

9.17 TOWN OF RAMAPO

This section presents the jurisdictional annex for the Town of Ramapo.

9.17.1 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
Tom Sullivan, Land Acquisition Agent Town Attorney’s Office 237 Route 59, Suffern, NY 10901 845-357-5100 ext. 430 sullivant@ramapo-ny.gov	Lee Derario, Director of Municipal Development & Property 237 Route 59, Suffern, NY 10901 845-357-0591 ext. 119 derariol@ramapo-ny.gov
NFIP Floodplain Administrator (FPA)	
Anthony Sharan, Highway Superintendent 845-357-0903 sharant@ramapo-ny.gov	

9.17.2 Municipal Profile

The Town of Ramapo is located in Rockland County, 28 miles northwest of New York City. The Town was established in 1791. The name Ramapo is derived from an Algonquin word that meant 'round pond' or 'sweet water.' Ramapo developed on the early stage coach route between New York City and Albany, which passed through the Ramapo pass. The Town is bordered to the north by the Town of Haverstraw, the south by New Jersey, to the east by the Town of Clarkstown, and to the west by Orange County and New Jersey.

The Town has a total area of 61.9 square miles, of which 61.2 square miles is land and 0.7 square miles is water. There are villages and hamlets that around found within the Town and include: the hamlets of Antrim, Hillcrest, Monsey, Ramapo, Sandyfield, Sterlington, Suffern Park, Tallman, and Viola; and the Villages of Airmont, Chestnut Ridge, Hillburn, Kaser, New Hempstead, New Square, Montebello, Sloatsburg, Suffern, and Wesley Hills.

According to the 2010 Census, the community's population was 126,595, inclusive of its villages and hamlets.

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 9.17.8 of this annex which illustrates the hazard areas along with the location of potential new development.

Table 9.17-1. Growth and Development

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
Recent Development from 2010 to present					
Ballpark	Recreation	1	33.14-1-5 33.14-1-2	None Identified.	Completed
Known or Anticipated Development in the Next Five (5) Years					
Walmart – straddles multiple municipalities	Commercial	2	33.06-1-1	Flood: 1% Chance Event;	On hold

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
				WUI: Intermix; Landslide: High; NEHRP: E	
Rt 306 corridor – bungalows into single-family houses	Residential	300/50	Kaser, Maple Ave (backside of Blueberry Hill – between Viola and Maple on 306) –	None Identified.	Project started
600 unit (old drive-in unit)	Residential	600/80	Route 59 and 306 - 56.16-1-13	None Identified.	On hold
Maple to Spring-Valley line (density is changing)	Residential	300/50	Route 306 east to Village line – 56.07-1-8.19	None Identified.	On hold
Union Road – density is changing	Residential	300/50	50.45-1-23	None Identified.	Ongoing

* Only location-specific hazard zones or vulnerabilities identified.

9.17.3 Natural Hazard Event History Specific to the Municipality

Rockland 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 9.17-2. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	Rockland County Designated?	Summary of Damages/Losses
August 10, 2009	Thunderstorms	N/A	\$25,000 in damages throughout County
January 25, 2010	High Wind	N/A	\$100,000 in damages throughout County Tree debris; wires down
March 13-31, 2010	Severe Storms and Flooding DR-1899	Yes	
July 19, 2010	Thunderstorms, Lightning, Wind	N/A	\$36,000 in damages throughout County
December 26-27, 2010	Severe Winter Storm and Snowstorm DR-1957	Yes	Tree debris; wires down
August 25 – September 5, 2011	Hurricane Irene DR-4020	Yes	15-feet over on the Ramapo River; Thruway was flooded (pumps and drainage was installed as a result) part of the Suffern project was damaged. Village of Suffern – several homes were destroyed and since acquired. Village of Montebello – homes destroyed on Lake Drive; two structures acquired by FEMA Three bridges washed out in the Town; took years to rebuild:

Dates of Event	Event Type (Disaster Declaration if applicable)	Rockland County Designated?	Summary of Damages/Losses
			1. Montebello Road Bridge 2. Sterling Mine Road 3. Off Route 202 Replaced culverts in Mountainup (increased to 5-foot culvert – in non-incorporated Ramapo Town-wide Losses– 6 homes purchased by FEMA Infrastructure damage, streambank erosion Tree debris was enormous; County assisted with removal of debris/fallen trees Road closures lasted several weeks (shoulders had to be repaired) Power outage – 10 days maximum Overtime (Police and Highway) 1 fatality
October 2011 Halloween Storm		No	Wires down; Power outages; \$1.5 Million in County damages (Public Assistance)
October 27 – November 8, 2012	Hurricane Sandy DR-4085	Yes	River communities experienced damages Power outage -14 days Trees took down utility wires Tree debris; Overtime and salary for municipal staff (Police and Highway); (estimated \$10 Million) \$34 Million in Public Assistance (Countywide) 1 fatality
February 16, 2016	Strong Winds	N/A	\$50,000 in damages throughout County

Notes:

- EM Emergency Declaration (FEMA)
- FEMA Federal Emergency Management Agency
- DR Major Disaster Declaration (FEMA)
- N/A Not applicable

9.17.4 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 Town of Ramapo. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Natural Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Town of Ramapo.

Table 9.17-3. 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	33	High
Earthquake	100-Year GBS: \$0	Frequent	36	High



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
	500-Year GBS: \$4,098,306 2,500-Year GBS: \$84,549,421			
Extreme Temperature	Damage estimate not available	Frequent	21	Medium
Flood	1% Annual Chance: \$23,094,000	Frequent	36	High
Landslide	RCV Exposed: \$39,023,000	Occasional	12	Low
Severe Storm	100-Year MRP: \$1,554,331 500-year MRP: \$9,091,890 Annualized: \$84,261	Frequent	48	High
Winter Storm	1% GBS: \$29,948,080 5% GBS: \$149,740,400	Frequent	51	High
Wildfire	Estimated Value in the WUI: \$740,719,000	Frequent	27	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 Town of Ramapo.

Table 9.17-4. 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)
Ramapo, Town of	113	369	\$2,095,053	0	0	18

Source: FEMA Region 2, 2016

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 06/30/2016. The total number of repetitive loss properties does not include the severe repetitive loss properties. The number of claims represents claims closed by 06/30/16.

(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 the critical facilities identified in the HMP that are located in the FEMA-delineated 1-and/or 0.2-percent annual chance floodplain. The table also summarizes the Hazards United States (HAZUS) – Multi-Hazards (MH) damage estimates (if any) to each critical facility as a result of the 1-percent annual chance flood event.

Table 9.17-5. 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
Pomona	Sewer Pump Station	X	X	-	-
Potable well in the Village of Airmont	Potable Well	X	X	-	-

Source: Hazus-MH 3.2, Rockland County

X = Facility located in the FEMA-delineated floodplain.

- = No damages are calculated by HAZUS-MH.

Other Vulnerabilities Identified

The municipality has identified the following vulnerabilities within their community:

- According to the 2014 Rockland County Flood Insurance Study, flooding in the Town of Ramapo generally occurs during the spring and fall seasons. In the spring, snowmelt adds to heavy rains to produce increase runoff, and, in the fall, flooding can occur due to hurricane activity. Flood problems are generally caused by inadequate channel capacities and culvert sizes (FEMA FIS 2014).
- Lake Suzanne – improve dam; County and Town working with NYSDEC; having plot survey to potentially get rid of the dam; fill in the lake and put a causeway in
- Hamlet of Monsey (unincorporated Ramapo) Union Road, Maple Avenue Route 306 down – density has greatly increased and infrastructure needs upgrading; inadequate capacity NW side of Spring Valley.

Hershel Terrace is a residential neighborhood in the Monsey area of the Town of Ramapo. This neighborhood has experienced repeated flood events. The concern is that the neighborhood impact from the repeated storms has caused severe flooding affecting the local homes and roadways. It is a neighborhood of single and multi-family homes and the sustained high water conditions are a concern for the property loss and safety of the children. A new drainage project was added as a new mitigation action in Table 9.17-13.

- Spring Valley has historic flooding impacts.
- Rockland County regulates the streams and partially the dams.
- Flooding occurs along Haverstraw Road near the senior center (319 Haverstraw Road).
- Lonergan Drive area (Village of Suffern) frequently floods and has property owners interested in mitigation.
- The Town of Ramapo has 12 duplex pumping stations and 70 home grinder pump stations throughout the Town. Currently only 7 of the 12 duplex pump stations have permanently mounted back-up power generators. Most recently, during the extended power outages caused by Sandy, the sewer department used extensive force account labor in regular and overtime, as well as equipment to hook up portable generators and pump down the stations one by one, each day until the power was restored. This has been added as a new mitigation project in Table 9.17-13.

- Frequent flooding occurs along the Mahwah River in the Squires Gate region of the Village of Suffern. Historically, this area has flooded frequently since the 144 homes were built in the late 1960's. The area experiences flood damage starting between the 5 and 10 year flood recurrence interval.

The closed stone quarry sits along the river upstream from the Squires Gate. It has an available volume of storage of 817 acre-feet. Its usable bottom is some 90 feet below the river level and has a reasonable infiltration rate due to the tight rock structure. The available storage capacity can be reasonably maintained by pumping; as was done during the life of the recently closed quarry. Because the storage volume is well below the river elevation, the floodwater can be diverted by gravity into the quarry pit. For these reasons, based on our hydraulic studies, it is feasible for the quarry to be utilized to store enough floodwater to reduce the frequency of flooding at Squires Gate to the 25 year recurrence interval. In addition, the flood storage will, by inspection, reduce to some degree the flooding further downstream on the Ramapo River in New Jersey as well. This has been added as a new mitigation project in Table 9.17-13.

9.17.5 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 Town of Ramapo.

Table 9.17-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	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 2004	Local		Town of Ramapo Comprehensive Plan
Capital Improvements Plan	No			
Floodplain Management / Basin Plan	No			
Stormwater Management Plan	Yes	Countywide Stormwater Consortium		Developed as part of MS4 regulation
Open Space Plan	No			
Stream Corridor Management Plan	No	County		
Watershed Management or Protection Plan	No			
Economic Development Plan	No			

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Comprehensive Emergency Management Plan	No			
Emergency Operation Plan	Yes, Amended 3/2017		Police	Town ICS Plan: General Order 801 – Incident Command System
Post-Disaster Recovery Plan	No			
Transportation Plan	No			
Strategic Recovery Planning Report	No			
Other Plans:				
Regulatory Capability				
Building Code	Yes	State & Local	Building Department	
Zoning Ordinance	Yes 2004	Local	Zoning Board of Appeals	Chapter 376 - Zoning
Subdivision Ordinance				
NFIP Flood Damage Prevention Ordinance	Yes 2004	Federal, State, Local	Building Inspector	Chapter 149 – Flood Damage Prevention
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	Yes	State, Local	Building Inspector	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes	Local	Stormwater Management Officer	Chapter 237 – Stormwater Management and Sediment and Erosion Control
Stormwater Management Ordinance	Yes	Local	Stormwater Management Officer	Chapter 237 – Stormwater Management and Sediment and Erosion Control
Municipal Separate Storm Sewer System (MS4)	Yes 2006	Local		Chapter 218 – Sewers
Natural Hazard Ordinance				
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	Yes	State		NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	Yes	Local		Local Law No. 3-2006 – prohibits illicit discharges, activities and connections to separate stormwater sewer system

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Town of Ramapo.



Table 9.17-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board, Community Design Review Committee, Zoning Board of Appeals
Mitigation Planning Committee	No	
Environmental Board/Commission	No	Members Regional Watershed Council
Open Space Board/Committee	No	Open Space Initiative is run by the Supervisor
Economic Development Commission/Committee	No	Rockland Economic Development Council Rockland Business Association
Maintenance programs to reduce risk	Yes	Protocol for storm sewer inspection and clean-out twice per year
Mutual aid agreements	Yes	MUA with the Rockland County Villages of Suffern and Spring valley are full-force and have DPW and Police; Town has 100-man Police and large Highway Department The Town provides 8 Villages with the following services: Police, Highway, Building services and as needed for the Villages of Suffern and Spring Valley
Technical/Staffing Capability		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	Contract out Planning services – Fredrick P. Clark Department of Building Planning and Zoning
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Department of Public Works, Engineering Division Contract out specific-projects
Planners or engineers with an understanding of natural hazards	Yes	Department of Engineering and Highway
NFIP Floodplain Administrator (FPA)	Yes	Building Inspector as per municipal code
Surveyor(s)	No	Contract out
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	Town relies on Rockland County GIS
Scientist familiar with natural hazards	Yes	Several staff knowledgeable about the hazard areas
Emergency Manager	Yes	Police Chief
Grant writer(s)	Yes	Stormwater Consortium – applies for grants Noted on the Finance Department website
Staff with expertise or training in benefit/cost analysis	No	
Professionals trained in conducting damage assessments	Yes	Highway and Building Departments

Fiscal Capability

The table below summarizes financial resources available to the Town of Ramapo.

Table 9.17-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	No
Authority to levy taxes for specific purposes	Yes – Fire and EMS

Financial Resources	Accessible or Eligible to Use (Yes/No)
User fees for water, sewer, gas or electric service	User fees for street lights Water is private company but Town taxes the water Sewer fee on the tax bill Gas/Electric is ConEdison – Town and County have a tax
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
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	Open space bonding
Other federal or state Funding Programs	Consolidated Local Street and Highway Improvement Program (CHIPS) NYSDOT for highway; Federal Highway
Open Space Acquisition funding programs	Yes, Open Space Initiative (30% open space) – through bonds
Other	

Community Classifications

The table below summarizes classifications for community program available to the Town of Ramapo.

Table 9.17-9. 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)			
NYSDEC Climate Smart Community	No		
Storm Ready Certification	No		
Firewise Communities classification	No		
Natural disaster/safety programs in/for schools	Yes		
Organizations with mitigation focus (advocacy group, non-government)			
Public education program/outreach (through website, social media)	Yes		
Public-private partnership initiatives addressing disaster-related issues	No		

Note:

- N/A Not applicable
- NP Not participating
- Unavailable

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 1000 feet of a creditable fire hydrant and is within 5 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 <https://www.isomitigation.com/ppc/>
- The National Weather Service Storm Ready website at <http://www.stormready.noaa.gov/index.html>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

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

Table 9.17-10. 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		X	
Fiscal capability		X	
Community political capability		X	
Community resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities		X	

National Flood Insurance Program

NFIP Floodplain Administrator (FPA)

The Building Inspector is the NFIP Floodplain Administrator. The following information was provided by Mr. Tom Sullivan, Land Acquisition Agency, Town Attorney Office.

Flood Vulnerability Summary

The Rockland County Planning Department maintains the list of NFIP severe repetitive loss properties for the county. There are no known Town property owners interested in mitigation; however, the Village of Suffern has property owners interested (Lonergan Drive area). The Villages who experienced damages as a result of Irene would be able to provide addresses of damaged structures (e.g., Village of Suffern, Village of Montebello, Village of Kaser).

There have been several properties in the Town and Villages that have been acquired by FEMA. The Town was a subapplicant to mitigate a property in the Village of Sloatsburg.

The following Villages has substantial damage as a result of Hurricane Irene: Montebello and Suffern. The following Villages had damages as a result of Hurricane Sandy: Piermont and Stony Point

Resources

The FPA is the sole person assuming the responsibilities of floodplain administration for the Town; however, floodplain management knowledge spans across several Town departments. The Building Inspector provides the following services: permit review, inspections, damage assessments and record-keeping. Barriers to conducting an effective floodplain management program are existing development in the floodplain built in the 1960's. The Town would be interested in having the FPA and others attend continuing education and/or certification training on floodplain management if offered in the County.

Compliance History

To the Town's knowledge, they are in good-standing with the NFIP. The last date of their CAV is unknown.

Regulatory

The Town's flood management ordinance meets the FEMA and State minimum requirements. The Planning and Zoning boards take into consideration the location of flood hazard areas during their review. The Town is interested in learning more about the Community Rating System and potentially joining in the future.

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

Comprehensive Plan: Completed in 2004, the Ramapo Comprehensive Plan is a policy document that outlines a vision for the future of the municipality. It focuses on protection of the Town's natural resources, current and long-range growth and development that is compatible with the Town's quality of life, and provides guidance to decision makers, residents and organizations. The Plan contains goals and objectives applicable to various subject matters from quality of life to natural resources to community services. It includes the following elements: natural resources and open space, housing, community resources and character, and future land use.

Open Space Initiative: We have invested over 35 million dollars in open space, parkland and historic preservation of parcels throughout the Town in many Villages and Hamlets. In doing so, Ramapo has safeguarded our region's water supply, wetlands, water quality, historic sites and more than 2,000 acres of green space. The residents of Ramapo deserve to be commended for their steadfast support of our endeavors. Ramapo is one of the Visionary Communities in the country that have come to the realization that the only effective method of preserving open space in perpetuity is through public ownership.

Ramapo's Open Space purchases are generating revenue, which allows us to continue saving green space and enhances our recreation amenities without relying on the property tax. Our Open Space Program is truly unique because it has four major parts:

1. Historic Preservation.

2. Parkland - Over 50% of Ramapo's land area is parkland. In 2009 we will be using \$946,000 in Park Embellishment Funds to improve our parks, without using taxpayer monies.
3. Green Space Preservation such as the Mitch Miller property in Wesley Hills.
4. Income Producing Properties which are paying for the debt service

Regulatory and Enforcement

Flood Damage Prevention Ordinance (Chapter 149): The purpose of this ordinance is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- Regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
- Control filling, grading, dredging and other development which may increase erosion or flood damages;
- Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and
- Qualify and maintain for participation in the National Flood Insurance Program.

The objectives of this ordinance include:

- To protect human life and health;
- To minimize expenditure of public money for costly flood control projects;
- To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- To minimize prolonged business interruptions;
- To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, sewer lines, streets and bridges located in areas of special flood hazard;
- To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- To provide that developers are notified that property is in an area of special flood hazard; and
- To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

The Building Inspector is the appointed local floodplain administrator to administer and implement the ordinance by granting or denying floodplain development permits in accordance with its provisions.

Sewers (Chapter 218):

A sewer license is required for any person, firm or corporation, before commencement of any work to construct a house sewer or connection to the sewer system. An application for a sewer license shall be submitted to the Town Clerk.

Stormwater Management and Sediment and Erosion Control (Chapter 237): The purpose of this code is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within the Town. The code seeks to meet those purposes by achieving the following objectives:

- Meet the requirements of minimum measures 4 and 5 of the New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-02-02, or as amended or revised;
- Require land development activities to conform to the substantive requirements of the NYS Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities GP-02-01, or as amended or revised;
- Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and stream bank erosion and maintain the integrity of stream channels;
- Minimize increases in pollution caused by stormwater runoff from land development activities which would otherwise degrade local water quality;
- Minimize the total annual volume of stormwater runoff which flows from any specific site during and following development to the maximum extent practicable; and
- Reduce stormwater runoff rates, volumes, soil erosion and nonpoint source pollution wherever possible through stormwater management practices and ensure that these management practices are properly maintained and eliminate threats to public safety.

Streams and Watercourses (Chapter 240): The rapid growth in the Town of Ramapo and consequent improvement and construction of buildings, paved surfaces, roads and other improvements has altered in the past and continues to alter the natural flow of surface waters on the land which, together with the construction of culverts, drains and ditches for the carrying off of surface water, has both increased the quantity of storm and surface drainage and amplified in quantity and intensity the extent of runoff and surface flow, thus leading to present and potential flooding of property and homes, soil erosion, danger to health, injury and destruction of property. The development of appropriate facilities to meet the needs of the community has been inadequate, with the consequent result that a serious problem and danger has arisen to the health, welfare, well-being and property in the Town of Ramapo. It is the intention of the Town Board to protect the citizens of the Town of Ramapo, to prevent the dangers arising from improper drainage, improper drainage facilities in areas of poor drainage and high groundwater, inadequate construction of drainage facilities and unwise diversion, use and obstruction of streams and watercourses and to plan for the present and future use of drainage systems and watercourses. The following actions are prohibited within the Town:

- Place, deposit or permit to be placed or deposited any debris, fill, sand, stone or other solid materials of any kind or nature or construction of any kind into or across any stream, pond, ditch, culvert, pipe, watercourse or other drainage system, whether artificial or natural, shown on the Official Map of the Town of Ramapo.
- Construct and/or place any ditch, pipe, culvert or artificial watercourse of any kind or nature which shall collect and direct the flow of natural surface waters or drainage or increase in intensity or quantity the flow of surface waters or drainage from paved surfaces, structures, roads or improvements directly into any stream, pond, ditch, culvert, pipe or watercourse or other drainage system shown on the Official Map of the Town of Ramapo.
- Fill, obstruct, dam, divert or otherwise change or alter the natural or artificial flow of waters or drainage or the intensity or quantity of flow through any stream, ditch, pipe, pond, culvert, watercourse or other improvement or drainage system shown on the Official Map of the Town of Ramapo.

Zoning (Chapter 376): The Zoning Law implements the policies for land use in the Town's Comprehensive Plan and is adopted for the protection and promotion of the public health, safety, morals, and general welfare of the community as follows:

- To guide the future growth and development of the Town in accordance with a Comprehensive Plan of land use and population density that represents the most beneficial and convenient relationships among the

residential, nonresidential and public areas within the Town, considering the suitability of each area for such uses, as indicated by existing conditions, trends in population and modes of living and having regard for the use of land, building development and economic activity, considering such conditions and trends both within the unincorporated areas of the Town and with respect to the relation of the Town to areas outside thereof.

- To provide adequate light, air and privacy; to promote safety from fire, flood and other dangers; and to prevent overcrowding of the land and undue congestion of the population.
- To protect the character and the social and economic stability of all parts of the Town and to encourage the orderly and beneficial development of all parts of the Town.
- To protect and conserve the value of land throughout the Town and the value of buildings appropriate to the various districts established by this chapter.
- To bring about the gradual conformity of the uses of land and buildings through the Comprehensive Zoning Plan set forth in this chapter, and to minimize the conflicts among the use of land and buildings.
- To promote the most beneficial relation between the use of land and buildings and the circulation of traffic throughout the Town, having particular regard to the avoidance of congestion in the streets and the provision of safe and convenient vehicular and pedestrian traffic movements appropriate to the various uses of land and buildings throughout the Town.
- To provide a guide for public policy and action in the efficient provision of public facilities and services and for private enterprise in building development, investment and other economic activity relating to uses of land and buildings throughout the Town.
- To limit development to the availability and anticipated capacity of public facilities and services.
- To prevent the pollution of watercourses and wetlands; to safeguard the water table; to avoid hazardous conditions and excessive damage resulting from stormwater runoff and flooding; and to encourage the appropriate use and sound management of natural resources throughout the Town.
- To preserve the natural beauty of the physiography of the Town; to protect the Town against unsightly, obtrusive and obnoxious land uses and operations; to enhance the aesthetic aspect of the natural and man-made elements of the Town and to ensure appropriate development with regard to those elements.

Illicit Discharges (Local Law No. 3-2006): The purpose of this law is to provide for the health, safety, and general welfare of the citizens of the Town of Ramapo through the regulation of non-stormwater discharges to the municipal separate sewer system (MS4) to the maximum extent practicable as required by federal and state law. It establishes methods for controlling the introduction of pollutants into MS4 in order to comply with requirements of the SPDES General Permit for Municipal Separate Sewer Systems. The objectives of the law are as follows:

- To meet the requirements of the SPDES General Permit for Stormwater Discharges from MS4s, Permit no. GP-02-02 or as amended or revised;
- To regulate the contribution of pollutants to the MS4 since such systems are not designed to accept, process or discharge non-stormwater wastes;
- To prohibit Illicit Connections, Activities and Discharges to the MS4;
- To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this law; and
- To promote public awareness of the hazards involved in the improper storage and/or discharge of trash, yard waste, lawn chemicals, pet waste, wastewater, grease, oil, petroleum products, cleaning products, paint products, hazardous waste, sediment, snow and ice control materials, and other pollutants into the MS4.

Rockland County Stormwater Consortium: The Town is a member of the Rockland County Stormwater Consortium, which works with other municipalities and the county to keep waterways clear of pollutants. The Town's Deputy Director of Public Works, is on the Board. The Stormwater Consortium consists of those municipal separate stormwater system (MS4) municipalities within Rockland County who have joined together

with Cornell Cooperative Extension for the purpose of implementing the federal and state requirements for stormwater management. MS4 municipalities are responsible for meeting the Phase II stormwater management requirements of the National Pollutant Discharge Elimination System (SPDES) regulations.

Operational and Administration

Planning Board: The Town of Ramapo Planning Board consists of seven members and meets once a month. The Planning Board reviews and grants approvals for site plans and subdivisions. They also make recommendations to the Zoning Board of Appeals and Town Board on various zoning and planning matters.

Zoning Board of Appeals: The Town of Ramapo Zoning Board of Appeals consists of five members and meets once a month. The Zoning Board considers appeals for variances from the zoning ordinance, appeals of the Building Inspector, special permit applications and requests for zoning interpretations.

Community Design Review Committee: This committee, consisting of the Director of Building, Planning and Zoning, the Town Engineer and Town Planning Consultant, meets once a month to review applications being submitted to the Planning Board. This committee recommends changes they feel necessary prior to the applicant appearing before the Planning Board.

Highway Department: The Highway Department maintains town roads and sidewalks, is responsible for storm weather management, easements, trimming or removal of dead trees on town easements and right-of-way, cleaning storm drains, salting and plowing, sweeping roads. The Highway Department serves the Town and eight Villages.

Public Works: The Department of Public Works is responsible for the delivery of various Town services to the public. The Director of Public Works is responsible for the proper administration and operation of the four divisions that make up the Department of Public Works. Those four divisions are Engineering, Solid Waste and Recycling, Sewers and Central Garage. The Department of Public Works also issues permits for sewers, reviews dedications, handles drainage issues, and any disturbances.

- **Engineering:** This division is responsible for all engineering services in connection with the functions of the Town. Some of the tasks include the design of storm drainage and sanitary sewers and the performance of routine inspections of projects. They review projects that are being constructed within the unincorporated Town of Ramapo. Projects outside of the Town that may affect its residents may also be subject to review by this office. Certain complaints from residents may be handled by this department as well.
- **Sewers:** This division is responsible for the operation and control of all facets relating to the construction, maintenance, repair and inspection of the sanitary sewers and pumping stations within the Town of Ramapo. This department handles new sewer extensions, removes blockages, and inspects new sanitary sewer installations.

Fiscal

Operating Budget: The municipal budget is posted online.

Grants: The Town submitted a FEMA mitigation grant as a subapplicant for a property owner in the Village of Sloatsburg. The Town also pursues grant funding through NYS Department of Transportation and the Federal Highway Agency.

Education and Outreach

The Town maintains a website has links to the municipal newsletter, local laws and planning documents, the annual budget, county websites, and emergency services.

Disaster Land is a web-based emergency management software system used by Rockland County. The Towns are granted access to Disaster Land where flood inundation zones are incorporated. All municipal Emergency Coordinators have access to this 24/7 on smart phone/laptop/desktop.

Rockland County utilizes NY-Alert (<https://www.nyalert.gov/>) and CodeRed (Community Notification System; the backup to NY-Alert) for emergency notifications; all Towns and Villages have access to it. There is a mailbox for known flood inundation areas to target outreach as needed; and have license for FEMA's Integrated Public Alert & Warning System (IPAWS) to send out notifications.

The Town of Ramapo can't access CodeRed directly but can contact the Rockland County Warning Center to send out notifications; Towns/Villages have direct access NY-Alert. Town of Ramapo can access and send notifications on behalf of Village of New Hempstead who does not utilize CodeRed.

9.17.6 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.

Table 9.17-11. Status of Previous Mitigation Actions

<u>Action Number</u>	<u>2010 Mitigation Action</u>	<u>Responsible Party</u>	<u>Status</u> (In progress, No progress, Complete)	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	<u>Next Step</u> (Include in 2018 HMP or Discontinue)	<u>Describe Next Step</u> 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
	Reconstruct channel and road crossing for the Pascack Brook in the vicinity of Northbrook Road	Engineering	No Progress	Funding limitations		FEMA Grant Application noted the following and added as a new mitigation project: Pascack Brooke Easement - The bank erosion now threatens at a minimum one home and potentially others. Mitigation measures are now required and engineered concrete structures are needed to stabilize the banks along with erosion control measures that include plantings.
	Sky Meadow Road – construct dry access and improved road crossing	Engineering	No Progress	Trans-continental gas lines run through the project area.	Discontinue	This is not a feasible project.
1.B	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	CPG member; Town Supervisor	In Progress	Rockland County Planning Department reviews all Comprehensive Plans; would like to integrate mitigation into future comprehensive plan updates.	Include in 2018 HMP	Work with municipalities to integrate hazard mitigation and hazard areas into local comprehensive plans; a courtesy review of draft plans by the County Planning Department.
2.A	Expand and disseminate GIS and other hazard information on the internet.	CPG member; Town Supervisor	Complete	Rockland County has expanded its GIS services; flood inundation zones are on the map web portal and the Towns have access to the portal and this data. The County anticipates continual updates of data being collected and accessed by the Towns (e.g., dam inundation areas).	Discontinue	

<u>Action Number</u>	<u>2010 Mitigation Action</u>	<u>Responsible Party</u>	<u>Status</u> (In progress, No progress, Complete)	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	<u>Next Step</u> (Include in 2018 HMP or Discontinue)	<u>Describe Next Step</u> 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
	<p>Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas. Rockland County staff will make aerial mapping available, along with GIS mapping for natural hazards that was completed as part of the hazard mitigation planning project. The County will also facilitate the utilization of the Emergency Notification System by municipalities.</p>	<p>CPG member; Town Supervisor</p>	<p>Complete</p>	<p>Rockland County has mapping services available to municipalities through their on-line web map portal.</p> <p>Disaster Land is a web-based emergency management software system; Towns are granted access to it; flood inundation zones are incorporated into it so Emergency Coordinator from the municipality has access to it 24/7 on smart phone/laptop/desktop.</p> <p>The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it; New Hempstead not using CodeRed). There is a mailbox for known inundation areas to target outreach as needed; and have license for FEMA’s IPAWS to issue notifications.</p> <p>The Town can’t access CodeRed directly but can contact the County Warning Center; NY Alert Towns/Villages have access.</p> <p>Town of Ramapo can access and send notifications on behalf of Village of New Hempstead.</p>		

<u>Action Number</u>	<u>2010 Mitigation Action</u>	<u>Responsible Party</u>	<u>Status</u> (In progress, No progress, Complete)	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	<u>Next Step</u> (Include in 2018 HMP or Discontinue)	<u>Describe Next Step</u> 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
	Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	CPG member; Town Supervisor	In Progress	Town Supervisors had meetings with Village of Suffern about projects; Town would like to continue to do this.	Include in 2018 HMP	
4.F	Continue to implement best management practices for floodplain areas.	CPG member; Town Supervisor	In Progress	This is a current capability of the Town.	Discontinue	This is a current capability of the Town.
4.G	Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	CPG member; Town Supervisor	No progress	The Villages (specifically Suffern and Spring Valley) within the Town would have jurisdiction to keeping this list and working with their Village residents to mitigate flood-prone properties.	Discontinue	
4.J	Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	CPG member; Town Supervisor	In Progress	Bridge replacement projects are County projects; County and Town DPW meet monthly on projects and will continue this process.	Include in 2018 HMP	

<u>Action Number</u>	<u>2010 Mitigation Action</u>	<u>Responsible Party</u>	<u>Status</u> (In progress, No progress, Complete)	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	<u>Next Step</u> (Include in 2018 HMP or Discontinue)	<u>Describe Next Step</u> 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
13.A	Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	CPG member; Town Supervisor	No Progress	Municipalities in the County have worked with Orange & Rockland utility company to identify critical facilities. The Town does not have critical facilities in hazard-prone area. Villages may be interested in doing this.	Discontinue	
11.B	Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.	CPG member; Town Supervisor	Complete	Rockland County has developed an access and functional-needs registry since 2010; facilities and residents can go on-line and notify of their existence. The Town of Ramapo has access to this data (on-line or hardcopy); 5 Towns, and Villages of Suffern and Spring Valley have on-line access to this system.		
	Public awareness program on hazards, prevention and mitigation: assist CPG Chairperson in maintenance of mitigation planning web presence; assist CPG Chairperson in preparation of annual hazards and mitigation planning fact sheet and its distribution; assist CPG chairperson in preparation of hazards survey; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc. at the discretion of the jurisdiction (incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources).	RCOFES lead with direct participation and involvement from each jurisdiction's CPG member	In Progress	Rockland County provides Towns and Villages palm-cards on winter storms; information regarding flooding; hurricane; high-winds, tornadoes via email and social media (Twitter and Facebook). Rockland County also has a pamphlet organizer hanging in Town Hall with safety tips on various hazards. At the Town's request the County will speak to an organization/school/non-profit on emergency preparedness and mitigation.	Discontinue	This is a current capability of Rockland County Office of Fire and Emergency Service.

<u>Action Number</u>	<u>2010 Mitigation Action</u>	<u>Responsible Party</u>	<u>Status</u> (In progress, No progress, Complete)	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	<u>Next Step</u> (Include in 2018 HMP or Discontinue)	<u>Describe Next Step</u> 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
	Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	Each jurisdictional CPG member	No Progress	SEQRA review is conducted for specific-projects which takes into account hazards/problems. Rockland County Planning Department provides recommendations. The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	Include in 2018 HMP	The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.
	Code enforcement: enforcement of NYS and local building codes	Each jurisdictional CPG member	In Progress	This is a capability and will not be continued as an action.	Discontinue	This is a capability and will not be continued as an action.
	Update/review floodplain management ordinances to be consistent with potential future new FIRMs	Public Works	Complete	The Town participates in the NFIP and will update their floodplain management ordinance as new FIRMs are released.	Discontinue	
	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Public Works	No Progress	The Town is interested to pursue.	Include in 2018 HMP	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)
	Join the Community Rating System (CRS)	Public Works	No Progress	The Town is not currently in CRS but has an interest in joining.	Include in 2018 HMP	

Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The Town of Ramapo has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2010 HMP:

- Town engineers identified the location of all stormwater outflows and where they clear.
- All fire hydrants have been geolocated using a GPS.
- The Town has prepared an engineering plan to mitigate flooding in the Hershel Terrace residential neighborhood. In summary, drainage structures and nearly 1,000 linear feet of 30” and 36” pipe were installed to increase capacity.

Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Ramapo participated in a mitigation action workshop in February 2017 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).

Table 9.17-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Ramapo 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 9.17-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

Table 9.17-12. 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
Ramapo – 1 (LOI)	<p>The Quarry Ridge flood control project is a unique re-utilization of a closed stone quarry. The purpose of the flood control project is to reduce the frequency of flooding along the Mahwah River in the Squires Gate region of the Village of Suffern, NY.</p> <p>Brief summary - Divert the excess floodwater once the Mahwah River reaches flood stage at Squires Gate through automatic water level monitors and transmitters located in the Squires Gate Park adjacent to the river. The automatic system will continue to increase the diverted flow until either the maximum capacity is reached or the river begins to recede. By diverting only the minimum necessary to maintain water level at or below flood stage at Squires Gate, the available capacity of the quarry can be efficiently utilized.</p>	Both	Flood, Severe Storm, Nor'Easter	1, 2, 6	<u>Attorney's Office – Property manager</u>	High	High	Federal, State, local	Long (DOF)	Medium	SIP	PP
Ramapo - 2	Upgrade culvert in Spring Valley (upstream of Pascack Brook By-Pass Flood Mitigation Project)	Both	Flood, Severe Storm, Nor'Easter	1, 2	<u>Town Engineer, County Engineer, Village of Spring Valley</u>	High	High	FEMA HMA, State, Local	Short (DOF)	High	SIP	PP
Ramapo – 3 (Previous)	Integrate hazard mitigation	Both	All	1, 2, 3, 7	<u>Town Planning</u>	High	Medium	Local	Short (DOF)	Medium	LPR	PR



Table 9.17-12. 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
Action 1.B)	and hazard areas into local comprehensive plans; a courtesy review of draft plans by the County Planning Department.				Department, County Planning Department, Village Planning Department							
Ramapo - 4	Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	Both	All	1, 2, 3, 7	Town Engineer/DPW	High	Low	Local	Short (DOF)	Medium	EAP, LPR	PR, PP
Ramapo – 5 (Previous action 4.J)	Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	Both	Flood, Severe Storm		Town DPW, County DPW, Villages	High	High	FEMA HMA, State, Local	Short (DOF)	Medium	SIP	PP
Ramapo – 6 (Previous action number)	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	N/A	Flood, Severe Storm	3, 5, 7	Town Floodplain Administrator (Building Inspector)	High	Low	Local	Short	Low	LPR	PR
Ramapo – 7 (Previous action number)	Join the Community Rating System (CRS)	N/A	Flood, Severe Storm	3, 5, 7	Town Floodplain Administrator	High	Medium	Local	Short	Low	LPR	PR, PI
Ramapo – 8 (new LOI)	Pascack Brooke Easement - The bank erosion now threatens at a minimum one home and potentially others. Mitigation measures are now required and engineered concrete structures are needed to stabilize the banks along with erosion control measures that include plantings.	Both	Flood, Severe Storm, Severe Winter Storm	1, 2, 6	County Drainage Agency	High	Medium-High	FEMA HMA, State, Local	Short (DOF)	High	SIP	PP, SP



Table 9.17-12. 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
Ramapo – 9 (new LOI)	<p>Ensure continuity of operations of Town services.</p> <p>Purchase and install backup power at the Town fuel facility, DPW and sewer buildings.</p> <p>Install permanently mounted generators at pump stations including Rodman Place, Longbow Road, Hawk Street, Sergio Court and Bayard Lane. This project will help ensure the continued operations of the Town's Sanitary Sewer system during storm events involving power outages. Additionally, it will improve the Town's ability to respond to emergencies as the labor force and equipment will be available for assisting with other Town Emergency Protective Measures.</p>	Existing	All	1, 2, 5	<u>Town DPW</u>	High	Medium-High	FEMA HMA, State, Local	Short (DOF)	High	SIP	ES
Ramapo – 10 (new LOI)	Hatzoloh (Town-funded ambulance company) plans to set up a backup phone system that will be able to maintain the integrity of the Hatzoloh phone number at all times so that incoming calls will get through even in a state of emergency and so that dispatchers will be	N/A	All	1, 2, 5	<u>Ambulance Company Hatzoloh</u>	High	\$100,000	Federal, State, Local	Short (DOF)	High	EAP	PI, ES

Table 9.17-12. 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
	able to contact emergency responders without issues.											
Ramapo – 11 (new LOI)	Purchase equipment enabling Hatzoloh to save lives such as generators, light towers, Command Vehicles	Existing	All	1, 2	Hatzoloh Ambulance Company (Kaser and Monsey)	High	High	FEMA HMA, State, Local	State (DOF)	High	SIP	PP, ES
Ramapo-12 (Previous action, no number)	The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	N/A	All	1, 2, 7	Building Inspector/Planning Board/Zoning Board	High	Medium	Local	Short (DOF)	High	LPR	PR
Ramapo-13 (new)	Elevate the electrical components to all critical assets including the pump stations and potable wells located in the floodplain, specifically the Sewer Pump Station off Camp Hill Road and Scuffy Day Camp North Well, to the 500-year flood elevation	Existing	Flood	1, 2	DPW/Sewer Department	High	High	FEMA	Short (DOF)	High	SIP	PP

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:

CRS Community Rating System
 DPW Department of Public Works

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program
 HMGP Hazard Mitigation Grant Program

Timeline:

Short 1 to 5 years
 Long Term 5 years or greater



FEMA	Federal Emergency Management Agency	PDM	Pre-Disaster Mitigation Grant Program	OG	On-going program
FPA	Floodplain Administrator			DOF	Depending on funding
HMA	Hazard Mitigation Assistance				
N/A	Not applicable				
NFIP	National Flood Insurance Program				
OEM	Office of Emergency Management				

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
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:

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

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 9.17-13. 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
Ramapo - 1 (LOI)	The Quarry Ridge flood control project is a unique re-utilization of a closed stone quarry. The purpose of the flood control project is to reduce the frequency of flooding along the Mahwah River in the Squires Gate region of the Village of Suffern, NY.	1	1	1	1	0	0	0	1	1	1	1	1	1	1	11	Medium
Ramapo - 2	Upgrade culvert in Spring Valley	1	1	1	1	0	1	0	1	1	1	1	1	1	1	12	High
Ramapo - 3	Work with municipalities to integrate hazard mitigation and hazard areas into local comprehensive plans; a courtesy review of draft plans by the County Planning Department.	0	1	1	1	1	1	0	0	1	1	1	1	1	0	11	Medium
Ramapo - 4	Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	0	1	1	1	1	1	0	0	1	1	1	1	1	0	10	Medium
Ramapo - 5	Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under	1	1	1	1	0	0	0	0	1	1	1	1	1	1	12	Medium

Table 9.17-13. 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
	the leadership of County DPW.																
Ramapo - 6	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	0	0	1	1	1	1	0	0	1	1	1	1	1	0	9	Low
Ramapo - 7	Join the Community Rating System (CRS)	0	0	1	1	1	1	0	0	1	1	1	1	1	0	9	Low
Ramapo – 8 (LOI)	Pascack Brooke Easement - The bank erosion now threatens at a minimum one home and potentially others. Mitigation measures are now required and engineered concrete structures are needed to stabilize the banks along with erosion control measures that include plantings.	1	1	1	1	0	0	0	1	1	1	1	1	1	1	11	High
Ramapo – 9 (LOI)	Install permanently mounted generators at pump stations including Rodman Place, Longbow Road, Hawk Street, Sergio Court and Bayard Lane. This project will help ensure the continued operations of the Town's Sanitary	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High



Table 9.17-13. 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
	Sewer system during storm events involving power outages. Additionally, it will improve the Town's ability to respond to emergencies as the labor force and equipment will be available for assisting with other Town Emergency Protective Measures.																
Ramapo – 10 (LOI)	Hatzoloh plans to set up a backup phone system that will be able to maintain the integrity of the Hatzoloh phone number at all times so that incoming calls will get through even in a state of emergency and so that dispatchers will be able to contact emergency responders without issues.	1	1	1	1	0	0	0	1	1	1	1	1	1	1	11	High
Ramapo – 11 (LOI)	Purchase equipment enabling Hatzoloh to save lives such as generators, light towers, Command Vehicles	1	1	1	1	0	1	0	0	1	1	1	1	1	1	11	High
Ramapo-12 (Previous action,	The Town would like to review and	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High



Table 9.17-13. 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
no number)	potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.																
Ramapo-13	Elevate the electrical components to all critical assets including the pump stations and potable wells located in the floodplain, specifically the Sewer Pump Station off Camp Hill Road and Scuffy Day Camp North Well, to the 500-year flood elevation	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions.

9.17.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

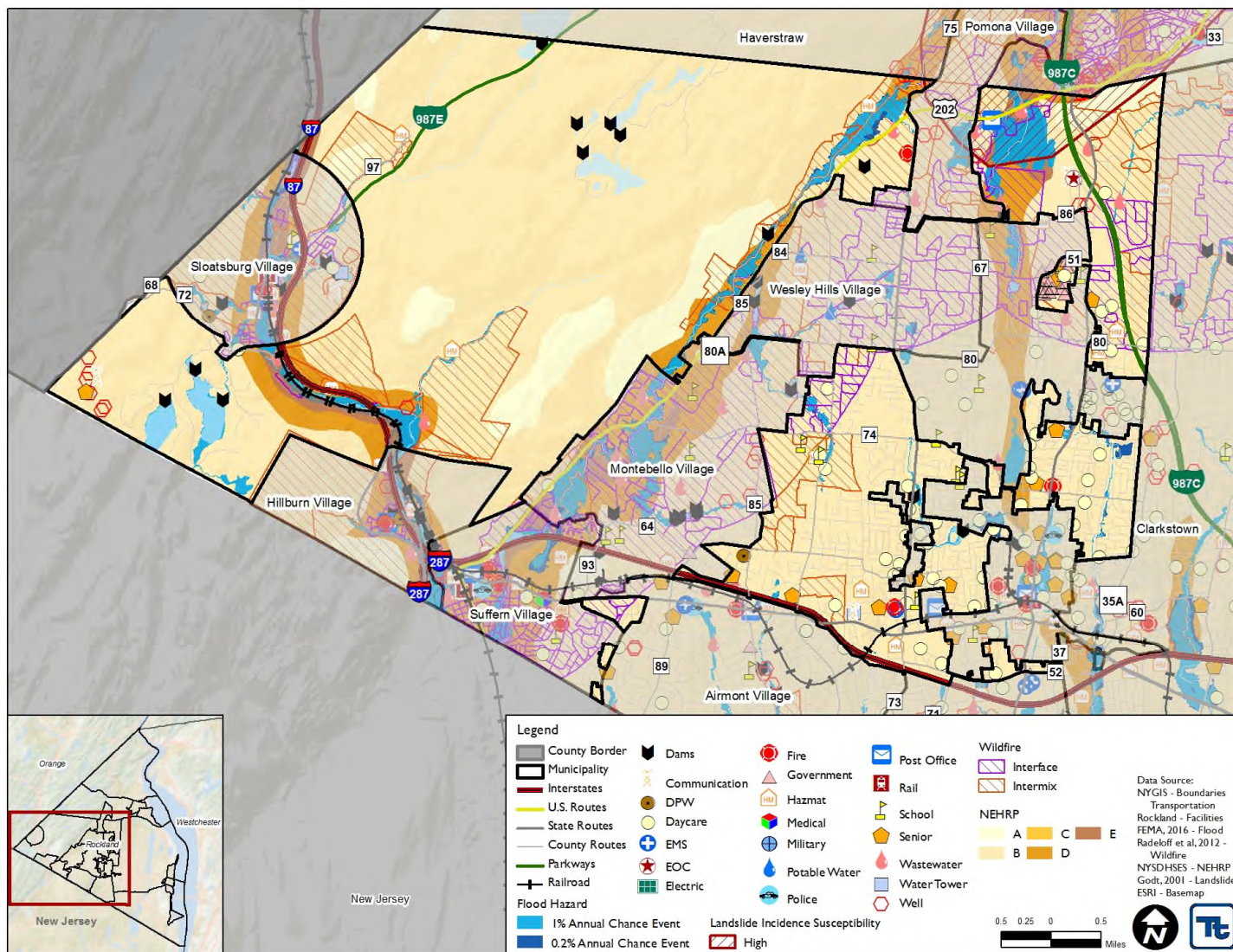
9.17.8 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Town of Ramapo 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 Town of Ramapo has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.17.9 Additional Comments

None at this time.

Figure 9.17-1. Town of Ramapo Hazard Area Extent and Location Map 1



Action Number: Ramapo – 1 (LOI)
Mitigation Action Name: Quarry Ridge flood control project

Assessing the Risk	
Hazard(s) addressed:	Flood, Severe Storm, Nor'Easter
Specific problem being mitigated:	Flooding along the Mahwah River in the Squires Gate region of the Village of Suffern - floods frequently
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Move buildings and infrastructure exposed to flooding – not feasible
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Quarry Ridge flood control project is a unique re-utilization of a closed stone quarry. The purpose of the flood control project is to reduce the frequency of flooding along the Mahwah River in the Squires Gate region of the Village of Suffern, NY. Brief summary - Divert the excess floodwater once the Mahwah River reaches flood stage at Squires Gate through automatic water level monitors and transmitters located in the Squires Gate Park adjacent to the river. The automatic system will continue to increase the diverted flow until either the maximum capacity is reached or the river begins to recede. By diverting only the minimum necessary to maintain water level at or below flood stage at Squires Gate, the available capacity of the quarry can be efficiently utilized.
Mitigation Action Type	SIP
Goals Met	1, 2, 6
Applies to existing and or new development, or not applicable	Both
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	Medium
Plan for Implementation	
Responsible Organization	Attorney's Office – Property manager
Local Planning Mechanism	Hazard Mitigation, Capital Improvement
Potential Funding Sources	Federal, State, local
Timeline for Completion	Long (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number: Ramapo – 1 (LOI)
Mitigation Action Name: Quarry Ridge flood control project

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Improves capacity of the quarry
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	Need funding
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm, Nor'Easter
Timeline	1	Long-Term – depends on funding
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (H/M/L)	Medium	

Action Number:

Ramapo - 2

Mitigation Action Name:

Upgrade culvert in Spring Valley (upstream of Pascack Brook By-Pass Flood Mitigation Project)

Assessing the Risk	
Hazard(s) addressed:	Flood, Severe Storm, Nor'Easter
Specific problem being mitigated:	Inadequate culvert in Spring Valley
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Remove culvert and move roadway – not feasible
Action/Project Intended for Implementation	
Description of Selected Action/Project	Upgrade culvert in Spring Valley (upstream of Pascack Brook By-Pass Flood Mitigation Project)
Mitigation Action Type	SIP
Goals Met	1, 2
Applies to existing and or new development, or not applicable	Both
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	High
Plan for Implementation	
Responsible Organization	Town Engineer, County Engineer, Village of Spring Valley
Local Planning Mechanism	Hazard Mitigation, Capital Improvement
Potential Funding Sources	FEMA HMA, State, Local
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number:
Mitigation Action Name:

Ramapo - 2
 Upgrade culvert in Spring Valley (upstream of Pascack Brook By-Pass Flood Mitigation Project)

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Reduce flooding impacts to residents
Property Protection	1	Protect structures from future flood damage
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm, Nor'Easter
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	12	
Priority (H/M/L)	High	

Action Number: Ramapo – 3 (Previous Action 1.B)
Mitigation Action Name: Integrate hazard mitigation and hazard areas into local comprehensive plans; a courtesy review of draft plans by the County Planning Department.

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	The current comprehensive plan does not integrate hazard mitigation or hazard areas
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Request review from local colleges – may not be feasible/willing and will require funding
Action/Project Intended for Implementation	
Description of Selected Action/Project	Integrate hazard mitigation and hazard areas into local comprehensive plans; a courtesy review of draft plans by the County Planning Department.
Mitigation Action Type	LPR
Goals Met	1, 2, 3, 7
Applies to existing and or new development, or not applicable	Both
Benefits (losses avoided)	High
Estimated Cost	Medium
Priority*	Medium
Plan for Implementation	
Responsible Organization	Town Planning Department, County Planning Department, Village Planning Department
Local Planning Mechanism	Hazard Mitigation
Potential Funding Sources	Local
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number:

Ramapo – 3 (Previous Action 1.B)

Mitigation Action Name:

Integrate hazard mitigation and hazard areas into local comprehensive plans; a courtesy review of draft plans by the County Planning Department.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	0	
Social	1	
Administrative	1	Municipal staff will be involved in the update
Multi-Hazard	1	All hazards
Timeline	1	
Agency Champion	1	
Other Community Objectives	0	
Total	11	
Priority (H/M/L)	Medium	

Action Number: Ramapo - 4

Mitigation Action Name: Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Currently, the Town does have a program to discuss zoning and planning issues that arise as a result of natural hazards and hazard mitigation.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Rely on outside groups to conduct public outreach – may not be sustainable and costly
Action/Project Intended for Implementation	
Description of Selected Action/Project	Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.
Mitigation Action Type	EAP, LPR
Goals Met	1, 2, 3, 7
Applies to existing and or new development, or not applicable	Both
Benefits (losses avoided)	High
Estimated Cost	Low
Priority*	Medium
Plan for Implementation	
Responsible Organization	Town Engineer/DPW
Local Planning Mechanism	Hazard Mitigation
Potential Funding Sources	Local
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number:

Ramapo - 4

Mitigation Action Name:

Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Improve future development
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	0	
Social	1	
Administrative	1	Municipal staff
Multi-Hazard	1	All hazards
Timeline	1	
Agency Champion	1	
Other Community Objectives	0	
Total	10	
Priority (H/M/L)	Medium	

Action Number:

Ramapo – 5 (Previous action 4.J)

Mitigation Action Name:

Develop specific mitigation solutions for floodprone road systems

Assessing the Risk	
Hazard(s) addressed:	Flood, Severe Storm
Specific problem being mitigated:	Floodprone roadways in the Town - need to develop solutions to resolve the issue
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Move floodprone roadways – not feasible
Action/Project Intended for Implementation	
Description of Selected Action/Project	Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.
Mitigation Action Type	SIP
Goals Met	
Applies to existing and or new development, or not applicable	Both
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	Medium
Plan for Implementation	
Responsible Organization	Town DPW, County DPW, Villages
Local Planning Mechanism	Hazard Mitigation
Potential Funding Sources	FEMA HMA, State, Local
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number: Ramapo – 5 (Previous action 4.J)
Mitigation Action Name: Develop specific mitigation solutions for floodprone road systems

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Protect infrastructure from future flood damage
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	Need funding
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	12	
Priority (H/M/L)	Medium	

Action Number: Ramapo – 6 (Previous action no number)

Mitigation Action Name: Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)

Assessing the Risk	
Hazard(s) addressed:	Flood, Severe Storm
Specific problem being mitigated:	Floodplain management and ordinance enforcement staff are not Certified Floodplain Managers
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Have staff attend courses on floodplain management but not become CFM's – lack of recognition from national organization. CRS awards points for CFM's
Action/Project Intended for Implementation	
Description of Selected Action/Project	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)
Mitigation Action Type	LPR
Goals Met	3, 5, 7
Applies to existing and or new development, or not applicable	N/A
Benefits (losses avoided)	High
Estimated Cost	Low
Priority*	Low
Plan for Implementation	
Responsible Organization	Town Floodplain Administrator(Building Inspector)
Local Planning Mechanism	Hazard Mitigation, Floodplain Management
Potential Funding Sources	Local
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number: Ramapo – 6 (Previous action no number)
Mitigation Action Name: Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Need funding
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	
Agency Champion	1	
Other Community Objectives	0	
Total	9	
Priority (H/M/L)	Low	

Action Number: Ramapo – 7 (Previous action no number)
Mitigation Action Name: Join the Community Rating System (CRS)

Assessing the Risk	
Hazard(s) addressed:	Flood, Severe Storm
Specific problem being mitigated:	The Town is currently not in the CRS program.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Create municipal program to go above and beyond the requirements of NFIP – no flood insurance premium discounts
Action/Project Intended for Implementation	
Description of Selected Action/Project	Join the Community Rating System (CRS)
Mitigation Action Type	LPR
Goals Met	3, 5, 7
Applies to existing and or new development, or not applicable	N/A
Benefits (losses avoided)	High
Estimated Cost	Medium
Priority*	Low
Plan for Implementation	
Responsible Organization	Town Floodplain Administrator
Local Planning Mechanism	Hazard Mitigation, Floodplain Management
Potential Funding Sources	Local
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number: Ramapo – 7 (Previous action no number)
Mitigation Action Name: Join the Community Rating System (CRS)

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Need funding
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	
Agency Champion	1	
Other Community Objectives	0	
Total	9	
Priority (H/M/L)	Low	

Action Number:

Ramapo – 8 (new LOI)

Mitigation Action Name:

Pascack Brooke Easement

Assessing the Risk	
Hazard(s) addressed:	Flood, Severe Storm, Severe Winter Storm
Specific problem being mitigated:	The bank erosion threatens at a minimum one home and potentially others
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Buyout houses impacted by bank erosion - costly
Action/Project Intended for Implementation	
Description of Selected Action/Project	Pascack Brooke Easement - The bank erosion now threatens at a minimum one home and potentially others. Mitigation measures are now required and engineered concrete structures are needed to stabilize the banks along with erosion control measures that include plantings.
Mitigation Action Type	SIP
Goals Met	1, 2, 6
Applies to existing and or new development, or not applicable	Both
Benefits (losses avoided)	High
Estimated Cost	Medium-High
Priority*	High
Plan for Implementation	
Responsible Organization	County Drainage Agency
Local Planning Mechanism	Hazard Mitigation, Capital Improvement
Potential Funding Sources	FEMA HMA, State, Local
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number: Ramapo – 8 (new LOI)
Mitigation Action Name: Pascack Brooke Easement

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect homes and residents in this area
Property Protection	1	Protect homes and residents in this area
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	Need funding
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm, Severe Winter Storm
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (H/M/L)	High	

Action Number: Ramapo – 9 (new LOI)
Mitigation Action Name: Install permanently mounted generators at pump stations including Rodman Place, Longbow Road, Hawk Street, Sergio Court and Bayard Lane.

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	The Town does not have backup power at several pump stations and in the event of a power outage, the pump stations will not function properly.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Install solar panels – cost, weather dependent
Action/Project Intended for Implementation	
Description of Selected Action/Project	Install permanently mounted generators at pump stations including Rodman Place, Longbow Road, Hawk Street, Sergio Court and Bayard Lane. This project will help ensure the continued operations of the Town's Sanitary Sewer system during storm events involving power outages. Additionally, it will improve the Town's ability to respond to emergencies as the labor force and equipment will be available for assisting with other Town Emergency Protective Measures.
Mitigation Action Type	SIP
Goals Met	1, 2, 5
Applies to existing and or new development, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	Medium-High
Priority*	High
Plan for Implementation	
Responsible Organization	Town DPW
Local Planning Mechanism	Hazard Mitigation, Emergency Management
Potential Funding Sources	FEMA HMA, State, Local
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number:

Ramapo – 9 (new LOI)

Mitigation Action Name:

Install permanently mounted generators at pump stations including Rodman Place, Longbow Road, Hawk Street, Sergio Court and Bayard Lane.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Allow pumps to run in the event of a power outage
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Need funding
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	12	
Priority (H/M/L)	High	

Action Number:

Ramapo – 10 (new LOI)

Mitigation Action Name:

Hatzoloh (Town-funded ambulance company) plans to set up a backup phone system

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Hatzoloh does not have a backup phone system. In the event of an emergency, there can be issues with connecting to emergency responders.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Rely on radio system – not preferred solution
Action/Project Intended for Implementation	
Description of Selected Action/Project	Hatzoloh (Town-funded ambulance company) plans to set up a backup phone system that will be able to maintain the integrity of the Hatzoloh phone number at all times so that incoming calls will get through even in a state of emergency and so that dispatchers will be able to contact emergency responders without issues.
Mitigation Action Type	EAP
Goals Met	1, 2, 5
Applies to existing and or new development, or not applicable	N/A
Benefits (losses avoided)	High
Estimated Cost	100000
Priority*	High
Plan for Implementation	
Responsible Organization	Ambulance Company Hatzoloh
Local Planning Mechanism	Hazard Mitigation, Emergency Management
Potential Funding Sources	Federal, State, Local
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number: Ramapo – 10 (new LOI)
Mitigation Action Name: Hatzoloh (Town-funded ambulance company) plans to set up a backup phone system

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Enhances the lifesaving capabilities of Hatzoloh
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	0	Need funding
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (H/M/L)	High	

Action Number: Ramapo – 11 (new LOI)
Mitigation Action Name: Purchase equipment enabling Hatzoloh to save lives such as generators, light towers, Command Vehicles

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Inadequate equipment for Hatzoloh
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Explore sharing equipment with neighboring towns – need own equipment to adequately respond in emergency events
Action/Project Intended for Implementation	
Description of Selected Action/Project	Purchase equipment enabling Hatzoloh to save lives such as generators, light towers, Command Vehicles
Mitigation Action Type	SIP
Goals Met	1, 2
Applies to existing and or new development, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	High
Plan for Implementation	
Responsible Organization	Hatzoloh Ambulance Company (Kaser and Monsey)
Local Planning Mechanism	Hazard Mitigation, Emergency Management
Potential Funding Sources	FEMA HMA, State, Local
Timeline for Completion	State (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number:

Ramapo – 11 (new LOI)

Mitigation Action Name:

Purchase equipment enabling Hatzoloh to save lives such as generators, light towers, Command Vehicles

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Enhances the lifesaving capabilities of Hatzoloh
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	Need funding
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (H/M/L)	High	

Action Number: Ramapo-12 (Previous action, no number)
Mitigation Action Name: The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Current codes and ordinances do not identify hazards
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Encourage residents to address hazards but do not implement as part of code – sporadic impact
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.
Mitigation Action Type	LPR
Goals Met	1, 2, 7
Applies to existing and or new development, or not applicable	N/A
Benefits (losses avoided)	High
Estimated Cost	Medium
Priority*	High
Plan for Implementation	
Responsible Organization	Building Inspector/Planning Board/Zoning Board
Local Planning Mechanism	Hazard Mitigation
Potential Funding Sources	Local
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number: Ramapo-12 (Previous action, no number)
Mitigation Action Name: The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards

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	Municipal budget
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	14	
Priority (H/M/L)	High	

Action Number: Ramapo-13 (new)
Mitigation Action Name: Elevate the electrical components to all critical assets located in the floodplain

Assessing the Risk	
Hazard(s) addressed:	Flood
Specific problem being mitigated:	The Town owns critical assets located in the floodplain that become inundated during flood events.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing - current problem continues Move critical facilities outside of floodplain – not feasible
Action/Project Intended for Implementation	
Description of Selected Action/Project	Elevate the electrical components to all critical assets including the pump stations and potable wells located in the floodplain, specifically the Sewer Pump Station off Camp Hill Road and Scuffy Day Camp North Well, to the 500-year flood elevation
Mitigation Action Type	SIP
Goals Met	1, 2
Applies to existing and or new development, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	High
Plan for Implementation	
Responsible Organization	DPW/Sewer Department
Local Planning Mechanism	Hazard Mitigation, Emergency Management
Potential Funding Sources	FEMA
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

Action Number:

Ramapo-13 (new)

Mitigation Action Name:

Elevate the electrical components to all pump stations, specifically the Sewer Pump Station off Camp Hill Road

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Allow pump stations to operate in the event of flood events
Property Protection	1	Reduce/eliminate flood damage to pump stations
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Need funding
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	13	
Priority (H/M/L)	High	