



## 9.36 TOWNSHIP OF ROCKAWAY

This section presents the jurisdictional annex for the Township of Rockaway. The annex includes a general overview of the Township of Rockaway; an assessment of the Township of Rockaway's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

### 9.36.1 Hazard Mitigation Planning Team

The following individuals are the Township of Rockaway's identified HMP update primary and alternate points of contact and NFIP Floodplain Administrator.

*Table 9.36-1. Hazard Mitigation Planning Team*

Primary Point of Contact	Alternate Point of Contact
Name / Title: Robert Scherr, OEM Coordinator Address: 65 Mount Hope Road, Rockaway, New Jersey 07866 Phone Number: 973-625-4000, ext. 1086 Email: rscherr086@rktpd.org	Name / Title: Martin McParland, Deputy OEM Address: 65 Mount Hope Road, Rockaway, New Jersey 07866 Phone Number: 973-625-4000, ext. 1053 Email: mmcparland053@rktpd.org
NFIP Floodplain Administrator	
Name / Title: Allison Ferrante, Municipal Engineer Address: 65 Mount Hope Road, Rockaway, New Jersey 07866 Phone Number: 973-983-2810 Email: aferrante@rockawaytownship.org	

### 9.36.2 Township of Rockaway Profile

Rockaway Township is located in north-central Morris County. It is bordered to the north and west by Jefferson Township, to the southwest by Wharton, Randolph, and Dover, and to the east by Rockaway Borough, Denville, Boonton Township, and Kinnelon. Rockaway Township is additionally bordered to the northeast by the Passaic County municipality of West Milford. According to the U.S. Census, the Township has a total area of 45.546 square miles, of which 41.403 square miles is land and 4.143 square miles is water.

According to the U.S. Census, the 2010 population for the Township of Rockaway was 24,156. The estimated 2017 population was 24,758, a 2.5 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 5.4 percent of the population is 5 years of age or younger and 16.7 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

### 9.36.3 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to understanding a jurisdiction's overall risk to its hazards of concern. Table 9.36-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figures 9.36-1 and 9.36-2 at the end of this annex illustrate the geographically-delineated hazard areas and the location of potential new development.



**Table 9.36-2. Recent and Expected Future Development**

Type of Development	2015	2016	2017	2018	2019
<b>Number of Building Permits for New Construction Issued Since the Previous HMP</b>					
Single Family	1	13	5	40	24
Multi-Family	100	199	95	266	93
Other (commercial, mixed-use, etc.)	1	3	2	1	1
Property or Development Name	Type of Development	# of Units / Structures	Location address and/or block and lot	Known Hazard Zone(s)*	Description / Status of Development
<b>Recent Major Development and Infrastructure from 2015 to Present</b>					
71 Pawnee Ave, LLC	Multifamily	4	Block 21502 Lot 1	KCSL 43280	Completed
Wharton Industrial	Industrial/Warehouse	3	Block 11504 Lot 1 and 2	Unknown	Under Construction
US Home Corporation, d/b/a Lennar	Multifamily	142	Block 22401 Lot 1.01	Unknown	Under Construction
Pondview Estates, Inc.	Multifamily	1,050	Block 11501 Lots 41, 45, and 47; Block 11502 Lot 2	Unknown	Under Construction
42 Maple Terrace, LLC	Commercial	n/a	Block 22312 Lot 6	Unknown	Under Construction
<b>Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years</b>					
Morris Commons, LLC	Multifamily	345	Block 22401 Lots 3.06 and 3.07	Unknown	Anticipated
Lake Hudsonia Dam Removal	Dam Removal	1	Block 30101 Lot 1	Unknown	Anticipated
Lake Ames Dam Reconstruction	Dam Reconstruction	1	Block 30101 Lot 3	Unknown	Anticipated
Mount Hope Pond	Dam Reconstruction	1	Block 10001 Lot 2.01	Unknown	Anticipated

\* Only location-specific hazard zones or vulnerabilities identified.

### 9.36.4 Capability Assessment

The Township of Rockaway performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 5 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Information on National Flood Insurance Program (NFIP) compliance.
- Classification under various community mitigation programs.
- The community's adaptive capacity for the impacts of climate change.



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, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized below. The Township of Rockaway identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

### PLANNING, LEGAL AND REGULATORY CAPABILITY

The table below summarizes the legal and regulatory tools that are available to the Township of Rockaway and where hazard mitigation has been integrated.

**Table 9.36-3. Planning, Legal and Regulatory Capability**

Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how? If no - can it be a mitigation action? If yes- how? Describe in comments	If yes, add Mitigation Action #.
<b>Codes, Ordinances, &amp; Requirements</b>					
<b>Building Code</b>	Yes	Local and State	Yes	No	No
<i>Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.</i>					
<b>Zoning Code</b>	Yes	Local	Yes, if have planning board	No	No
<i>Comment: State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. Enforced by Planning Board, Local Ordinance 54-30 – Zoning Regulations.</i>					
<b>Subdivisions</b>	Yes	Local	Yes, if have planning board	No	No
<i>Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Enforced by Planning Board, Local Ordinance 54-21 – Site Plan and Sub Division Review Procedures.</i>					
<b>Stormwater Management</b>	Yes	Local	Yes	No	No
<i>Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Enforced by Engineering Department, Local Ordinance 54-25, 2006.</i>					
<b>Post-Disaster Recovery</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Real Estate Disclosure</b>	Yes	State	Yes	No	No
<i>Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Enforced by the Division of Consumer Affairs, N.J.A.C. 13:45A-29.1.</i>					
<b>Growth Management</b>	No	Local and State	Yes, if have planning board	-	-
<i>Comment: State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development &amp; Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in</i>					



Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how? If no - can it be a mitigation action? If yes, add Mitigation Action #.	
<i>the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.</i>					
<b>Shoreline Development</b>	No	-	Yes	-	-
<i>Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:27E-1 et seq.</i>					
<b>Site Plan Review</b>	Yes	Local	Yes, if have planning board	No	No
<i>Comment: Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by county planning board and for the approval of those subdivisions affecting county road or drainage facilities. 40:27-6.10: Each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Enforced by Planning Board, Local Ordinance 54-21.</i>					
<b>Environmental Protection</b>	No	-	Yes	-	-
<i>Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.</i>					
<b>Flood Damage Prevention</b>	Yes	-	No	Yes	2020-Rockaway T-009
<i>Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. Local Ordinance Chapter 22 designates the Construction Code Official as administrator of the flood damage prevention program, yet the Township Engineer currently is serving this role and is a CFM. Recommend ordinance update to clarify roles.</i>					
<b>Wellhead Protection</b>	No	-	No	-	-
<i>Comment: Delineation of well head protection areas (WHPAs) is part of the NJ-approved 1991 well head protection plan (WHPP) for public community water supply wells. These are priority areas for efforts to prevent and clean up ground water contamination. Municipalities are empowered to regulate land use, physical facilities and other activities within WHPAs areas, the potential for groundwater contamination can be reduced under the provisions of the New Jersey Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., which authorizes each municipality to plan and regulate land use to secure a safe and adequate drinking water supply for its residents. Also refer to Safe Drinking Water Regulations (NJAC 7:10-11.7(b)1)).</i>					
<b>Emergency Management</b>	No	-	Yes	-	-
<i>Comment: Per the NJ Civilian Defense and Disaster Control Act (App.A:9 43.2) Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years. See Emergency Operations Plans below.</i>					
<b>Climate Change</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Disaster Recovery Ordinance</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Disaster Reconstruction Ordinance</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Other</b>	No	-	No	-	-



Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how? If no - can it be a mitigation action? If yes, add Mitigation Action #.	
Comment:					
<b>Planning Documents</b>					
<b>Master Plan</b>	Yes	Local	Yes	No	No-
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1). Enforced by Planning; Reexamination Report of the Master Plan adopted 11/18/19.					
<b>Capital Improvement Plan</b>	Yes, 2014	Local	Allowed	-	-
Comment: Per NJSA 40:55D-29) the governing body is authorized to direct the planning board to prepare a CIP with at least a six year planning horizon. Enforced by Administration, Capital Improvement Program.					
<b>Disaster Debris Management Plan</b>	No	-	No	-	-
Comment:					
<b>Floodplain or Watershed Plan</b>	Yes, 1995	Local and State	No	-	-
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332). Enforced by Engineering, Local Ordinance Chapter 22.					
<b>Stormwater Management Plan</b>	Yes	-	Yes	-	-
Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). Municipal Stormwater Management Plan Township of Rockaway March 2005.					
<b>Stormwater Pollution Prevention Plan</b>	Yes	-	Yes	-	-
Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). Stormwater pollution prevention plan Rockaway Township October 21, 2019.					
<b>Urban Water Management Plan</b>	No	-	No	-	-
Comment:					
<b>Habitat Conservation Plan</b>	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
<b>Economic Development Plan</b>	No	-	No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.)					
<b>Shoreline Management Plan</b>	No	-	No	-	-
Comment:					
<b>Community Wildfire Protection Plan</b>	No	-	No	-	-



Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how? If no - can it be a mitigation action? If yes, add Mitigation Action #.	
<i>Comment:</i>					
<b>Community Forest Management Plan</b>	No	-	No	-	-
<i>Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).</i>					
<b>Transportation Plan</b>	No	-	No	-	-
<i>Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4).</i>					
<b>Agriculture Plan</b>	No	-	No	-	-
<i>Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).</i>					
<b>Climate Action Plan</b>	No	-	No	-	-
<i>Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).</i>					
<b>Tourism Plan</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Business Development Plan</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Other: Shade Tree commission</b>	Yes	-	Allowed	-	-
<i>Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including: a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection; c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958. Local Ordinance 2-31.</i>					
<b>Other - Historic Preservation</b>	No	-	Allowed		
<i>Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest.</i>					
<b>Response/Recovery Planning</b>					
<b>Emergency Operations Plan (EOP)</b>	No	Rockaway Township Office of Emergency Management	Yes	No	No
<i>Comment: Per the NJ Civilian Defense and Disaster Control Act (App.A:9_43.2) Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years.</i>					
<b>Threat &amp; Hazard Identification &amp; Risk Assessment (THIRA)</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Post-Disaster Recovery Plan</b>	No	-	No	-	-
<i>Comment: Enforced by OEM, Emergency Management</i>					
<b>Continuity of Operations Plan</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Public Health Plan</b>	No	-	No	-	-





Legal and Regulatory Capability					
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how? If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Other	No	-	No	-	-
Comment:					

**Table 9.36-4. Development and Permitting Capability**

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Construction Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes A vacant land assessment was performed in 2019.

## ADMINISTRATIVE AND TECHNICAL CAPABILITY

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

**Table 9.36-5. Administrative and Technical Capabilities**

Staff/Personnel Resource	Available?	Department/Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning
Mitigation Planning Committee	Yes	OEM
Environmental Board / Commission	Yes	Administration
Open Space Board / Committee	Yes	Administration
Economic Development Commission / Committee	Yes	Administration
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	AlertMorris, AlertRockawayTownship
Maintenance program to reduce risk	Yes	Administration
Mutual aid agreements	Yes	Police/Fire/OEM
<b>Technical/Staffing Capability</b>		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering
Planners or engineers with an understanding of natural hazards	Yes	Engineering
Staff with training in benefit/cost analysis	Yes	Finance



Staff/Personnel Resource	Available?	Department/Agency/Position
Staff with training in green infrastructure	Yes	Engineering
Staff with education/knowledge/training in low impact development	Yes	Engineering
Surveyor	No	-
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	Planning
Local or state water quality professional	Yes	Highlands Coalition
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM
Watershed planner	Yes	Highlands Coalition, Engineering, Administration
Environmental specialist	No	-
Grant writers	Yes	Administration/Contractor
Resilience Officer	No	-
Other	No	-

### FISCAL CAPABILITY

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

**Table 9.36-6. Fiscal Capabilities**

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Open Space Acquisition Funding Programs	Yes – Morris County Flood Mitigation Program (acquisitions)
Other	No

### EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Township of Rockaway.

**Table 9.36-7. Education and Outreach Capabilities**

Criterion	Response
Do you have a public information officer or communications office?	Business Administrator or Assistant Administrator
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	Yes. Website provides link to Morris County OEM.





Criterion	Response
<ul style="list-style-type: none"> <li>If yes, briefly describe.</li> </ul>	
Do you use social media for hazard mitigation education and outreach?	Yes. Facebook.
<ul style="list-style-type: none"> <li>If yes, briefly describe.</li> </ul>	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes. Shade Tree. Environmental Protection Committee.
<ul style="list-style-type: none"> <li>If yes, briefly describe.</li> </ul>	
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes. Township newsletter, water and sewer mailing, tax mailing
<ul style="list-style-type: none"> <li>If yes, briefly describe.</li> </ul>	
Do you have any established warning systems for hazard events?	AlertMorris, Alert Rockaway Township
<ul style="list-style-type: none"> <li>If yes, briefly describe.</li> </ul>	

### COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Rockaway.

**Table 9.36-8. Community Classifications**

Program	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (Fire ISO Protection Class)	Yes	04/4X	2017
Storm Ready Certification	No		
Firewise Community Classification	No		

### ADAPTIVE CAPACITY

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

The municipality has access to resources to determine the possible impacts of climate change upon the municipality. The administration supports integrating climate change in policies or actions, but climate change is not being integrated into current policies/plans or actions (projects/monitoring) within the municipality.

**Table 9.36-9. Adaptive Capacity**

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Dam Failure	Medium
Disease Outbreak	High
Drought	Medium
Earthquake	Medium
Extreme Temperature	Medium
Flood	Medium
Geological Hazards	Low
Harmful Algal Blooms	Low





Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Hazardous Substances	High
Infestation	Medium
Severe Weather	High
Severe Winter	High
Wildfire	Low

### NATIONAL FLOOD INSURANCE PROGRAM

This section provides specific information on the management and regulation of the regulatory floodplain.

**Table 9.36-10. National Flood Insurance Program Compliance**

Criterion	Response
What local department is responsible for floodplain management?	Engineering, Planning & Construction Department
Who is your floodplain administrator? (name, department/position)	The FDPO designates the Construction Official. Currently, the Township Engineer serves this role.
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	1987
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes County FIRM map adoption on hold.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?*	48
• What is the insurance in force?	\$20,222,100
• What is the premium in force?	\$84,280
How many total loss claims have been filed in your jurisdiction?*	79
• How many claims are still open or were closed without payment?	23
• What were the total payments for losses?	\$676,538
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	No

\*Policies and Claims from <https://bsa.nfipstat.fema.gov/reports/1011.htm> and <https://bsa.nfipstat.fema.gov/reports/1040.htm> as of 09/30/2018.

### ADDITIONAL AREAS OF EXISTING INTEGRATION





In the performance period since adoption of the 2015 HMP, the Township of Rockaway made progress on integrating hazard mitigation into other initiatives. The following plans and programs currently integrate components of the HMP and strategy:

- The Township designated the Township of Rockaway municipal building as a heating and cooling station.
- The Township designated the Rockaway Township Library as a primary shelter.
- The Township adopted the AlertRockawayTownship and enhanced 911 (Smart911) programs.

### 9.36.5 Hazard Event History Specific to the Jurisdiction

Morris County has a history of hazard events, as detailed in Section 4 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 4.4 (Hazard Profiles) and includes a chronology of events that affected Morris County and its jurisdictions. The Township of Rockaway's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Morris County. Table 9.36-11 provides details regarding municipal-specific loss and damages the Township of Rockaway experienced during hazard events. Information provided in the table below is based on reference material or local sources.

**Table 9.36-11. Hazard Event History**

Date(s) of Event	Event Type (disaster declaration if applicable)	Morris County Designated?	Summary of Event	Summary of Local Damages and Losses
January 21-24, 2016	Severe Winter Storm and Snowstorm (DR-4264)	Yes	An impulse from the west coast traversed the midsection of the country, then developed into a low-pressure system as it tracked across the Gulf States before intensifying along the Carolina coast into a major nor'easter, producing record snowfall in parts of New Jersey on January 23rd. It then moved out to sea after passing by the mid-Atlantic coast early on January 24th. Wind gusts up to 60 MPH produced blizzard conditions as visibilities dropped to one-quarter mile or less in spots.	None reported
March 6-7, 2018	Severe Winter Storm and Snowstorm (DR-4368)	Yes	Precipitation gradually overspread the region during the overnight hours of March 6th to the 7th. 12 to 24 inches were observed across large parts of Morris County. The snow contained large amounts of liquid, making it heavy and wet. This resulted in downed trees, limbs, and wires, leading to numerous power outages across portions of	None reported



Date(s) of Event	Event Type (disaster declaration if applicable)	Morris County Designated?	Summary of Event	Summary of Local Damages and Losses
			New Jersey, especially where the heaviest snow was reported.	

### 9.36.6 Jurisdiction-Specific Vulnerabilities and Hazard ranking

The hazard profiles in Section 4 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. Table 9.36-12 summarizes the Township of Rockaway's risk assessment results and data used to determine the hazard ranking.

A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. A certainty factor of high, medium or low was selected and assigned to each hazard to provide a level of transparency and create increased understanding of the data used to support the resulting ranking. The following scale was used to assign a certainty factor to each hazard:

- High—Defined scenario/event to evaluate; probability calculated; evidenced-based/quantitative assessment to estimate potential impacts through hazard modeling.
- Moderate—Defined scenario/event or only a hazard area to evaluate; estimated probability; combination of quantitative (exposure analysis, no hazard modeling) and qualitative data to estimate potential impacts.
- Low—Scenario or hazard area is undefined; there is a degree of uncertainty regarding event probability; majority of potential impacts are qualitative.



Table 9.36-12. Summary of Risk Assessment Results

Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
<b>Dam Failure</b>	Partial or complete failure of a dam  There are 25 dams in the Township, according to NJDEP.	Population impacted is dependent on the capacity of the dam, the extent of the dam failure inundation area and the severity of the failure.		The number of building impacted is dependent on the capacity of the dam, the extent of the dam failure inundation area and the severity of the failure.		Economic impacts include dam/building/infrastructure repairs; debris removal/disposal; utility impacts.		Low
<b>Disease Outbreak</b>	Disease Outbreaks which include: Mosquito-Borne Diseases, Tick-Borne Diseases, Campylobacteriosis, Influenza, Mumps, Ebola	Population impacted is dependent on the disease and severity of the outbreak; in some cases immuno-compromised persons are more vulnerable.		Structural impacts due to disease outbreak would be limited.		Economic losses can include County financial impacts to monitor/address outbreaks; lost wages or commercial interruptions; depends on the severity and type of disease outbreak.		Low
<b>Drought</b>	Prolonged drought event - The County is serviced by water supplies who primarily get water from groundwater sources; some surface water sources.	Entire population exposed. Population on surface water supplies may be impacted first; water restrictions/contamination; increased wildfire risk.		Droughts are not expected to cause direct damage to buildings.		Losses include aesthetic, landscape/nursery/agricultural industry impacts.		Low
<b>Earthquake</b>	"100, 500-, 2,500-Year Mean Return Period (MRP) Events evaluated  NEHRP Soils D&E (soft soils that amplify ground shaking are present in the County"	NEHRP D&E:	587	NEHRP D&E:	471	100-year Loss:	\$0	High
		Liquefaction Class 4:	15	Liquefaction Class 4:	23	500-year Loss:	\$3,747,940	
						2,500-year Loss:	\$65,284,337	
<b>Extreme Temperature</b>	Extreme temperature event (heat or cold)	Over 65 Population:	4,145	Physical impacts due to extreme temperatures would be limited.		Loss of business function is possible due to unexpected repairs (i.e. pipes bursting) or power failures.		Low
		Population Below Poverty Level:	792					
<b>Flood</b>	100- and 500-Year Mean Return Period Event	100-year	114	100-year	79	100-year Loss:	\$78,355,686	High
		500-year	198	500-year	118			
<b>Geological</b>	High Landslide Susceptibility Areas and Areas developed over carbonate rock	Class A:	13	Class A:	9	Class A:	3891595.031	Moderate
		Class B:	26	Class B:	10	Class B:	\$4,214,865	
		Carbonate Bedrock:	86	Carbonate Bedrock:	231	Carbonate Bedrock:	\$577,508,792	



Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
<b>Harmful Algal Bloom</b>	Any body of water or area adjacent that is susceptible to harmful algal bloom.	Population in contact (e.g., swimming) or drinking water from surface water impacted can result in a range of health effects		General building stock impacts due to harmful algal bloom are not anticipated. Critical facilities (i.e., water treatment plants) could lead to plant closures.		Economic impacts range from recreational closure of impacted waterbodies; cost to sample/monitor/remediate.		Low
<b>Hazardous Substance</b>	Release of a hazardous substance from a fixed site.	Population impacted will depend on the type of material and scale of the incident. May include population within small radii of site.		The degree of damages to a building depends on the scale of the incident.		The degree of damages depends on the scale of the incident.		Low
<b>Infestation</b>	Infestation including: Insects [e.g. Gypsy Moth, Mosquitoes, Spotted Lanternfly, Emerald Ash Borer], White-Tailed Deer, Rodents	Population impacted will depend on the type and severity of infestation and may cause an increased risk for disease outbreak.		Physical impacts will be limited to indirect impacts from invasive species which affect crops and vegetation.		Economic impact will depend on the type and severity of infestation and may cause an increased risk for disease outbreak.		Low
<b>Severe Weather</b>	Severe Weather Event	Entire population exposed; The degree of impact to the population depends on the scale of the incident.		Entire building stock is exposed; The degree of impact depends on the scale of the incident.		Annualized Loss:	\$62,790	High
						100 -Year Loss:	\$1,483,600	
						500-year Loss:	\$9,302,555	
<b>Severe Winter Weather</b>	Severe Winter Weather Event	All residents/commuters/visitors are exposed; socially-vulnerable populations may be at increased risk.		All buildings are exposed; the degree of impact depends on the scale of the incident.		The cost of snow and ice removal and repair of roads/infrastructure can impact operating budgets.		Low
<b>Wildfire</b>	Wildfire Fuel Hazard areas (High, Very High, Extreme)	Wildfire:	24	Wildfire:	32	Wildfire:	\$106,943,809	Moderate

**REPETITIVE FLOOD LOSSES**

The following summarizes the repetitive and severe repetitive flood losses in the Township of Rockaway.

- Number of repetitive loss (RL) properties: 6
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

Source: FEMA BureauNet, 2019

Note: RL and SRL as of 04/26/2019; The number of SRL properties excludes RL properties and includes properties that have been verified only (SRL\_Indicator = V).

**CRITICAL FACILITIES**

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

**Table 9.36-13. Potential Flood Losses to Critical Facilities and Lifelines**

Name	Type	Exposure		Status of Mitigation
		1% Event	0.2% Event	
Agilent Techs. Inc.	Hazmat	X	X	2020 Rockaway T-004
Chestnut Sewer Station*	Wastewater Pump	X	X	2020 Rockaway T-003
Hibernia Volunteer Fire Company 1*	Fire		X	2020 Rockaway T-008
Lake Ames Dam	Dam	X	X	2020 Rockaway T-006
Mount Hope	Dam	X	X	2020 Rockaway T-006
White Meadow Lake Dam	Dam	X	X	2020 Rockaway T-006

\* Identified lifeline

**ADDITIONAL IDENTIFIED VULNERABILITIES**

The jurisdiction has identified the following vulnerabilities within their community:

- Four single family homes are in the floodplain on Blackwell Street.
- East Blackwell Street and Carol Street are prone to flooding.
- Hewlett Packard Well can be contaminated from Beaver Brook flooding.
- McKeel Brook is prone to flooding. Township is requesting evaluation by the US Army Corps for Engineers.
- Swede Mine Road, Route 46 and George Street intersection is prone to flooding.

**HAZARD AREA EXTENT AND LOCATION**

Hazard area extent and location maps were generated for the Township 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 adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Rockaway has significant exposure. Refer to Figures 9.36-1 and 9.36-2.



**HAZARD RANKING**

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Rockaway. The Township of Rockaway has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township of Rockaway agreed with the risk assessment results.

**Table 9.36-14. Township of Rockaway Hazard Ranking Input**

Dam Failure	Disease Outbreak	Drought	Earthquake	Extreme Temperature	Flood	Geological Hazard
Medium	High	Medium	Medium	Medium	Medium	Low

Harmful Algal Bloom	Hazardous Substances	Infestation	Severe Weather	Severe Winter Weather	Wildfire
Low	High	Medium	High	High	Low

**9.36.7 Mitigation Strategy and Prioritization**

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

**PAST MITIGATION INITIATIVE STATUS**

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. 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 can also be found under 'Capability Assessment' presented previously in this annex.

**Table 9.36-15. Status of Previous HMP Mitigation Actions**

2015 Action Number Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
			Check if Yes	Enter 2020 HMP Action #
LOI Project #1155 Sewer pump station emergency generator	Vincent Brennan	Complete. Installed at W. Lake Shore Drive and two on Lake Shore Drive	-	-



2015 Action Number Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
			Check if Yes	Enter 2020 HMP Action #
LOI Project #1152 Emergency generator at 19 Mount Hope Road	Vincent Brennan	Complete. Installed at senior center that serves as the shelter	-	-
RT 1 - Backup power (generator) for School Facilities (shelter)(6)	Vincent Brennan	Continue. Copeland School needs a generator as shelter. Has kitchen, showers, holds 250-300 residents.	x	2020-Rockaway T-002
RT 2 - Analysis/evaluation of Rockaway River (flooding options, multi-jurisdictional)	Vincent Brennan	No progress. Continue.	X	2020-Rockaway T-001
RT 3 - Storm water runoff system upgrade- Route 46 and George Street	Vincent Brennan	Working with NJDOT to incorporate in upcoming safety improvement project. Continue.	X	2020-Rockaway T-001
RT 4 - Storm water runoff systems upgrade Swede Mine Road	Vincent Brennan	No progress. Continue.	X	2020-Rockaway T-004
RT 5 - Acquisition/elevation of two flood prone properties located on Debbie Place	Vincent Brennan	In Progress. Part of McKeel Brook flood analysis action.	X	2020-Rockaway T-001, 2020-Rockaway T-005
RT 6 - Mine Subsidence Project	Vincent Brennan	Ongoing capability. Contract for on call support.	-	-
RT 7 - Municipal Dam repair/reconstruction	Vincent Brennan	In progress. Continue.	x	2020-Rockaway T-006

As noted above, the Township of Rockaway identified the following mitigation projects/activities that were completed but not identified in the previous HMP:

- Installed 3 sewer pump generators.
- Installed the generator for the senior center that serves as the shelter.
- Installed seals/shields at Beaver Brook at the Hewlett Packard Well and Treatment Plant. An ongoing capability is to monitor the seals for any necessary mitigation actions.

#### PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Rockaway participated in a risk assessment workshop in November 2019 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Rockaway participated in a mitigation action workshop in March 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Morris County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and 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 Flood prone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.



Table 9.36-16 summarizes the comprehensive range of specific mitigation initiatives the Township of Rockaway would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can 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 (Mitigation Strategy), 14 criteria were used to evaluate each action, including an evaluation of the benefits and costs. For each new mitigation action, a numeric rank was assigned (-1, 0, or 1) for each of the 14 evaluation criteria. The results of this evaluation, in addition to input from the jurisdiction, were then used to prioritize the mitigation initiatives as 'High', 'Medium', or 'Low.' Table 9.36-17 summarizes the evaluation of each mitigation initiative and the resulting priority, listed by Action Number.



Table 9.36-16. Proposed Hazard Mitigation Initiatives and Associated Priority

Initiative Number	Mitigation Initiative Name	Description of the Problem Description of the Solution	New or Existing Assets?	Hazard(s ) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-Rockaway T-001	Rockaway River Analysis: Blackwell St./ Carol St. Flooding–RL Properties	Properties in the East Blackwell St/ Carol St. area are prone to flooding from the Rockaway River, including 4 homes, businesses, and a busline. Track multijurisdictional flood-prone facilities, conduct outreach to educate owners of the RL status, and provide them with mitigation options. Township will compile a list of mitigation actions that homeowners and the Township would like to pursue, including buyouts, elevations, and river desnagging, and then develop a FEMA HMA grant to obtain funding.	Existing	Flood	1, 5	<u>Engineerin</u> <u>g</u> Constructi on Officer	Operating Budget	Mediu m	Low	M ed iu m	Hig h	EAP	PP, PI
2020-Rockaway T-002	Generator for Copeland School Facility	Copeland School needs a generator as shelter. Has kitchen, showers, holds 250-300 residents. Design and install generator for Copeland School.	New	Severe Storm, Severe Winter Weather	1, 4	<u>OEM</u> , Schools Buildings Administr ator	HMGP, PDM	High	Medi um	M ed iu m	Hig h	SIP	PR, ES
2020-Rockaway T-003	Chestnut Sewer Station	Chestnut Sewer Station is a critical facility in the floodplain. Determine extent of flooding expected to the facility and plan mitigation. Can be integrated into the existing Wastewater Management Plan for Morris County. <a href="https://planning.morriscountynj.gov/wp-content/uploads/2014/11/county_wide_summary.pdf">https://planning.morriscountynj.gov/wp-content/uploads/2014/11/county_wide_summary.pdf</a>	New	Flood, Disease Outbreak, Severe Storm, Severe Winter Weather	1, 4	<u>Engineerin</u> <u>g</u>	HMGP, PDM, Operating Budget	High	High	M ed iu m	Hig h	SIP	ES
2020-Rockaway T-004	Agilent Techs, Inc.	Agilent Techs, Inc. is a facility with Hazardous Materials in the floodplain. The Township will educate the owner of the facility that the	Existing	Flood	1, 2	Administr ation	Operating budget	Mediu m	Low	Sh or t	Me di u m	EAP	PP, ES



Initiative Number	Mitigation Initiative Name	Description of the Problem Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		property is identified as a critical facility in the floodplain and provide them with mitigation options.											
2020-Rockaway T-005	Swede Mine Road flood analysis	Drainage system on Swede Mine Road is prone to backup. No progress. Continue.	Existing	Flood	1, 4	Engineering	HMGP, PDM, capital budget	Medium	Medium	Short	Medium	SIP	SP
2020-Rockaway T-006	McKeel Brook flood analysis	Properties in the McKeel Brook area are prone to flooding from the McKeel Brook, including 2 homes. Track flood-prone facilities, conduct outreach to educate owners of the RL status, and provide them with mitigation options. Township will compile a list of mitigation actions that homeowners and the Township would like to pursue, including buyouts, elevations, and infrastructure recommendations, and then develop a FEMA HMA grant to obtain funding.	Existing	Flood	1, 5	Engineering	HMGP, PDM, capital budget	Medium	Medium	Short	Medium	SIP	SP
2020-Rockaway T-007	Municipal Dam repair/reconstruction	Lake Ames Dam, Mount Hope Pond Dam, and Lake Hudsonia Dam are owned by the Township and considered Class II Significant Hazard. Update EOP to include review of EAPs from owners of the dams. Complete dam failure studies, where necessary.	Existing	Dam Failure, Flood	1, 4	OEM, Engineering	Operating budget	High	Low	Short	High	EAP	PI
2020-Rockaway T-008	Hibernia Fire Station #1	Hibernia Fire Station #1 is a lifeline facility in the 500-year floodplain. Determine extent of flooding expected to the facility and plan mitigation.	Existing	Flood	1, 3, 4	Engineering, Fire	Operating budget	Low	Low	Long	Low	SIP	PR, PP
2020-Rockaway T-009	FDPO Update	The FDPO designates the Construction Official to administer the program.	Existing	Flood, Severe Storm,	1, 4	Engineering, Constructi	Municipal budget	Medium	Low	Short	Medium	LPR	PR



Initiative Number	Mitigation Initiative Name	Description of the Problem Description of the Solution	New or Existing Assets?	Hazard(s ) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Update the FDPO to reflect engineer as FPA.		Severe Winter Weather		on Official, Planning Board							

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FDPO	Flood Damage Prevention Ordinance
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
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

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

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 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. 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 preserve or restore the functions of natural systems. 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. 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 9.36-17. Summary of Evaluation and Action Priority

Initiative Number	Mitigation Initiative Name	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
2020-Rockaway T-001	Rockaway River Analysis: Blackwell St./ Carol St. Flooding-RL Properties	1	1	1	0	0	1	0	1	1	0	1	0	1	1	9	High
2020-Rockaway T-002	Generator for Copeland School Facility	1	1	0	1	1	1	0	1	1	0	1	0	1	1	10	High
2020-Rockaway T-003	Chestnut Sewer Station	1	1	0	0	1	1	0	1	1	0	1	0	1	1	9	High
2020-Rockaway T-004	Agilent Techs, Inc.	1	0	0	1	0	1	0	1	1	0	1	0	0	0	6	Medium
2020-Rockaway T-005	Swede Mine Road flood analysis	1	1	0	1	0	0	0	1	1	1	1	0	0	0	7	Medium
2020-Rockaway T-006	McKeel Brook flood analysis	1	1	0	1	0	0	0	1	1	1	1	0	0	0	7	Medium
2020-Rockaway T-007	Municipal Dam repair/reconstruction	1	1	0	1	1	1	0	1	1	1	1	0	0	1	10	High
2020-Rockaway T-008	Hibernia Fire Station #1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	5	Medium
2020-Rockaway T-009	FDPO Update	1	1	1	1	0	1	0	0	1	0	0	1	1	0	8	Medium

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.





Table 9.36-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
<b>Dam Failure</b>	007, 009	007, 009	007, 009	007, 009	007, 009	007, 009	007, 009	007, 009
<b>Disease Outbreak</b>	-	-	-	-	008	-	-	-
<b>Drought</b>	-	-	-	-	008	-	-	-
<b>Earthquake</b>	-	-	-	-	008	-	-	-
<b>Extreme Temperature</b>	-	002	002	-	002	-	-	002
<b>Flood</b>	001, 002, 003, 004, 005, 006, 007, 008, 009	001, 002, 003, 004, 005, 006, 007, 008, 009	001, 004, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 003, 004, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009
<b>Geological</b>	-	-	-	-	-	-	-	-
<b>Harmful Algal Bloom</b>	-	-	-	-	-	-	-	-
<b>Hazardous Substance</b>	-	-	-	-	-	-	-	-
<b>Infestation</b>	-	-	-	-	-	-	-	-
<b>Severe Weather</b>	-	001, 002, 005, 006, 007, 008, 009	001, 004, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 003, 004, 005, 006, 007, 008, 009
<b>Severe Winter Weather</b>	-	001, 002, 003, 004, 005, 006, 007, 008, 009	001, 004, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 003, 004, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 005, 006, 007, 008, 009	001, 002, 003, 004, 005, 006, 007, 008, 009
<b>Wildfire</b>	-	-	-	-	-	-	-	-

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

**RED** = high ranked hazard

**ORANGE** = medium ranked hazard

**YELLOW** = low ranked hazard

### 9.36.8 Staff and Local Stakeholder Involvement in Annex Development

The Township of Rockaway followed the planning process described in Section 2 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 2 (Planning Process) and Appendix C (Meeting Documentation).



**Table 9.36-19. Contributors to the Annex**

Entity	Title	Method of Participation
Robert Scherr	OEM Coordinator	Attended initial Annex meeting on 10/3/2019, attended 2 <sup>nd</sup> meeting 03/03/2020, annex review and update
Pat Seger	Business Admin	Attended initial Annex meeting on 10/3/2019, attended 2 <sup>nd</sup> meeting 03/03/2020
Jonathan Walker	Engineering Inspector	Attended initial Annex meeting on 10/3/2019
Allison Ferrante	RT Engineer	Attended initial Annex meeting on 10/3/2019, annex review and edit
Angela Holtz	Public Health Nurse	Attended initial Annex meeting on 10/3/2019
Gene Garabrant	Water and Sewer Superintendent	Attended initial Annex meeting on 10/3/2019



Figure 9.36-1. Township of Rockaway Hazard Area Extent and Location Map 1

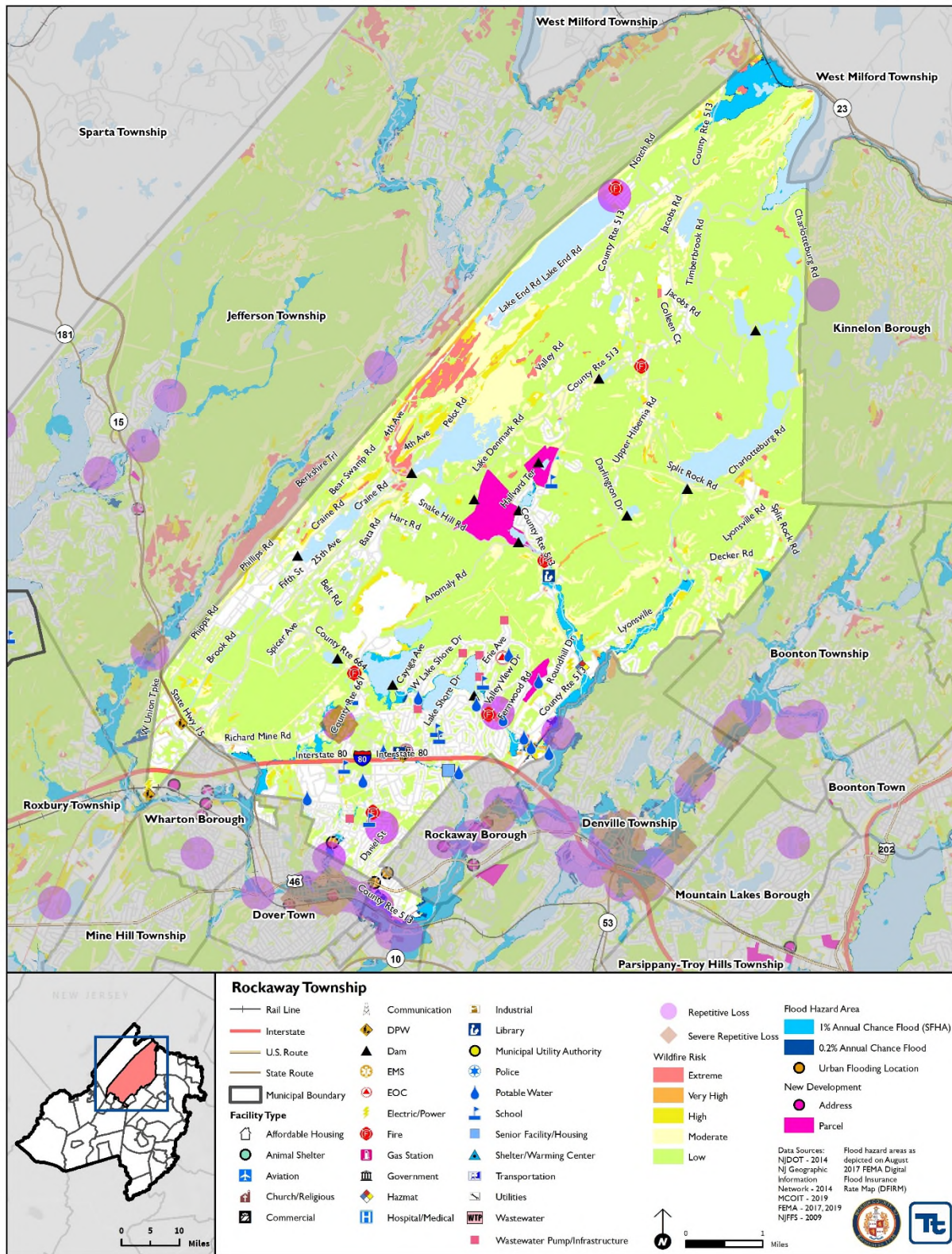
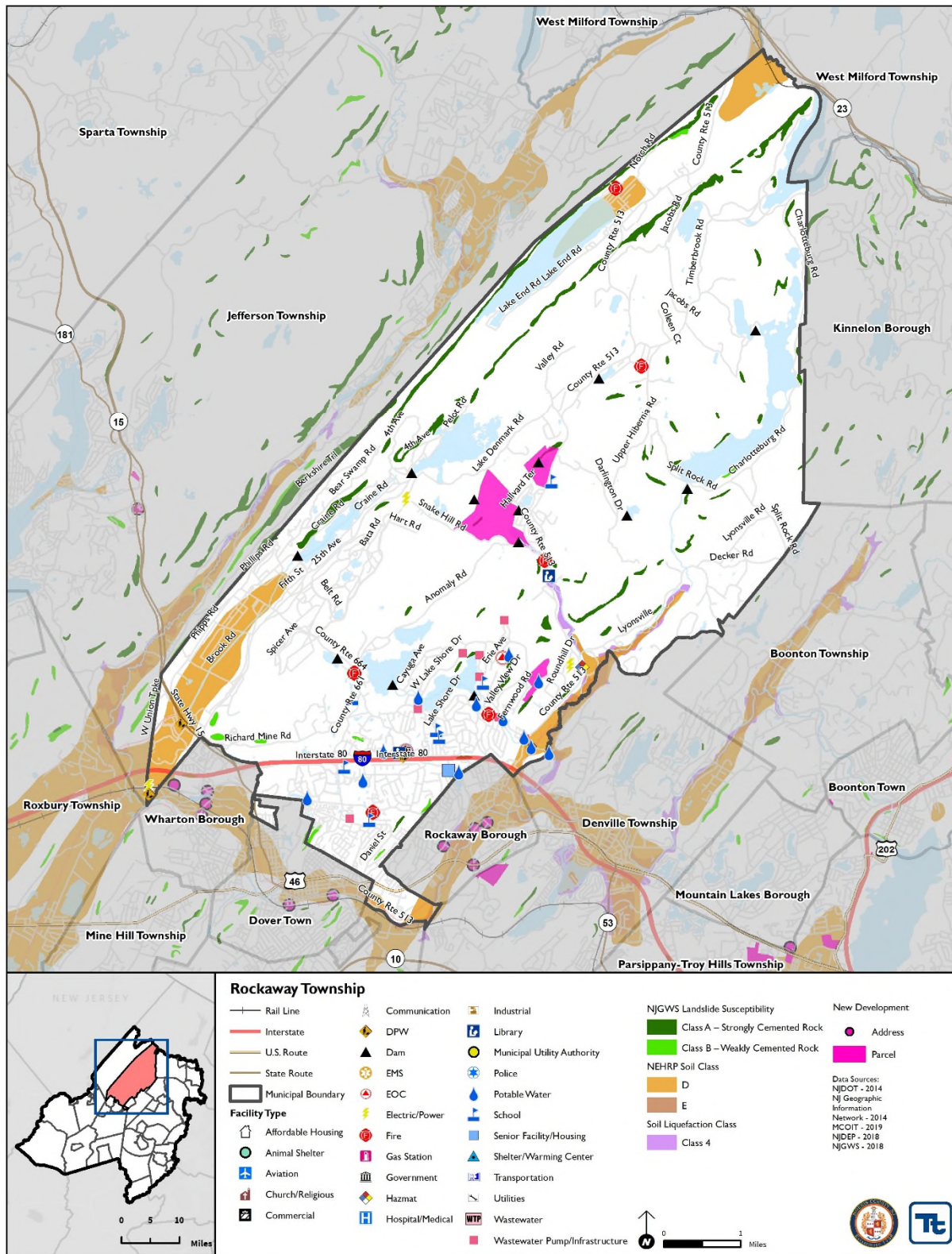






Figure 9.36-2. Township of Rockaway Hazard Area Extent and Location Map 2





Name of Jurisdiction:

Rockaway Township

Name and Title Completing Worksheet:

Rob Scherr, OEM Coordinator

Action Worksheet			
Project Name:	Blackwell St./ Carol St. Flooding-RL Properties		
Project Number:	Rockaway T-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flooding, Severe Weather, Severe Winter Weather		
Description of the Problem:	Properties in the East Blackwell St/ Carol St. area are prone to flooding, including 4 homes, businesses, and a busline.		
Action or Project Intended for Implementation			
Description of the Solution:	Track flood-prone facilities, conduct outreach to educate owners of the RL status, and provide them mitigation options. Township will compile a list of mitigation actions that homeowners and the Township would like to pursue, including buyouts, elevations, and river desnagging, and then develop a FEMA HMA grant to obtain funding.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	High	Estimated Benefits (losses avoided):	High
Useful Life:	Long	Goals Met:	1, 5
Estimated Cost:	BD	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short
Estimated Time Required for Project Implementation:	TBD	Potential Funding Sources:	HMGP, PDM
Responsible Organization:	Engineering, Construction Official	Local Planning Mechanisms to be Used in Implementation if any:	n/a
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Perform desnagging without mitigating properties	Low	Residents still sustain losses.
RL Property Mitigation actions plus desnagging	TBD	Less losses sustained.	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Name of Jurisdiction:

Rockaway Township

Name and Title Completing Worksheet:

Rob Scherr, OEM Coordinator

Action Worksheet		
Project Name:	Blackwell St./ Carol St. Flooding-RL Properties	
Project Number:	Rockaway T-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	0	
Political	0	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



Name of Jurisdiction:

Rockaway Township

Name and Title Completing Worksheet:

Rob Scherr, OEM Coordinator

Action Worksheet			
Project Name:	Chestnut Sewer Station		
Project Number:	Rockaway T-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flooding, Severe Weather, Severe Winter Weather		
Description of the Problem:	Properties in the East Blackwell St/ Carol St. area are prone to flooding, including 4 homes, businesses, and a busline.		
Action or Project Intended for Implementation			
Description of the Solution:	Track flood-prone facilities, conduct outreach to educate owners of the RL status, and provide them mitigation options. Township will compile a list of mitigation actions that homeowners and the Township would like to pursue, including buyouts, elevations, and river desnagging, and then develop a FEMA HMA grant to obtain funding.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	High	Estimated Benefits (losses avoided):	High
Useful Life:	Long	Goals Met:	1, 4
Estimated Cost:	BD	Mitigation Action Type:	SIP
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short
Estimated Time Required for Project Implementation:	TBD	Potential Funding Sources:	HMGP, PDM
Responsible Organization:	Engineering, Construction Official	Local Planning Mechanisms to be Used in Implementation if any:	n/a
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Perform desnagging without mitigating properties	Low	Residents still sustain losses.
	RL Property Mitigation actions plus desnagging	TBD	Less losses sustained.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Name of Jurisdiction:

Rockaway Township

Name and Title Completing Worksheet:

Rob Scherr, OEM Coordinator

Action Worksheet		
Project Name:	Chestnut Sewer Station	
Project Number:	Rockaway T-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	0	
Technical	0	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	