgefield Boro	1725	Generator	Ridgefield Community Center Generator	\$150,000.00
Ridgefield Boro	1726	Generator	Ridgefield Public Works Generator	\$150,000.00
Ridgefield Park Village	1189	Generator	Ridgefield Park Generators - Multiple	\$120,000.00
Ridgefield Park Village	1194	Drainage	Ridgefield Park - Flood Control - Multiple	\$140,000.00
Ridgefield Park Village	1723	Generator	Ridgefield Park Shelter	\$140,000.00
Ridgefield Park Village	1724	Generator	Ridgefield Park Public Works Generator	\$140,000.00
Ridgewood Village	1241	Generator	Ridgewood Generators - Multiple	\$1,750,000.00
River Edge Boro	1195	Generator	River Edge Generator	\$50,000.00
Rochelle Park Township	175	Acq Demo	Rochelle Park Acquisition of Postal Facility	\$1,500,000.00
Rochelle Park Township	1196	Generator	Rochelle Park - Generator - Midland Park	\$34,000.00
Rochelle Park Township	1198	Wind Retrofit	Rochelle Park Retrofit	\$14,000.00
Rockleigh Boro	1242	Generator	Rockleigh Generator & Shower	\$246,000.00
Rutherford Boro	1247	Elev Other	Rutherford Elevation of Road	\$3,000,000.00
Saddle Brook Township	185	Acq Demo	Saddle Brook Acquisition of 8 Structures	\$3,000,000.00
Saddle Brook Township	1380	Generator	Saddle Brook Shelter Generator	\$87,500.00
Saddle Brook Township	1381	ANS	Warning System	\$60,000.00
Saddle Brook Township	1721	Generator	Saddle Brook Town Hall Generator	\$58,333.00
Saddle River Boro	1306	Generator	Saddle River Generator	\$75,000.00
South Hackensack Township	249	Elev Other	South Hackensack Elevation of Sewage Pump Station	\$1,812,000.00
South Hackensack Township	448	Elev Other	South Hackensack: Replace/Elevate of Saddle River Bridge	\$5,980,000.00
South Hackensack Township	1307	Generator	South Hackensack Generators	\$510,000.00
South Hackensack Township	1379	Drainage	South Hackensack Flood Control - Drainage Ditch Dredging Program	\$2,800,000.00
South Hackensack Township	1378	Drainage	South Hackensack Flood Reduction Project	\$2,500,000.00
Spectrum Group Living Homes	1604	Generator	Spectrum for Living Group Homes - Generators (Bergen County)	\$132,000.00
Tenafly Boro	1309	Generator	Tenafly - Generator - Mount Carmel School	\$60,000.00
Tenafly Boro	1376	Generator	Tenafly - Generators for Critical Facilities	\$1,090,000.00
Upper Saddle River Boro	1310	Generator	Upper Saddle River Generators	\$60,000.00
Upper Saddle River Boro	1693	Generator	Upper Saddle River Borough Hall Generator	\$60,000.00
Wallington Boro	1311	Planning	Wallington Planning - Community Resiliency	\$350,000.00
Wallington Boro	1312	Generator	Wallington Generator - Civic Center	\$330,000.00
Wallington Boro	1313	Generator	Wallington Generator - Sewer Pump Currie	\$110,000.00
Wallington Boro	1314	Generator	Wallington Generator - Sewer Pump - Spring	\$110,000.00
Washington Township (Bergen)	1584	Generator	Washington - Generators -Municipal and Road Building	\$100,000.00
Washington Township	1585	ANS	Warning Systems	\$75,000.00

Washington Township	1692	Generator	Washington Township Ambulance Building	\$50,000.00
Washington Township	1776	ANS	Portable Police Traffic Signs	\$75,000.00
Washington Township	1777	Generator	Portable Generator Light Towers	\$100,000.00
Washington Township	1883	Generator	Installation of Permanent Generator at Fire	\$64,900.00
Westwood Boro	1319	Generator	Westwood Generator - Borough Shelter	\$125,000.00
Woodcliff Lake Boro	1320	Generator	Woodcliff Lake - Police and Fire Generators	\$160,000.00
Woodcliff Lake Boro	1714	Generator	Woodcliff Lake Public Works and Borough Hall Generator	\$160,000.00
Woodcliff Lake Boro	1716	Generator	Woodcliff Lake Tice Senior Citizen Center Generator	\$80,000.00
Wood-Ridge Boro	416	Acq Relo	Wood-Ridge Acquisition/Relocation of DPW Facility	\$560,000.00
Wood-Ridge Boro	1321	Generator	Wood-Ridge - Generator- Pump Station at 10th St + Sussex Rd	\$31,021.00
Wood-Ridge Boro	1322	Generator	Wood-Ridge - Generator- Pump Station at E. Park and Anderson	\$35,695.00
Wood-Ridge Boro	1323	Generator	Wood-Ridge - Generator - Civic/Senior Center	\$63,935.00
Wyckoff Township	1324	Generator	Wyckoff - Generators	\$200,000.00
Wyckoff Township	1325	Drainage	Wyckoff - Flood Control - HoHoKus Brook	\$50,000.00
Wyckoff Township	1695	Generator	Wyckoff Police and Fire Hall Generator	\$500,000.00
Wyckoff Township	1696	Generator	Wyckoff Public Works Generator	\$75,000.00

4.5 Energy Allocation Awards

Jurisdictions that were recommended to receive energy allocations from NJOEM based on the 2013 LOI's are found in Table 4.6 below. Energy allocations are awarded for the purchase of permanent, dual-fuel generators for critical infrastructure only.

Table 4.6 Bergen County Energy Allocation Awards

Jurisdiction	Recommended Allocation
Bergen Community College	\$250,000
Bergen (County)	\$250,000
Bergen County Technical And Special Services	\$62,000
Bergen County Utilities Authority	\$250,000
Carlstadt Boro	\$75,000
Closter Borough	\$90,000
Cresskill Boro	\$100,000
Dumont Boro	\$75,000
Edgewater Boro	\$75,000
Emerson Boro	\$75,000
Fair Lawn Boro	\$250,000
Fairview Boro	\$75,000
Ridgefield Boro	\$75,000

River Edge Boro	\$50,000
City of Englewood	\$75,000
Cliffside Park Boro	\$75,000
East Rutherford	\$75,000
Englewood Cliffs Boro	\$75,000
Fair Lawn BOE	\$18,000
Fort Lee	\$75,000
City of Garfield	\$75,000
Hackensack City	\$75,000
Harrington Park Boro	\$75,000
Hasbrouck Heights Boro	\$45,000
Haworth Boro	\$75,000
Hillsdale Boro	\$60,000
Leonia Boro	\$60,000
Little Ferry Boro	\$75,000
Borough of Lodi	\$100,000
Lyndhurst Township	\$68,470
Mahwah Township	\$75,000
Maywood Boro	\$75,000
Midland Park Boro	\$40,000
Midland Park BOE	\$60,000
Montvale Boro	\$100,000
Moonachie Boro	\$75,000
North Arlington Boro	\$75,000
Demarest Public School-NVRHS	\$75,000
Northvale Boro	\$60,000
Norwood Boro	\$75,000
Oakland Boro	\$75,000
Old Tappan Boro	\$75,000
Paramus Boro	\$75,000
Ramsey Boro	\$75,000
Ridgewood Village	\$75,000
Rochelle Park Township	\$34,000
Saddle Brook Township	\$75,000
Saddle River Boro	\$75,000
Tenafly Boro	\$100,000
Upper Saddle River Boro	\$75,000
Upper Saddle River BOE	\$75,000
Ridgefield Park Village	\$75,000
Wallington Boro	\$75,000
Washington Township	\$75,000
Westwood Boro	\$100,000
Woodcliff Lake Boro	\$100,000

Wood-Ridge Boro	\$75,000
Wyckoff Township	\$75,000

4.6 Mitigation Strategy

The mitigation strategy presented in this chapter presents the results of applying the prioritization methodology presented to the set of mitigation actions identified by Bergen County and each participating jurisdiction, and includes the following prioritization parameters:

- Number of goals met by the initiative
- Benefits of the project (high, medium, or low)
- Cost of the project (high, medium, or low)
- Do the benefits equal or exceed the costs?
- Is the project grant-eligible?
- Can the project be funded under existing programs and budgets?
- Priority (high, medium, or low)

This chapter presents the County's and each participating jurisdiction's mitigation action implementation strategy including:

- Mitigation actions for individual and multiple hazards
- Mitigation goals supported by each action.
- Implementation priority
- Potential funding sources for the mitigation action (grant programs, current operating budgets or funding, or the agency or jurisdiction that will supply the funding; additional potential funding resources are identified)
- Estimated budget for the mitigation action
- Time estimated to implement and complete the mitigation action

Current funding is not identified for all of the mitigation actions presented. Due to funding constraints at the federal, state, and local levels, there are limited resources to take on new responsibilities or projects. The implementation of these mitigation actions is dependent on the approval of the local elected governing body and the ability of the community to obtain funding from local or outside sources. Where such actions are high priorities, the community will work together with NJOEM, FEMA and other Federal, State and County agencies to secure funds.

Each Bergen County jurisdiction participating in this plan Update provided the information on updates to and status of the previous mitigation strategy, as well as any new mitigation actions that have not been accounted for in post-Sandy Letters of Intent. These mitigation actions are found in **Appendices H and I**, respectively.

Specific mitigation actions included in the Bergen County Mitigation Strategy included:

- Those mitigation actions being carried forward from the 2008 plan;
- Those specifically identified by the jurisdiction during the Update planning process;
- Those that became evident through the updated hazard profiling and risk/vulnerability assessment effort.

In general, mitigation actions ranked as high priorities will be addressed first. However, medium or even low priority mitigation actions will be considered for concurrent implementation. Therefore, the ranking levels should be considered as a first-cut, preliminary ranking and will evolve based on input from Bergen County, individual Bergen municipalities, the public, NJOEM, and FEMA as the Plan is implemented.

County-Wide Mitigation Strategies

All municipalities were asked to thoroughly review several “general” initiatives, and include, amend or delete them as they found appropriate for their jurisdiction.

All municipalities in Bergen County are in support of acquisitions and elevations of substantially damaged structures as valid mitigation strategies.

All municipalities in Bergen County recognize the need for redundancy in their critical facilities and would support actions to introduce a backup power supply, flood proofing, and structural modifications to elevate their electrical systems.

185 new projects were identified within Bergen County through the planning process for this Update. All of the actions from the 2008 Plan were revisited to ascertain the status of implementation. Of the 210 mitigation actions from the 2008 Plan, 59 were implemented and 151 were not. Reasons for inaction varied, but lack of funding was the reason most often provided.

Appendix H contains a status report on all mitigation actions from the 2008 Plan. Appendix I contains mitigation actions new to this Plan update.