



9.35 Borough of Rockaway

This section presents the jurisdictional annex for the Borough of Rockaway.

9.35.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan’s primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Name: Chief Douglas Scheer Address: 33 Maple Avenue Rockaway NJ 07866 Phone: 973-627-2478 E-mail: dscheer@rockawayboropd.org	Name: Sgt. Conrad Pepperman Address: 33 Maple Avenue Rockaway NJ 07866 Phone: 973-627-1851 E-mail: cpepperman@rockawayboropd.org

9.35.2 Municipal Profile

This section provides a summary of the community.

Population

According to the U.S. Census, the 2010 population for the Borough of Rockaway was 6,438.

Location

According to the U.S. Census, the Borough has a total area of 2.12 square miles, of which 2.07 square miles is land and 0.05 square miles is water. The Borough is located in central Morris County and is adjacent to Denville on its eastern and north-eastern border and Rockaway Township to the north, west, and south.

Brief History

Rockaway Borough has a rich history in Morris County. Prior to the Borough’s incorporation, it was known as Rockaway Village and located in Rockaway Township. The first settlers came to Rockaway Village in the early 1700s. By 1760, trade and manufacturing came to the Village in the form of multiple mills, mines, and roadways. During the Revolutionary War Rockaway Village became a stronghold for revolutionary activity due to its status as an iron manufacturing hub. Multiple Revolutionary War era houses are still standing in the Borough today. By 1870, Rockaway Village was became regionally connected through the establishment of three railroads: the Mt. Hope Mineral Tramway, the Hibernia Railroad, and the Morris & Essex Railroad. By 1889, the population of Rockaway Village reached 1,052 (Robinson 1994). Rockaway Village was officially incorporated as Rockaway Borough on June 19, 1894 (Snyder 2004).

Governing Body Format

The Borough of Rockaway government consists of an elected mayor and six elected council members. The mayor serves a four-year term, and each year two council members are elected to three-year terms.

Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in this annex which illustrates the hazard areas along with the location of potential new development.





Table 9.35-1. Growth and Development

Property or Development Name	Type (e.g., Res., Comm.)	# of Units/ Structures	Location (Address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
Recent Development from 2010 to present					
Woodstone Apartments	Comm.	12 apartments/ 1 building	Block 27.03, Lots 6 and 6.01	None	Six one-bedroom and six two-bedroom apartments. Construction just beginning
Known or Anticipated Development in the Next Five (5) Years					
14 Stickle Ave.	Res.	1	Block 4, Lot 5.02	NEHRP: D	Single family house. Construction not yet begun.
Broad St.	Res.	3	Block 22, Lots 3.01, 3.02, 3.03	None	Three single family-houses. Construction not yet begun.

* Only location-specific hazard zones or vulnerabilities identified.

9.35.3 Natural Hazard Event History Specific to the Municipality

Morris County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.35-2. Hazard Event History

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
August 26 – September 5, 2011	Hurricane Irene	EM-3332 DR-4021	Yes Yes	Life Safety efforts made by the Borough included the evacuation of more than 70 people from their residences. The Borough experienced heavy flooding in the areas of Brach Street, Franklin Avenue, Ogden Avenue, and Drake Avenue. Water pumps were down for approximately 24 hours. Residential and commercial properties throughout the Borough had flooded basements and water which entered the first floor of the property. The Borough’s Police Department and Department of Public Works incurred overtime costs. The Borough requested \$25,123.30 in reimbursement from the State of New Jersey.
October 29, 2011	Severe Storm	DR-4048	Yes	Downed live wires along Rockaway Avenue and Hill Street caused these roads to be closed. Properties experiencing power outages were without power for 5 days. The Borough rented a generator to assist in the continual running of well pumps. The Borough’s Police Department and Department of Public Works incurred overtime costs.
October 26 – November 8, 2012	Hurricane Sandy	EM-3354 DR-4086	Yes Yes	The Borough requested \$73,870.83 in reimbursement from the State of New Jersey. The Borough lost power to Town Hall, Police, Fire, and all gas stations. Between the power outages, debris to be cleared up and maintaining civility during stressful times with no power in the community, the Borough exhausted our resources and manpower.





9.35.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Borough of Rockaway. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Borough of Rockaway.

Table 9.35-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Drought	Damage estimate not available	Frequent	27	Medium
Dam Failure	Damage estimate not available	Occasional	24	Medium
Earthquake	500-year MRP: \$2,318,992 2,500-year MRP: \$37,293,813	Occasional	32	High
Extreme Temperature	Damage estimate not available	Frequent	27	Medium
Flood	1% Annual Chance: \$7,107,239	Frequent	18	Medium
Geological Hazards	Exposed to Class A and Class B: \$0	Occasional	12	Low
Severe Storm	100-Year MRP: \$813,935 500-year MRP: \$4,687,196 Annualized: \$53,085	Frequent	48	High
Winter Storm	1% GBS: \$18,041,541 5% GBS: \$90,207,704	Frequent	54	High
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$0	Rare	6	Low
Disease Outbreak	Damage estimate not available	Frequent	36	High
Hazardous Materials	Damage estimate not available	Frequent	36	High
Infestation	Damage estimate not available	Frequent	18	Medium

Notes:

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. The valuation of general building stock and loss estimates was based on custom inventory for the municipality.
High = Total hazard priority risk ranking score of 31 and above
Medium = Total hazard priority risk ranking of 20-30+
Low = Total hazard risk ranking below 20
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- d. Loss estimates for the flood and earthquake hazards represent both structure and contents.
- e. The HAZUS-MH earthquake model results are reported by Census Tract.

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Borough of Rockaway.





Table 9.35-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Borough of Rockaway	48	69	\$1,441,107.11	5	3	17

Source: FEMA Region 2, 2014

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 3, and are current as of 9/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 9/30/14.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.

Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1- and 0.2-percent annual chance flood events.

Table 9.35-5. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
McWilliams Forge Co. Inc	Hazardous Material	X	X	-	-	-
Weldon Asphalt	Potable Water Facility	X	X	1.25	-	-

Source: HAZUS-MH 2.1

Note (1): HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Note (2): In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.1



Other Vulnerabilities Identified

According to the 2010 preliminary FEMA Flood Insurance Study (FIS) for Morris County, the history of flooding along the streams within Rockaway Borough indicates that flooding typically takes place during the summer and fall months and is almost associated with thunderstorms and hurricanes. The majority of flooding in the Borough occurs along the Rockaway River. Those areas affected include portions of Franklin Drive between East Main Street and Rockaway Avenue, the eastern end to Nicholas Drive, and the industrial areas along the upstream corporate limits within the Township of Denville. Flooding also occurs along the entire lengths of Beaver and Fox Brooks in the Borough (FEMA FIS 2010).

9.35.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Borough of Rockaway.

Table 9.35-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master Plan	Yes 1995	Local	Land Use Bd.	Re-examined 2002, 2008
Capital Improvements Plan	Yes	Local	Gov. Body	
Floodplain Management / Basin Plan	No			
Stormwater Management Plan	Yes 4/13/06, Ord. 04-06	Local	Land Use Bd.	Ch 170, Sections 170-36 - 170-36.10; Stormwater control
Open Space Plan	No			
Stream Corridor Management Plan	Yes 10/24/96, Ord. 12-96	Local	Land Use Bd.	Ch. 172, Sections 172-88 - 172-94, Rockaway River Corridor Overlay Zone District
Watershed Management or Protection Plan	No			
Economic Development Plan	No			
Comprehensive Emergency Management Plan	Yes	Local	OEM	EOP
Emergency Response Plan	Yes	Local	OEM	EOP
Post-Disaster Recovery Plan	No			
Transportation Plan	No			
Strategic Recovery Planning	No			



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Report				
Other Plans:	No			
Regulatory Capability				
Building Code	Yes 12/9/76, Ord. 17-76	State & Local		State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes 10/24/96, Ord. 12-96	GB/ Land Use Bd.	Land Use Bd.	Ch. 172, Sections 172-1 - 172-94; Zoning
Subdivision Ordinance	Yes 10/24/96, Ord. 12-96	GB/ Land Use Bd.	Land Use Bd.	Ch. 171, Sections 171-1 - 171-13; Requirements for subdivisions
NFIP Flood Damage Prevention Ordinance	Yes	Local	Borough Engineer	Chapter 139A – Flood Damage Prevention
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	No			
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes 10/24/96, Ord. 12-96	Local	Land Use Bd.	Ch. 171, Sections 171-14 - 171-20; Requirements for site plans
Stormwater Management Ordinance	Yes 4/13/06, Ord. 04-06	State, Local	GB/ Land Use Bd.	Ch. 170, Sections 170-36 - 170-36.10; Stormwater control
Municipal Separate Storm Sewer System (MS4)	Yes 10/13/05, Ord. 19-05	State, Local	GB/ Land Use Bd.	Ch. 213, Sections 213-15 - 213-19; Improper disposal of waste
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	Yes	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes 10/24/96, Ord. 12-96	Local	Land Use Bd.	Ch. 170, Section 170-5; Steep slope

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Borough of Rockaway.

Table 9.35-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Borough Engineer/Borough Planner
Mitigation Planning Committee	No	
Environmental Board/Commission	Yes	Environmental Advisory Committee - 3 volunteers
Open Space Board/Committee	No	





Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Economic Development Commission/Committee	No	
Maintenance Programs to Reduce Risk	No	
Mutual Aid Agreements	Yes	Police and Fire Depts.
Technical/Staffing Capability		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Borough Engineer/Borough Planner
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Borough Engineer
Planners or engineers with an understanding of natural hazards	Yes	Borough Engineer
NFIP Floodplain Administrator	Yes	Borough Engineer
Surveyor(s)	Yes	Borough Engineer
Personnel skilled or trained in GIS and/or Hazus-MH applications	Yes	Borough Engineer
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	Police Chief/OEM Coordinator
Grant Writer(s)	Yes	Borough Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Borough Engineer
Professionals trained in conducting damage assessments	Yes	Borough Engineer

Fiscal Capability

The table below summarizes financial resources available to the Borough of Rockaway.

Table 9.35-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community Development Block Grants (CDBG, CDBG-DR)	Yes - Engineer/Finance
Capital Improvements Project Funding	Yes - Finance
Authority to Levy Taxes for specific purposes	Yes - Finance
User fees for water, sewer, gas, or electric service	Yes - Water Dept. collects fees set by Governing Body
Impact Fees for homebuyers or developers of new development/homes	No
Stormwater Utility Fee	No
Incur debt through general obligation bonds	Yes - Finance
Incur debt through special tax bonds	Yes- Finance
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	Yes - Engineer/Finance
Open Space Acquisition Funding Programs	Yes - Governing Body (Morris County Flood Mitigation Program [acquisitions])
Other	



Community Classifications

The table below summarizes classifications for community program available to the Borough of Rockaway.

Table 9.35-9. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4	1995
Storm Ready	No		
Firewise	No		
Disaster/Safety Programs in/for Schools	Yes		
Organizations with Mitigation Focus (advocacy group, non-government)	No		
Public Education Program/Outreach (through website, social media)	Yes		
Public-Private Partnerships	No		

N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery, and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1,000 feet of a creditable fire hydrant and is within five road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO’s Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

The table below provides an approximate measure of Rockaway’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.



Table 9.35-10. Self-Assessment Capability for the Municipality

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and Regulatory Capability		X	
Administrative and Technical Capability	Limited staff; few people have numerous roles/responsibilities		
Fiscal Capability	2% property tax cap levy		
Community Political Capability	Limited staff		
Community Resiliency Capability	Limited staff		
Capability to Integrate Mitigation into Municipal Processes and Activities.	Limited staff; few people have numerous roles/responsibilities		

National Flood Insurance Program

NFIP Floodplain Administrator

Paul Ferriero, Borough Engineer

Flood Vulnerability Summary

The Borough of Rockaway joined the NFIP on September 3, 1971, and is currently an active member of the NFIP. The current effective Flood Insurance Rate Maps are dated June 19, 1985. As of September 30, 2014 there are 48 policies in force. Since September 30, 2014, 69 claims have been paid totaling \$1,441,107.11. As of September 30, 2014 there are 5 Repetitive Loss and 3 Severe Repetitive Loss properties in the community.

The Borough does not maintain a list of properties damaged by flood waters nor the property owner’s interest in pursuing mitigation projects. Following Hurricane Sandy, one residential property sustained damage from a generator fire and is being rebuilt. Less than twenty-five (25) building permits were issued for repairs due to flooding from both Hurricanes Irene and Sandy. Substantial Damage Estimates are made by the floodplain administrator. No Substantial Damage Estimates were made following Hurricane Sandy. At this time, no property owners have stepped forward with an interest in pursuing mitigation projects for their properties.

Resources

The community FDPO identifies the [title or staff position] as the local NFIP Floodplain Administrator, currently Paul Ferriero, for which floodplain administration is an auxiliary duty. The Borough of Rockaway is just beginning its floodplain management program. Responsibilities and duties of the floodplain administrator are still being formed.

Paul Ferriero feels he is adequately supported and trained to fulfill his responsibilities as the municipal floodplain administrator. Two major barriers to running an effective floodplain management program in the Borough is a 2% property tax cap levy and financial constraint. The Borough does not currently participate in the Community Rating System (CRS) program but would be interested in receiving more information. Paul Ferriero is not certified in floodplain management, however attends regular continuing education programs for code enforcement.



Compliance History

The Borough of Rockaway has remained in compliance with all NFIP standards since the Borough's inception into the NFIP with no probation or suspension periods.

Regulatory

Local ordinances and regulations meet the minimum requirements set forth by both FEMA and the State of New Jersey. Additional ordinances and codes supporting the implementation of the floodplain management program include Chapter. 172, Sections 172-88 - 172-94, Rockaway River Corridor Overlay Zone District Ordinance. This ordinance provides supplemental development regulations in the area designated to permanently protect the Rockaway River and its tributary streams and subsurface aquifers within the Borough from additional contamination originating from man's activities.

Community Rating System

The Borough of Rockaway does not participate in the Community Rating System (CRS) program. However, the Borough believes a class 8 is easily within reach for the community.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

Planning

The Borough of Rockaway currently maintains a Master Plan, most recently reviewed and updated in 2013. This Master Plan outlines land use and open space initiatives that augment the mitigation planning strategy. Future Master Plan reviews and updates will include hazard mitigation specific elements.

Regulatory and Enforcement

The Borough continues to update and amend its local code as seen fit. Most recently, the Borough updated the building code to adjust fees and adopt UCC.

Education and Outreach

In conjunction with the County, the Borough is in the beginning stages of developing a public education and outreach program. The purpose of the program is to inform and disseminate information to the public regarding hazard mitigation and preparedness.

9.35.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as



such in the following table and may also be found under ‘Capability Assessment’ presented previously in this annex.

This initiative will be incorporated as an integration action item and will not be carried forward into the updated mitigation strategy.

Table 9.35-11. Past Mitigation Initiative Status

Description	Status	Review Comments
Rockaway Boro 1: Backup power (generator) for Police Headquarters building.	No Progress	The Borough is awaiting funding from FEMA to complete this project. This initiative will be carried forward into the updated mitigation strategy.
Rockaway Boro 2: Backup power (generator) for Main Street Pumping Station.	No Progress	The Borough is awaiting funding from FEMA to complete this project. This initiative will be carried forward into the updated mitigation strategy.
Rockaway Boro 3: Building code update	Complete	The Borough updated the municipal building code. Fees were amended and the UCC was adopted. Code amendment is part of basic municipal operations and is continuous. This initiative will be incorporated as an integration action item and will not be carried forward into the updated mitigation strategy.
Rockaway Boro 4: Stream bank stabilization along the Rockaway River between Ogden Avenue and Drake to Beach Street and Jackson Avenue.	In Progress	Streambank stabilization initiatives were taken along the Rockaway River. Hand dredging was completed in the identified area of Ogden Avenue and Drake to Beach Street and Jackson Avenue. At this time, no further action at the locations have been identified. This initiative is complete and will not be carried forward into the updated mitigation strategy.
Rockaway Boro 5: Elevate utilities out of 12 flood prone properties along Ogden Avenue.	No Progress	Funding is currently unavailable for this project. The Borough Engineer and the other Borough entities are working together to choose a course of action for the project. This initiative will be carried forward into the updated mitigation strategy.
Rockaway Boro 6: Develop all-hazards public education and outreach program for hazard mitigation and preparedness.	No Progress	The Borough and County are working together to establish a program. This initiative will be incorporated as an integration action item and will not be carried forward into the updated mitigation strategy.

Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The municipality has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2010 Plan:

- The municipal building code was updated. Fees were amended and the UCC was adopted.
- Streambank stabilization initiatives were taken along the Rockaway River. Hand dredging was completed in the identified area of Ogden Avenue and Drake to Beach Street and Jackson Avenue. At this time, no further action at the locations have been identified.

Proposed Hazard Mitigation Initiatives for the Plan Update

The Borough of Rockaway participated in a mitigation strategy workshop in January 2015 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013). In July 2015, the Borough of Rockaway participated in an NFIP





workshop to increase municipal knowledge of NFIP and to further assist with the identification of mitigation actions.

Table 9.35-12 summarizes the comprehensive-range of specific mitigation initiatives the Borough of Rockaway would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.35-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.35-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
RB 1	Permanent backup power (generator) for Police Headquarters building.	Existing	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake	3,4	OEM Coordinator	High	High	FEMA HMGP, Borough budget for local match	DOF	High	SIP	SP
RB 2	Permanent backup power (generator) for Main Street Pumping Station.	Existing	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake	3,4	DPW	High	High	FEMA HMGP, Borough budget for local match	DOF	High	SIP	SP
RB 3	Fox Lake Dam reconstruction with new spillway, low flow outlet, seepage protection and armoring of side slopes	Existing	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake	3,4	Rockaway Borough Public Works	High	\$625,000	FEMA HMGP, Borough budget for local match	Medium	High	SIP	SP
RB 4	Elevate utilities out of 12 flood prone properties along Ogden Avenue.	Existing	Flood	1,2,3,4	OEM Coordinator	High	High	FEMA HMGP, Borough budget for local match	DOF	Medium	SIP	SP

Notes:

Not all acronyms and abbreviations defined below are included in the table.

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

- CAV Community Assistance Visit
- CRS Community Rating System
- DPW Department of Public Works
- FEMA Federal Emergency Management Agency
- FPA Floodplain Administrator
- HMA Hazard Mitigation Assistance
- N/A Not applicable
- NFIP National Flood Insurance Program
- NJDEP New Jersey Department of Environmental Protection
- NJOEM New Jersey Office of Emergency Management
- OEM Office of Emergency Management

Potential FEMA HMA Funding Sources:

- FMA Flood Mitigation Assistance Grant Program
- HMGP Hazard Mitigation Grant Program
- PDM Pre-Disaster Mitigation Grant Program
- RFC Repetitive Flood Claims Grant Program (discontinued 2015)
- SRL Severe Repetitive Loss Grant Program (discontinued 2015)

Timeline:

- Short 1 to 5 years
- Long Term 5 years or greater
- OG On-going program
- DOF Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low < \$10,000

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:





Costs:

Medium \$10,000 to \$100,000
High > \$100,000

Where actual project costs cannot reasonably be established at this time:

Low Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Low= < \$10,000
Medium \$10,000 to \$100,000
High > \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low Long-term benefits of the project are difficult to quantify in the short term.
Medium Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 9.35-13. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
RB 1	Permanent Backup Power for police headquarters/Borough Emergency Management	1	0	1	1	1	1	0	1	1	1	1	1	0	1	11	High
RB 2	Permanent Backup power (generator) for Main Street Pumping Station.	1	0	1	1	1	1	0	1	1	1	1	1	0	1	11	High
RB 3	Fox Lake Dam reconstruction with new spillway, low flow outlet, seepage protection and armoring of side slopes	1	1	1	1	1	1	1	1	1	1	1	1	0	0	12	High
RB 4	Elevate utilities out of 12 flood prone properties along Ogden Avenue.	1	1	1	1	1	1	-1	1	1	1	0	0	1	0	6	Medium

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.



9.35.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.35.8 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Borough of Rockaway that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Borough of Rockaway has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.35.9 Additional Comments

None at this time.



Figure 9.35-1. Borough of Rockaway Hazard Area Extent and Location Map 1

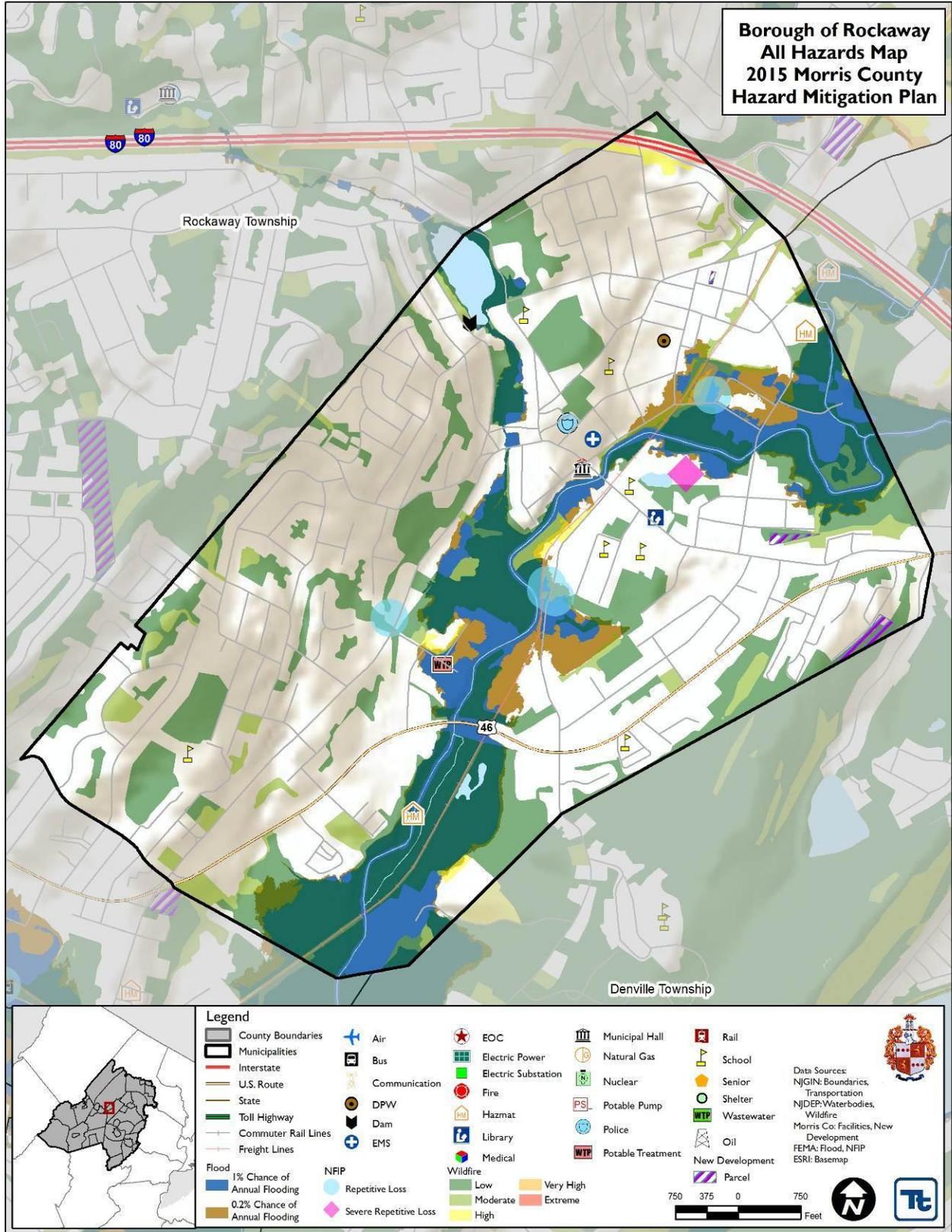
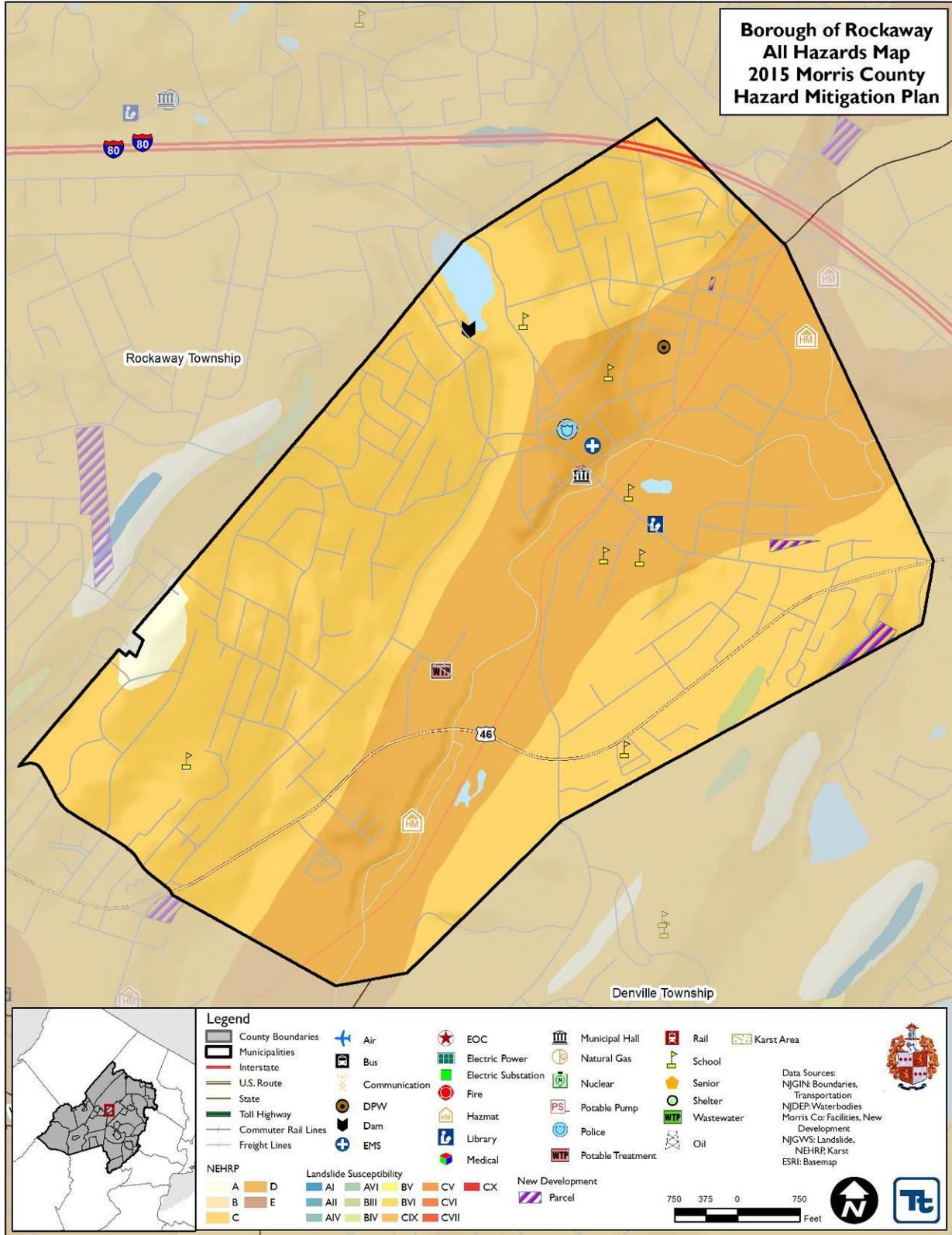




Figure 9.35-2. Borough of Rockaway Hazard Area Extent and Location Map 2





Action Number: Rockaway Boro 1,2 (LOI #1131)
Mitigation Action/Initiative: Permanent backup power (generator) for multiple critical facilities

Assessing the Risk	
Hazard(s) addressed:	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake
Specific problem being mitigated:	Loss of power to the critical facility of police headquarters which also serves as the Borough Emergency Management headquarters.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Currently, the Borough has a grant request submitted for funding to support the purchase of one (1) portable generator and the installation of three (3) transfer switches at critical facilities. While this is a cost effective and sensible short term solution, permanent backup power is critical to ensuring continuity of operations during a large scale incident which may exceed current Borough resource capability.
Action/Project Intended for Implementation	
Description of Selected Action/Project	Permanent generators installed at the following locations: <ul style="list-style-type: none"> Police Station: 33 Maple Avenue Rockaway NJ 07866 Town Hall: 1 East Main Street Rockaway NJ 07866 Garden Ave. Well #6: Latitude 40.9040 Longitude -74.5071 Main Street Pumping Station: Latitude 40.8951 Longitude -74.5204
Action/Project Category	Structure/Infrastructure Project
Goals/Objectives Met	G-3, G-4
Applies to existing and/or new development; or not applicable	Applies to existing buildings
Benefits (losses avoided)	Will allow the Borough to be self-sufficient and provide emergency response and public safety through small and large scale incidents
Estimated Cost	High
Priority*	High
Plan for Implementation	
Responsible/Lead Agency/Department	Rockaway Borough OEM
Local Planning Mechanism	None
Potential Funding Sources	FEMA HMGP, Borough budget for local match
Timeline for Completion	Dependent on Funding
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (page 2)



Action Number: Rockaway Boro 1,2

Mitigation Action/Initiative: Permanent backup power (generator) for multiple critical facilities

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Provide continuous emergency operations for Borough residents in the event of a power outage
Property Protection	0	Provide backup power to critical facilities in the Borough that need to operate in the event of an emergency
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards that have the potential to cause power outages
Timeline	1	
Local Champion	0	
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Number: Rockaway Boro 3
Mitigation Action/Initiative: Fox Lake Dam Spillway Upgrade

Assessing the Risk	
Hazard(s) addressed:	Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Earthquake
Specific problem being mitigated:	Fox Lake Dam is a Class I, High Hazard Dam with an inadequate spillway
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Rebuilding the dam is the only alternative to the spillway upgrade. Due to the size, cost, and scope of such a project, the spillway upgrade was selected as a cost-effective and needed alternative.
Action/Project Intended for Implementation	
Description of Selected Action/Project	Dam reconstruction with new spillway, low flow outlet, seepage protection and armoring of side slopes
Action/Project Category	Structure/Infrastructure Project
Goals/Objectives Met	G-1, G-2, G-3, G-4
Applies to existing and/or new development; or not applicable	Applies to existing dam
Benefits (losses avoided)	Stabilizing the dam will reduce the chances of downstream loss of life and property due to overtopping of the structure and failure
Estimated Cost	\$625,000
Priority*	High
Plan for Implementation	
Responsible/Lead Agency/Department	Rockaway Borough
Local Planning Mechanism	None
Potential Funding Sources	FEMA HMGP, Borough budget for local match
Timeline for Completion	Plans have been submitted to DEP for approval. Construction is likely in 2016.
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (page 2)



Action Number: Rockaway Boro 3
Mitigation Action/Initiative: Fox Lake Dam Spillway Upgrade

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	1	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	12	
Priority (High/Med/Low)	High	