

SECTION 9. JURISDICTIONAL ANNEXES

9.21 VILLAGE OF SUFFERN

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Village of Suffern with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of the Village of Suffern, describes who participated in the planning process, assesses the Village’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.21.1 Hazard Mitigation Planning Team

The Village of Suffern identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments. The Mayor represented the community on the Rockland County HMP Planning Partnership and Steering Committee and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Table 9.21-1 summarizes Village officials who participated in the development of the annex and in what capacity. Additional documentation of the Village’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.21-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Michael Curely, Mayor Address: 61 Washington Avenue, Suffern NY 10901 Phone Number: (845) 357-2600 Email: mcurely@suffernny.gov	Name/Title: Charles Sawicki, Director of Public Works Address: 61 Washington Avenue, Suffern NY 10901 Phone Number: (845) 357-2602 Email: csawicki@suffernny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Charles Sawicki, Director of Public Works Address: 61 Washington Avenue, Suffern NY 10901 Phone Number: (845) 357-2602 Email: csawicki@suffernny.gov	
Additional Contributors	
Name/Title: Charles Sawicki, Director of Public Works Method of Participation: Completed mitigation strategy input, reviewed draft annex	
Name/Title: Danielle Curtin, Department of Public Works Clerk Method of Participation: Completed mitigation strategy input, completed action review, completed hazard event history and NFIP surveys, reviewed draft annex	
Name/Title: Michael Curely, Mayor Method of Participation: Reviewed draft annex	

9.21.2 Municipal Profile

The Village of Suffern is located along the southern border of the Town of Ramapo in Rockland County. It is approximately 2.1 square miles in size and bordered to the north by the Town of Ramapo and the Village of Montebello, to the south by New Jersey, to the east by the Village of Airmont and to the west by the Village of Hillburn (Rockland County 2018). Both the Ramapo River and Mahwah River flow through the Village. The Ramapo River Watershed encompasses the entire Village.

The New York State Thruway passes through the Village, as does I-287. The area is served by New Jersey Transit and Metro-North Railroad commuter lines which stop at the Suffern train station. Freight rail also passes through the Village.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2017-2021 American Community Survey indicates that 4.3 percent of the population is five years of age or younger, 20.4 percent is 65 years of age or older, 7.6 percent is non-English speaking, 6.2 percent is below the poverty threshold, and 9.7 percent is considered disabled.

9.21.3 Jurisdictional Capability Assessment and Integration

The Village of Suffern performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for the Village of Suffern to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.21-2 summarizes the regulatory tools that are available to the Village of Suffern.

Table 9.21-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Codes, Ordinances, & Regulations				
Building Code	Yes	Chapter 96 Building Construction and Fire Prevention	State, Local	Fire Inspector, Building Inspector, Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The intent of this code is to prescribe minimum requirements necessary to establish a reasonable level of life safety and property protection from the hazards created by fire and explosion. This code is designed to supplement and expand upon the requirements of the New York State Uniform Fire Prevention and Building Code. Should there be a discrepancy between this code and the New York State Uniform Fire Prevention and Building Code, the more restrictive provision shall apply.				
Zoning/Land Use Code	Yes	Chapter 266 Zoning	Local	Zoning Board of Appeals, Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Under the authority granted by § 7-700 of the Village Law as amended, §§ 10, Subdivision 1(ii)e, of the Municipal Home Rule Law and § 10, Subdivision 6, of the Statute of Local Governments, the Board of Trustees of the Village of Suffern hereby adopts this chapter, hereinafter referred to as the "Zoning Law," to promote the purposes set forth in § 7-704 of the Village Law. Among the stated purposes, the Zoning Law aims to reduce stormwater runoff that worsens flooding and to create a hospital climate for the pursuit of happiness. It has ordinances aiming to limit development in floodplains, protect wetlands, and to connect open spaces to the greatest extent possible.				
Subdivision Code	Yes	Chapter 239 Subdivision of Land	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> This ordinance is currently under review for possible revision and updating. The cluster technique shall be considered for all properties shown on the Critical Environmental Area Map adopted as part of the Zoning Law.				
Site Plan Code	Yes	Chapter 266 Zoning, Article X Site Plan Approval; Chapter 228 Site Plan Regulations	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Approval of a site plan by the Planning Board is required for the development or redevelopment of any property or structure for a new use, the expansion or relocation of any existing use or a change of use. In considering and acting upon site plans, the Planning Board shall take into consideration the recommendations of the Village Development Plan, the public health, safety and welfare, the comfort and convenience of the public in general and of the residents, employees, visitors, and patrons of the proposed development and of the immediate neighborhood in particular. The Planning Board considers several criteria, including the site's topography, adequate stormwater drainage systems to prevent periodic or continuous downstream flooding, and physical constraints imposed by natural resources, among others.				
Stormwater Management Code	Yes	Chapter 233 Stormwater Management	Local	Department of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of this article 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 Village of Suffern and to address the findings of fact in § 233-1 hereof. One of the stated objectives of the ordinance is to minimize increases in stormwater runoff rates and volumes from land development activities to reduce flooding and streambank erosion.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Real Estate Disclosure	Yes	New York State (NYS) mandate, Property Condition Disclosure Act, NY Code – Article 14 §460-467	State, Local	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS mandate requires sellers to disclose to potential buyers whether their property is located in a designated floodplain.				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Environmental Protection Ordinance	Yes	Chapter 266 Zoning, Article IV General Regulations	Local	Board of Trustees, Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of the Critical Environmental Area Overlay District is to provide an additional measure of review of development proposals on those remaining undeveloped and underdeveloped lands with sensitive environmental features, and to encourage flexibility in layout to best protect sensitive environmental features and to minimize adverse environmental impacts on neighboring properties or the Village as a whole. All uses in the Critical Environmental Area Overlay District require the issuance of a special permit by the Board of Trustees pursuant. The cluster technique shall be considered for all properties shown on the Critical Environmental Area Map adopted as part of the Zoning Law.				
Flood Damage Prevention Ordinance	Yes	Chapter 141 Flood Damage Prevention	Federal, State, Local	Director of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of the Floodplain District is to protect the health, safety, and welfare of the inhabitants of the Village of Suffern from hazards due to periodic flooding. No structure (temporary or permanent), fill for any purpose, deposit, obstruction, storage of materials or equipment or other uses shall be permitted which, acting alone or in combination with existing or future uses, will adversely affect the efficiency or the capacity of the floodway or increase flood heights, cause increased velocities, or obstruct or otherwise catch or collect debris which will obstruct flow under flood conditions. If a proposed development lies in the floodway, the Planning Board will not grant a permit except if it shall not be habituated by humans, have low flood damage potential, minimizes obstruction to floodwater flood, be anchored to prevent floatation, and construct utilities above base flood elevation or to be floodproof. Development that lies in the fringe of the floodway ("flood fringe area") must meet additional requirements, including being built with one foot of freeboard.				
Wellhead Protection	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Emergency Management Ordinance(s)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Change Ordinance	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other: Freeboard	Yes	Chapter 141 Flood Damage Prevention	State, Local	Director of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> New York State requires new one- and two-family residences to be built with two feet of freeboard and all other construction types with one foot of freeboard. The Village's Floodplain District requires that any structure built on pilings or fill shall be constructed with the lowest floor elevated to at least one foot about the base flood elevation.				
Other: Cumulative Substantial Damage	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Planning Documents				
General/Comprehensive Plan	Yes	Village of Suffern Comprehensive Land Use Plan, 2023	Local	Village Clerk
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Village is currently developing a new Village-wide Comprehensive Plan pursuant to NYS Village Law §7-722, for the purposes of long-term land use planning and zoning analysis consistent with the suburban nature of existing uses throughout the Village. The new plan will include goals and policy recommendations to make the Village more sustainable and climate change resilient through such as building standards, renewable energy, stormwater management, water conservation, and waste minimization and natural landscape preservation.				
Capital Improvement Plan	Yes	Adopted Budgets FY Ending 2024	Local	Village Board, Finance Department
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The adopted budget includes a list of proposed capital projects for the Village of Suffern. These projects represent assets that have higher project costs and will ensure resource longevity. Listed projects may include emergency power generators, multiple trucks with plows, or infrastructure improvements.				
Disaster Debris Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Floodplain Management or Watershed Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Stormwater Management Plan	Yes	Stormwater Annual Report 2023	Local	Department of Public Works
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Stormwater Report records the efforts of the Department of Public Works to fulfill its Stormwater Management Program Plan goals throughout the calendar year. It includes observation such as how many violations occur annual, how many acres are disturbed due to construction, and identification of drainage facilities issues.				
Open Space Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Urban Water Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Habitat Conservation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Economic Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Community Wildfire Protection Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Community Forest Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Transportation Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Agriculture Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Tourism Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Business/ Downtown Development Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Other (for example NYRCR, etc.)	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Response/Recovery Planning				
Comprehensive Emergency Management Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Continuity of Operations Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Substantial Damage Response Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Threat & Hazard Identification & Risk Assessment	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> No				
Post-Disaster Recovery Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
Public Health Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

Development and Permitting Capability

Table 9.21-3 summarizes the capabilities of the Village of Suffern to oversee and track development.

Table 9.21-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Village of Suffern Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain development
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	No	-
Describe the level of build-out in your jurisdiction.	N/A	The Village is fully built out.

Administrative and Technical Capability

Table 9.21-4 summarizes potential staff and personnel resources available to the Village of Suffern and their current responsibilities that contribute to hazard mitigation.

Table 9.21-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<i>Administrative Capability</i>		
Planning Board	Yes	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 Adjustment	Yes	The Zoning Board considers appeals for variances from the zoning ordinance, appeals of the Building Inspector, special permit applications and requests for zoning interpretations.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Department of Public Works is responsible for the delivery of various Village services to the Public. Three main divisions make up the Department of Public Works: Street & Refuse, Water & Sewer and Waste Water Treatment.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Construction/Building/Code Enforcement Department	Yes	Building Department services include Building Inspection, Zoning Regulation, Code Enforcement, Fire Inspection, and Property Maintenance.
Emergency Management/Public Safety Department	Yes	The Suffern Fire Department, organized in 1900, is an all-volunteer organization, and divided into two Companies, Suffern Hook & Ladder Co #1 and the Volunteer Hose Co #1. The Suffern Police Department features a Patrol Division, Detective Bureau, K-9 Unit, Bicycle Patrol, DARE Unit and a Community Policing Unit.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Department of Public Works
Mutual aid agreements	Yes	Fire and Police Departments
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planner consultant
Engineers or professionals trained in building or infrastructure construction practices	Yes	Department of Public Works
Planners or engineers with an understanding of natural hazards	Yes	Planner consultant
Staff with expertise or training in benefit/cost analysis	Yes	Department of Public Works
Professionals trained in conducting damage assessments	Yes	Chief Building Inspector
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	No	-
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager	Yes	Police Chief
Grant writer(s)	Yes	Consultant
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.21-5 summarizes financial resources available to the Village of Suffern.

Table 9.21-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes
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	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	Yes - Consolidated Local Street and Highway Improvement Program (CHIPs) through NYSDOT
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

Education and Outreach Capability

Table 9.21-6 summarizes the education and outreach resources available to the Village of Suffern.

Table 9.21-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	Yes	The Village maintains a website that provides links to the various municipal departments, local laws and planning documents, Village newsletter, news updates, and links to local, county, state and federal governments. Additionally, the Village provides flood awareness safety tips, high wind safety tips and winter safety tips to its residents.
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it).
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	See below

Outreach Resources	Available? (Yes/No)	Comment:
If yes, please describe.	-	The Village maintains a website that provides links to the various municipal departments, local laws and planning documents, Village newsletter, news updates, and links to local, county, state and federal governments. Additionally, the Village provides flood awareness safety tips, high wind safety tips and winter safety tips to its residents.

Community Classifications

Table 9.21-7 summarizes classifications for community programs available to the Village of Suffern.

Table 9.21-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	Yes	9	5/1/2018
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	-	-
New York State Department of Environmental Conservation (NYSDEC) Climate Smart Community	No	-	-
National Weather Service Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
 — = Unavailable

Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 9.21-8 summarizes the adaptive capacity for each identified hazard of concern and the Village’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist; but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.21-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.21.4 National Flood Insurance Program Compliance

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9.21-1 is responsible for maintaining this information.

NFIP Summary

Table 9.21-9 summarizes the NFIP statistics for the Village of Suffern.

Table 9.21-9. The Village of Suffern NFIP Summary of Policy and Claim Statistics

# Policies	62
# Claims (Losses)	432
Total Loss Payments	\$4,914,588
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	29
# Severe Repetitive Loss Properties	4
# Policies Within the 1 percent Annual Chance Flood Boundary	3

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.

FMA Definition of Repetitive Loss: FEMA’s Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, December 2023

Note: RL count may include properties also identified as SRL.

Flood Vulnerability Summary

Table 9.21-10 provides a summary of the NFIP program in the Village of Suffern.

Table 9.21-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Lonergan Drive, Temple Lane, Spicer Road, South Street, Ruby Street, Ed Fagan Drive, Pat Malone Drive, Brook Street
Do you maintain a list of properties that have been damaged by flooding?	Yes

NFIP Topic	Comments
Do you maintain a list of property owners interested in flood mitigation?	Yes
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Several, but the list is not broken down.
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what projects are underway. 	No
How do you make Substantial Damage determinations?	Percentage of total value 50 percent or greater
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Zero
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"> If there are mitigation properties, how were the projects funded? 	63
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Department of Public Works
Are any certified floodplain managers on staff in your jurisdiction?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit Review
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Damage greater than 5 percent of value of structure.
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state the violations. 	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	April 20, 2022
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 141- Flood Damage Prevention LL No. 14-2013.
What is the date that your flood damage prevention ordinance was last amended?	2013
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Yes

NFIP Topic	Comments
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Planning Board and Zoning Board consider all efforts to reduce flood risks when reviewing variances such as height restrictions.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Currently participate in the CRS Program.

9.21.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9.21-11 through Table 9.21-13.

Table 9.21-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			Total
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	
2018				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2019				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	1	0	1
Permits within SFHA	0	0	0	0
2022				
Total Permits	1	1	0	2
Permits within SFHA	0	0	0	0

SFHA = Special Flood Hazard Area (1 percent flood event)

Table 9.21-12. Recent Major Development and Infrastructure from 2018 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
New Antrim Point	Apt. Building	52	176 Lafayette Ave Suffern NY 10901	None	Completed
Washington Mews	Apt. Building	60	15 Washington Ave Suffern NY 10901	None	Almost Completed

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.21-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Brookfield Property	Industrial	3 Structures	25 Old Mill Road Suffern NY 10901	AE, X	Planning Stages

* Only location-specific hazard zones or vulnerabilities identified.

9.21.6 Jurisdictional Risk Assessment

The hazard profiles in Volume I provide detailed information regarding each planning partner’s vulnerability to the identified hazards, including summaries of the Village of Suffern risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Village are shown in Figure 9.21-1 through Figure 9.21-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Suffern has significant exposure. The maps show the location of potential new development, where available.

Figure 9.21-1. Village of Suffern Flood and Dam Inundation Hazard Area Extent and Location

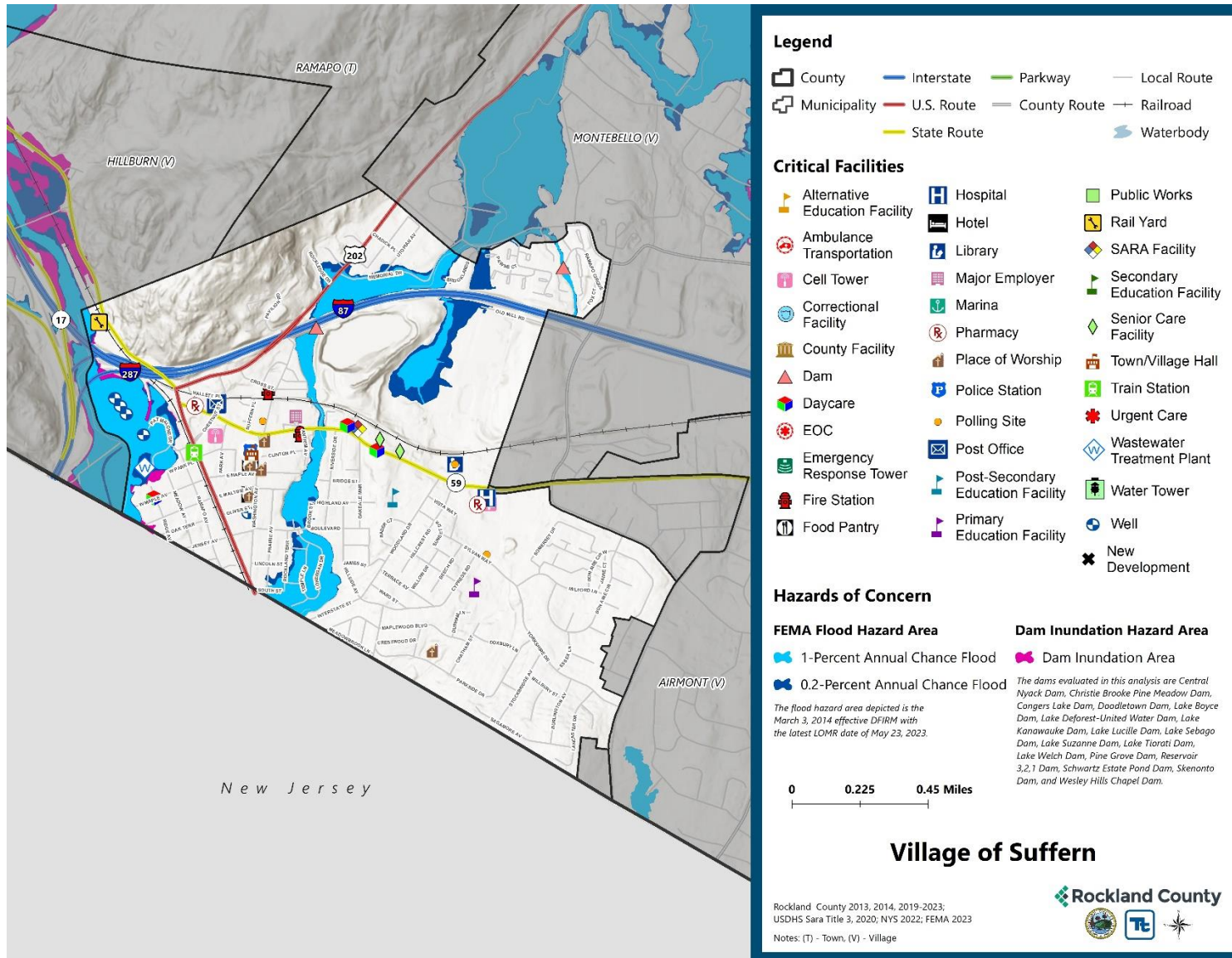
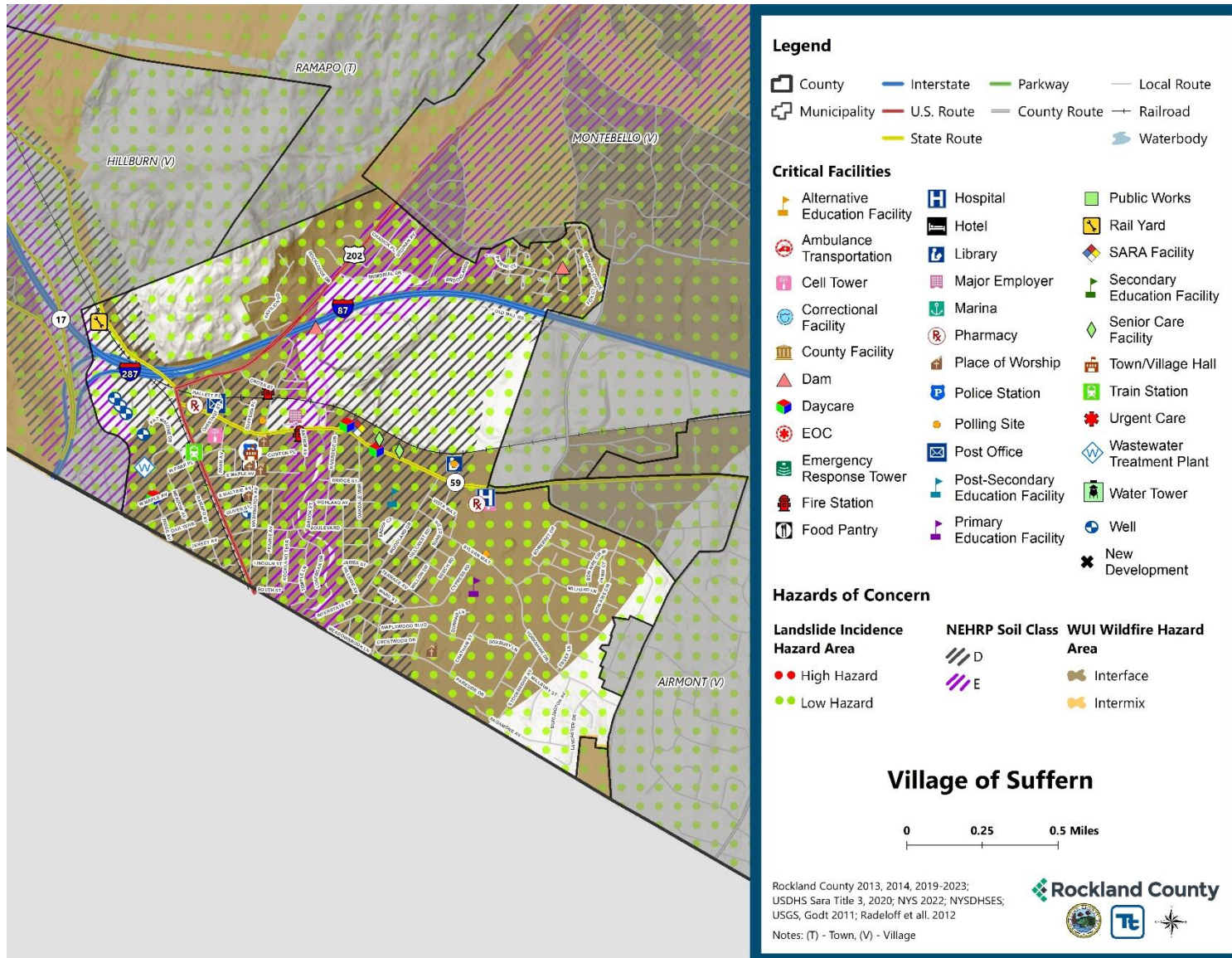


Figure 9.21-2. Village of Suffern Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Village of Suffern is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.21-14 provides details on loss and damage in the Village during hazard events since the last hazard mitigation plan update.

Table 9.21-14. Hazard Event History in the Village of Suffern

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses
Jan 20, 2020 - May 11, 2023	New York Covid-19 (3434-EM-NY, 4480-DR-NY)	Yes	The Covid-19 pandemic resulted in nationwide shutdowns, social distancing and masking requirements, and immunization efforts. Since the start of the pandemic, roughly 950 deaths have been reported in Rockland County. The federal Public Health Emergency expired in May 2023, but illness continues to occur as the virus shifts to becoming endemic.	The Village followed State mandates of social distancing and masking.
August 4, 2020	New York Tropical Storm Isaias (4567-DR-NY)	Yes	The center of Isaias passed about 65 miles west of New York City at 3 pm on August 4, 2020. Tropical storm force winds extended well east of the center of circulation. In addition, 1 to 3 inches of rainfall, highest west, were recorded across the county. These types of winds and rainfall across the area resulted in numerous trees and tree limbs being downed, power outages, damages to homes and automobiles, and disruption to transit.	Winds and rainfall caused damage and power outages to pumps at Water Treatment Plant. Numerous trees were downed requiring emergency protective measures.
September 1-3, 2021	New York Remnants of Hurricane Ida (3572-EM-NY, 4615-DR-NY)	Yes	Extremely heavy rainfall associated with the remnants of Hurricane Ida overspread southeast New York during the evening of September 1 and continued through the early morning hours of September 2. Rainfall totals ranged from 5-8 inches across much of the region, with much of that rain falling in just a few hours. This resulted in widespread catastrophic flash flooding.	Flooding caused extensive damage to Village roadways, parks, and athletic fields. Roads were closed and extensive debris clean-up was needed requiring emergency protective measures.
July 9-10, 2023	Severe Storm, Flooding	No	Severe storms and flooding resulted in road closures, including portions of the Palisades Interstate Parkway, throughout Rockland County.	Flooding resulted in road closures, debris clean-up and sinkholes.

EM = Emergency Declaration (FEMA)
 FEMA = Federal Emergency Management Agency

DR = Major Disaster Declaration (FEMA)
 N/A = Not applicable

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume I have detailed information regarding each planning partner’s vulnerability to the identified hazards. The following summarizes presents key risk assessment results for the Village of Suffern.

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Suffern reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Village indicated the following hazard rankings were appropriate.

Table 9.21-15 shows Suffern’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.21-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Medium
Extreme Temperature	Medium
Flood	Medium
Landslide	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

Note: The scale is based on the hazard rankings established in Volume I, modified as appropriate based on review by the jurisdiction

Critical Facilities

Table 9.21-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.21-16. Critical Facilities Flood Vulnerability

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Lake Antrim Dam	Dam	Yes	Yes	2024-SuffernV-17	No
Ramapo Cirque Dam	Dam	Yes	Yes	2024-SuffernV-17	No

Name	Type	Exposure		Addressed by Proposed Action	Already Protected to 0.2 percent Flood Level (describe protections)
		1 percent Event	0.2 percent Event		
Suffern Water Well #3	Well	Yes	Yes	N/A	Pump head three feet above Base Flood Elevation (BFE) at Water Treatment Facility.
Suffern Water	Well	Yes	Yes	N/A	Pump head three feet above BFE at Water Treatment Facility.
Suffern Water	Well	Yes	Yes	N/A	Pump head three feet above BFE at Water Treatment Facility.
Suffern Water	Well	Yes	Yes	N/A	Pump head three feet above BFE at Water Treatment Facility.

Source: Rockland County 2023, FEMA

Identified Issues

After review of the Village of Suffern’s hazard event history, hazard rankings, hazard location, and current capabilities, the Village of Suffern identified the following vulnerabilities within their community:

- The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations.
- Repetitively flooded properties place an undue stress on the property owner and Village and efforts should be made to mitigate them.
- There are flood prone roadways in the Village, including Lonergan Drive, Temple Lane, Spicer Road, South Street, Ruby Street, Ed Fagan Drive, Pat Malone Drive, and Brook Street.
- The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents about storm preparation, response, and recovery.
- The Village is currently unable to warn commuters of flood risk in the area.
- The Village does not have a Community Emergency Response Team (CERT). CERT is needed to education residents about disaster preparedness and trains members in basic disaster response skills.
- Village emergency shelters need emergency kits and property kitchen equipment for when the shelters are in operation.
- Currently, there is no watershed management group for the Mahwah River.
- There is need to identify locations to implement green infrastructure practices and stormwater storage systems in the Village.
- The Chestnut Street underpass along Orange Avenue and Route 202 needs to be improved, as the area becomes inundated during periods of heavy rain.
- There is a need for an environmentally sensitive program in the Village.
- The Lake Antrim area is prone to flooding.
- Areas of Lonegran Drive, downtown business district, and the ballfield are prone to flooding.
- The current emergency response plan does not include the functional-needs registry.

- GIS mapping needs to be updated for the Village.
- The Mahwah River Bank, along Memorial Drive has significant erosion as a result of flooding from past storms. As a result, the roadway has been closed.
- There are two dams (Lake Antrim Dam and Ramapo Cirque Dam), which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. These structures have the potential to impact those living nearby.
- The Wastewater Treatment Plant must be protected to the 500-year flood or worst-case scenario.

**This issue was identified as a specific area of concern based on resident response to the Rockland County Hazard Mitigation Citizen survey.*

9.21.7 Mitigation Strategy and Prioritization

This section discusses past mitigation actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in [Error! Not a valid bookmark self-reference.](#), the Village of Suffern did not identify any mitigation efforts completed since the last HMP.

Table 9.21-17 indicates progress on the Village’s mitigation strategy identified in the 2019 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in [Error! Not a valid bookmark self-reference.](#), the Village of Suffern did not identify any mitigation efforts completed since the last HMP.

Table 9.21-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-1	Develop Outreach Program	All Hazards	Village, Emergency Services	The Village currently does not have a comprehensive education and outreach program. There is a need to educate residents about storm preparation, response, and recovery. Develop a comprehensive Village-wide education and outreach program for storm preparation, response, and recovery.	1. Complete 2. Village website directs residents to the Rockland County Stormwater Consortium site for storm preparation information.	1. Discontinue 2. N/A 3. Complete
V. Suffern-2	Upgrade the Village’s NIXLE	All Hazards	Village, Emergency Services, Rockland County	The current emergency alert system is out of date and needs to be upgraded. Upgrade the Village’s NIXLE system to notify residents and businesses during Village-wide emergencies. Update the Village’s Emergency Operations Plan to comply with the National Incident Management System (NIMS).	1. Complete 2. The Village Police Department utilizes NIXLE System to notify residents.	1. Discontinue 2. N/A 3. Complete

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-3	Commuter lot signage	Severe Storm, Flood	Village, Emergency Services, DPW	<p>Unable to warn commuters of flood risk in the area.</p> <p>Purchase and install signage in commuter lots (including Lots A, B, F, and Lake Antrim / Memorial Pool parking) to warn about flooding risk to cars and help educate residents and commuters about the risks of flooding in the area.</p>	<p>1. In Progress</p> <p>2. Signage has been placed in a portion of the identified areas.</p>	<p>1. Include</p> <p>2. Purchase and install signage in remaining identified areas to warn about flooding risk to cars and help educate residents and commuters about the risk of flooding in the area.</p> <p>3. N/A</p>
V. Suffern-4	Develop a Community Emergency Response Team (CERT)	All Hazards	Village, Emergency Services, Rockland County	<p>CERT is needed as a way to education residents about disaster preparedness and trains members in basic disaster response skills.</p> <p>Develop a Community Emergency Response Team (CERT) to educate people about disaster preparedness and train citizen volunteers to assist their community when professional responders are not immediately available to help.</p>	<p>1. In Progress</p> <p>2. Presenting recruiting local residents to participate in the CERT Program</p>	<p>1. Include</p> <p>2. Ongoing recruitment to establish a Community Emergency Response Team to educate residents about disaster preparedness.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-5	Maintain List of Repetitive Flood Properties	All Hazards	Village, Emergency Services	<p>The Village does not have a list of homeowners and businesses that may need assistance moving resources prior to a storm. Additionally, the Village's EOP does contain this information and is in need of an update.</p> <p>Develop and maintain a volunteer roster to help homeowners and businesses that may need assistance in moving valuable resources out of harm's way before predicted storms move into the region and update the Village's Emergency Operations Plan.</p>	<p>1. Complete</p> <p>2. As a member of the Community Rating System (CRS) the Village has completed a list of homeowners and businesses that may need assistance moving resources prior to a storm.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
V. Suffern-6	Sheltering Materials	All Hazards	Village, Emergency Services	<p>Village emergency shelters need emergency kits and property kitchen equipment for when the shelters are in operation.</p> <p>Develop emergency kits, purchase materials to accommodate pets, and install kitchen equipment, where needed, at shelters in the Village.</p>	<p>1. In Progress</p> <p>2. Various Village Departments are identifying necessary emergency kits and kitchen equipment needs.</p>	<p>1. Include</p> <p>2. Provide emergency kits and update facilities to provide shelter and accommodate residents when necessary.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-7	Establish a Mahwah River Watershed Management Group	All Hazards	Village, Rockland County	<p>Currently, there is no watershed management group for the Mahwah River.</p> <p>Establish a Mahwah River Watershed Management Group that will collectively address development pressures, stormwater runoff issues and flood control mitigation projects at a watershed (regional) scale. Coordination with the Rockland-Bergen Bi-state River Commission will be part of the group's tasks.</p>	<p>1. In Progress</p> <p>2. Unable to fully coordinate with various County and State Stakeholders.</p>	<p>1. Include</p> <p>2. Establish a Mahwah River Watershed Management Group to address various stormwater runoff issues, coordinating with Rockland-Begen Bi-State River Commission.</p> <p>3. N/A</p>
V. Suffern-8	Mitigation Initiative Assistance	Flood	Village of Suffern, FEMA	<p>Repetitively flooded properties place an undue stress on the property owner and village and efforts should be made to mitigate them.</p> <p>Provide support to the Village to explore various buyout and relocation program opportunities, identify eligible properties, and administer the buyout program, and prepare an economic development plan to offset reduction in tax revenues resulting from a buyout.</p>	<p>1. In Progress</p> <p>2. Approximately 60 residential properties have participated in the FEMA buyout. Multiple new apartment complexes have been or will be constructed.</p>	<p>1. Include</p> <p>2. Will continue to advise property owners of any and all potential FEMA buyout opportunities.</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-9	Mitigation Initiatives Education Campaign	Flood	Village of Suffern, FEMA	Homeowners need to be made aware of the potential damages to their utility and mechanical systems during flooding events. Encourage homeowners in areas susceptible to flooding to move utility and mechanicals from basements to upper floors. Hire an architect to develop schematic plan options for raised utility rooms, facilitate the use of preapproved plans through the approval process for homeowners and help identify funding sources for the retrofit of existing homes.	1. Ongoing Capability 2. The Village will continue to encourage homeowners in areas susceptible to flooding to move mechanicals from basements to upper floors.	1. Discontinue 2. N/A 3. This action is considered ongoing.
V. Suffern-10	Stormwater Infrastructure Inventory	All Hazards	Village of Suffern, NYSDOT, U.S. Federal Highway Administration	There is a need for a list of existing stormwater management infrastructure in the village. Inventory of existing stormwater management infrastructure.	1. Completed 2. A list was created by the Department of Public Works and Building Department. Future infrastructure projects will be added to the list.	1. Discontinue 2. N/A 3. A list was created by the Department of Public Works and Building Department. Future infrastructure projects will be added to the list.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-11	Green Infrastructure Study	All Hazards	Village of Suffern, NYSDEC	<p>There is need to identify locations to implement green infrastructure practices and stormwater storage systems in the Village.</p> <p>Conduct a feasibility study to determine appropriate locations to implement green infrastructure practices and stormwater storage systems throughout Suffern.</p>	<p>1. In Progress 2. Currently limited progress has been realized.</p>	<p>1. Include 2. Keep as is 3. N/A</p>
V. Suffern-12	Review Village Codes	Severe Storm, Flood	Village of Suffern	<p>Some facilities were built before code updates; therefore, they may be more susceptible to damage from a hazard event.</p> <p>Conduct a diagnostic review of the existing Village zoning code and other ordinances and provide recommendations to maximize flood protection and stormwater management, promote green infrastructure practices, and protect surface water resources and flood plains.</p>	<p>1. Ongoing Capability 2. Codes and ordinances are reviewed continuously to identify room for amendments.</p>	<p>1. Discontinue 2. N/A 3. Ongoing capability. Codes and ordinances are reviewed continuously to identify room for amendments.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-13	DPW Emergency Generator	All Hazards	Village of Suffern, DPW	<p>The DPW garage lacks permanent backup power and cannot fully function during periods of power outages.</p> <p>Provide permanent emergency power generators at the DPW Garage to maintain operation of the fuel pumps and at the South Street Pump Station to allow for uninterrupted service of the facility.</p>	<p>1. Complete</p> <p>2. Installed new emergency generator at DPW Garage and at the South Street Pump Station.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Required work completed.</p>
V. Suffern-14	NJ Transit Commuter Rail Line Crossing	All Hazards	Village of Suffern, NJ Transit, NYSDOT, U.S. Federal Highway Administration	<p>There is currently no access to the west ward near the emergency railroad crossing over the NJ Transit commuter rail line.</p> <p>Provide access to the West Ward by way of an at-grade Emergency Railroad Crossing over the NJ Transit Commuter Rail Line.</p>	<p>1. No Progress</p> <p>2. Unable to secure an Agreement with NJ Transit.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Unable to secure an Agreement with NJ Transit.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-15	Chestnut Street Underpass Drainage Improvements	All Hazards	Village of Suffern, NYSDOT, NYSDEC, U.S. Federal Highway Administration, USACE	<p>The Chestnut Street underpass along Orange Avenue and Route 202 needs to be improved; area becomes inundated during periods of heavy rain.</p> <p>Install drainage improvements at the Chestnut Street underpass, along Orange Ave and along US Route 202 to better protect these transportation assets and to ensure that emergency services have access to these areas.</p>	<p>1. In Progress 2. Investigative work currently underway. Some improvements have been completed.</p>	<p>1. Include 2. Keep as is 3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-16	Critical Facilities in the Floodplain	Severe Storm, Flood	Village of Suffern, NYS and/or Rockland County Dept. of Health	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Protect the wastewater treatment plant, owned by the Village, and related facilities to the 500-year flood or worst-case scenario. The Village will determine feasible and cost-effective mitigation actions to implement which may include elevating critical mechanicals, floodproofing entries, installation of flood walls, and relocating the facility.</p>	<p>1. Discontinue 2. This is a repetitive action. Combine with Item 17.</p>	<p>1. Discontinue 2. N/A 3. This is a repetitive action. Consolidate with V.Suffern-17.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-17	Physical Protective Measures for Critical Facilities in the Floodplain	Flood	Village DPW	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Protect the wastewater treatment plant, owned by the Village, and related facilities to the 500-year flood or worst-case scenario. The Village will determine feasible and cost-effective mitigation actions to implement which may include elevating critical mechanicals, floodproofing entries, installation of flood walls, and relocating the facility.</p>	<p>1. In Progress</p> <p>2. Install proposed flood wall at Wastewater Treatment Plant projected completed date during Second Quarter of 2024.</p>	<p>1. Include</p> <p>2. Make this an individual action for the WWTP. Consolidate with V.Suffern-16.</p> <p>3. N/A</p>
V. Suffern-18	Critical Facility Flood Protection Measures	Flood	Village DPW	<p>Village facilities are not protected from flood events.</p> <p>Research options and purchase portable flood barrier walls for protection of Village facilities.</p>	<p>1. No Progress</p> <p>2. There are no critical facilities identified as being in the floodplain, other than dams.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. There are no critical facilities identified as being in the floodplain which haven't already been mitigated, other than dams.</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-19	Mahwah River Watershed Evaluation	All Hazards	Village of Suffern	<p>There is a need for an evaluation of the Mahwah River Watershed.</p> <p>Conduct a comprehensive evaluation of the Mahwah River Watershed in conjunction with the Ramapo River Watershed to identify mitigation goals and associated performance metrics, assess existing conditions with respect to erosion and deposition patterns, identify local and watershed-scale stressors, understand patterns of channel evolution, and make recommendations regarding flood mitigation.</p>	<p>1. No Progress</p> <p>2. No progress has been realized to date.</p>	<p>1. Include</p> <p>2. Consolidate with V.Suffern-20</p> <p>3. N/A</p>
V. Suffern-20	Sensitive Environments Program Development	All Hazards	Village of Suffern, Rockland County, NYS DEC	<p>There is a need for an environmentally sensitive program in the Village.</p> <p>Coordinate between the Village, County, and State to develop an environmentally sensitive program to (1) clear the channels of the Mahwah and Ramapo Rivers by removing debris and detritus from their bed and banks as well as from the shores of Lake Antrim; (2) develop a program for the ongoing maintenance of these the rivers.</p>	<p>1. No Progress</p> <p>2. No progress has been realized to date.</p>	<p>1. Include</p> <p>2. Consolidate with V.Suffern-20</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-21	Lake Antrim Flood Improvements	Severe Storm, Flood	Village of Suffern, Rockland County, NYS DEC	Lake Antrim area is prone to flooding. Restore Lake Antrim by designing and installing improvements to the surrounding bank and floodplain.	1. No Progress 2. Technical and financial assistance are required.	1. Include 2. Keep as is 3. N/A
V. Suffern-22	Wastewater Treatment Plant	Flood	DPW	Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery. Wastewater Treatment Plant – build a small space on the roof of the sludge building to house the motor control center. This will ensure its continued operation in the event of a flood. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	1. No Progress 2. Will not be necessary as a result of the floodwall installation.	1. Discontinue 2. N/A 3. Proposed floodwall at WWTP.

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-23	Water Supply Wells	Flood	DPW	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Water Supply Wells – raise the roof of the building to protect the critical equipment inside which can be mounted above the design flood elevation. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".</p>	<p>1. Complete</p> <p>2. Raised pump heads of Well No. 1, Well No. 2 and Well No. 4 three feet above Base Flood Elevation (BFE) at Water Treatment Facility.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-24	South Street Pump Station	Flood	DPW	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>South Street Pump Station – replace existing pumps with dry pit submersible pumps and build a raised exterior platform for a new emergency generator. This pump serves the entire village. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".</p>	<p>1. Complete 2. Action completed</p>	<p>1. Discontinue 2. N/A 3. Completed</p>
V. Suffern-25	DPW Garage	Flood	DPW	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>DPW Garage – upgrade electrical services and a raised electrical panel above the design flood elevation and install a larger generator. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".</p>	<p>1. Complete 2. Action completed</p>	<p>1. Discontinue 2. N/A 3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-26	Lonegran Drive Drainage Improvements	Flood	DPW	<p>Areas of Lonegran Drive, downtown business district, and ballfield are prone to flooding.</p> <p>Identify different options to improve drainage and flood prevention in the areas of Lonegran Drive, downtown business district, and ballfield.</p>	<p>1. In Progress</p> <p>2. No Progress has been realized.</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>
V. Suffern-27	Comprehensive Plan Updates	All Hazards	Village of Suffern	<p>Current comprehensive plan does not incorporate natural hazards.</p> <p>When updating the Village Comprehensive Plan, ensure that hazard mitigation and hazard areas are incorporated.</p>	<p>1. Complete</p> <p>2. The plan has been updated</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
V. Suffern-28	Community Rating System (CRS)	Flood	Village of Suffern	<p>The Village is currently not in the CRS program; but working towards joining.</p> <p>Continue working towards joining CRS.</p>	<p>1. Complete</p> <p>2. Member of CRS Program</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-29	Privately Owned Critical Facility in Floodplain	Flood	Village Board	<p>Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery.</p> <p>Notify and provided needed support to the below facility manager/operator to evaluate the Village of Suffern’s flood vulnerability and determine what mitigation options are needed, if any. Assure that any mitigation addresses the 500-year flood event or “worst damage scenario”</p> <ul style="list-style-type: none"> • O&R Suffern Gate Station – Gas (hazmat) 	<p>1. Complete</p> <p>2. The O&R Suffern Gate Station Project has been completed. The Gate Station was elevated as required for a Critical Facility.</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
V. Suffern-30	Update the Emergency Response Plan	All Hazards	Rockland County, Village	<p>The current emergency response plan does not include the functional-needs registry.</p> <p>Work with Rockland County to obtain access to the functional-needs registry and enhance emergency response plans for the Village.</p>	<p>1. In Progress</p> <p>2. N/A</p>	<p>1. Include</p> <p>2. Keep as is</p> <p>3. N/A</p>

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
V. Suffern-31	GIS Online Mapping	All Hazards	Village Trustee	GIS mapping needs to be updated for the Village. Continue working with the Stormwater Consortium of Rockland County and the County Planning Department to expand and disseminate GIS and other hazard information on the internet.	1. In Progress 2. As a result of a DEC Grant additional progress has been achieved.	1. Include 2. Keep as is 3. N/A

Proposed Hazard Mitigation Initiatives for the HMP Update

Suffern participated in the mitigation strategy workshop for this HMP to identify appropriate actions to include in a local hazard mitigation strategy. Its comprehensive consideration of all possible activities to address hazards of concern included review of the following FEMA documents:

- FEMA 551 “Selecting Appropriate Mitigation Measures for Floodprone Structures” (March 2007)
- FEMA “Mitigation Ideas—A Resource for Reducing Risk to Natural Hazards” (January 2013).

The action worksheets included at the end of this annex list the mitigation actions that Suffern would like to pursue in the future to reduce the effects of hazards. The actions 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 the Village’s priorities.

Table 9.21-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9.21-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.21-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	1	-	-	5	-	-	5	-	-	3
Disease Outbreak	1	-	-	3	-	-	3	-	-	2
Drought	1	-	-	3	-	-	3	-	-	3
Earthquake	1	-	-	4	-	-	4	-	-	3
Extreme Temperature	1	-	-	4	-	-	4	-	-	3
Flood	5	5	3	6	4	2	6	3	5	3
Landslide	1	-	-	4	-	-	4	-	-	3
Severe Weather	4	4	3	4	3	1	4	3	4	3
Severe Winter Weather	1	-	-	4	-	-	4	-	-	3
Wildfire	1	-	-	4	-	-	4	-	-	3

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 structures to reduce the impact of hazards.

Natural Systems Protection (NSP)—These are actions that minimize damage and losses and preserve or restore the functions of natural systems.

Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

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 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 9.21-19. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-SuffernV-01	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2024-SuffernV-02	Repetitive and Severe Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-SuffernV-03	Flood Prone Roadways	1	1	1	1	1	0	1	0	1	0	1	1	0	1	10	Medium
2024-SuffernV-04	Develop Outreach Program	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-SuffernV-05	Commuter Lot Signage	1	0	1	1	1	1	0	1	1	0	1	1	0	0	9	Medium
2024-SuffernV-06	Community Emergency Response Team (CERT)	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-SuffernV-07	Sheltering Materials	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2024-SuffernV-08	Mahwah River Watershed Management Group	0	1	1	1	1	1	1	1	1	1	1	1	0	1	12	High
2024-SuffernV-09	Green Infrastructure Study	0	1	1	1	1	0	1	1	1	1	1	1	1	0	11	High
2024-SuffernV-10	Chestnut Street Underpass Drainage Improvements	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-SuffernV-11	Sensitive Environments Program Development	0	0	1	1	1	0	1	1	1	1	1	1	0	1	10	Medium
2024-SuffernV-12	Lake Antrim Flood Improvements	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2024-SuffernV-13	Lonegran Drive Drainage Improvements	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2024-SuffernV-14	Emergency Response Plan Update	1	1	1	1	1	1	0	1	1	1	0	1	0	1	11	High
2024-SuffernV-15	GIS Online Mapping	1	0	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2024-SuffernV-16	Mahwah River Bank Flood Mitigation	0	1	1	1	1	0	1	1	1	1	1	1	1	1	11	High
2024-SuffernV-17	Dam Owner Partnership	1	1	1	1	1	1	0	1	1	1	1	1	1	0	12	High

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Community Objectives	Total	High / Medium / Low
2024-SuffernV-18	Physical Protective Measures at the Wastewater Treatment Plant	1	1	1	1	1	1	0	1	1	0	1	1	1	0	11	High

Note: Volume I, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-SuffernV-01. Socially Vulnerable Populations Outreach

Action Name:	2024-SuffernV-01. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Village does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires. Socially vulnerable and underserved populations may rely on these types of services more heavily than other segments on the population. Furthermore, they may be less able to access these resources due to a variety of potential obstacles, such as mobility issues or language barriers.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Create outreach materials, or utilize those from Rockland County, on hazard risks for socially vulnerable populations. Methods of distribution may include Village events, the Village newsletters, social media, the Village website, and having the materials on display for the public at Village libraries and offices. Consider hiring staff to work directly with socially vulnerable populations.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget, HMGP	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 3, 5	
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Village. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Village will become educated on hazards risks. The Village will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.	
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities	This action would build upon the County’s already existing public education and outreach program and adapt its contents to the Village’s needs.	

Impact on Future Development:	Not applicable		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate-related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current methods remain the only ones used
	Rely on state or federal resources		Resources may be generalized and not specific to the risks in the Village
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

Action 2024-SuffernV-02. Repetitive and Severe Repetitive Loss Properties

Action Name:	2024-SuffernV-02. Repetitive and Severe Repetitive Loss Properties		
Description of the Problem:	There are 29 Repetitive Loss and four Severe Repetitive Loss properties in the Village. These properties exhibit elevated vulnerability and may face increasing risks to flood damage due to changes in precipitation intensity and frequency, raising the possibility for these properties to become Repetitive/Severe Repetitive Loss Properties. These properties may require a disproportionate amount of municipal resources after hazard events if they are damaged.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.		
Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Village Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	1, 2, 3		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.		
Impact on Capabilities	This action will enhance the Village’s current NFIP capabilities.		
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem continues
	Construct flood walls/barriers around vulnerable areas	Costly and can divert floodwaters to other areas
	Deployable flood barriers for vulnerable areas	Requires a great deal of work to implement prior to each event

Action 2024-SuffernV-03. Flood Prone Roadways

Action Name:	2024-SuffernV-03. Flood Prone Roadways	
Description of the Problem:	There are flood prone roadways in the Village, including Lonergan Drive, Temple Lane, Spicer Road, South Street, Ruby Street, Ed Fagan Drive, Pat Malone Drive, and Brook Street.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Village will develop specific mitigation solutions for flood prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	
Lead Agency:	Village Public Works	
Supporting Agencies:	County Public Works	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	2	
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood prone roads.	
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.	
Impact on Capabilities	Not applicable	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives	Action	
	No action	
	Relocate all flood prone road system	
Evaluation		
Current problem continues		
Not feasible		

	Raise all flood prone roads	Cost prohibitive
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Action 2024-SuffernV-04. Develop Outreach Program

Action Name:	2024-SuffernV-04. Develop Outreach Program	
Description of the Problem:	The Village currently does not have a comprehensive education and outreach program. During hazard events, the public may need to quickly access information about evacuation routes and shelters, or other steps they can take to protect themselves and their property. Residents may also need information about what services are available or offline due to flooding from intense precipitation, dam failure, severe storms, and snow melt; where to receive a vaccination or other healthcare in the event of a disease outbreak; public cooling or heat centers, such as libraries, during extreme temperatures; and evacuation areas for earthquakes, landslides, and wildfires.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Develop a comprehensive Village-wide education and outreach program for storm preparation, response, and recovery. Work with Rockland County on their program that provides information to the municipalities.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will improve the current public education and outreach program in the Village by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Village.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards which may impact them in the Village.	
Impact on Critical Facilities/Lifelines:	Businesses, which may be considered critical facilities or lifelines, would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities	This action would build upon the County's already existing public education and outreach program and adapt its contents to the Village's needs.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents and business owners of how to reduce risk from hazards and how climate change may exacerbate those risks.	

Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action	Evaluation	
	No action	Current methods remain the only ones used	
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Village	
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance	

Action 2024-SuffernV-05. Commuter Lot Signage

Action Name:	2024-SuffernV-05. Commuter Lot Signage	
Description of the Problem:	The commuter parking lot in the Village is susceptible to flooding. There is currently no way to warn commuters of flood risk in the area.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Purchase and install signage in commuter lots (including Lots A, B, F, and Lake Antrim / Memorial Pool parking) to warn about flooding risk to cars and help educate residents and commuters about the risks of flooding in the area.	
Lead Agency:	Village Emergency Services	
Supporting Agencies:	Village Public Works	
Estimated Cost:	Medium	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 3, 5	
Benefits:	This action will provide emergency guidance for residents and commuters which utilize commuter lots (including Lots A, B, F, and Lake Antrim / Memorial Pool parking) will be information of flood risks in the area.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	Populations which utilize commuter lots (including Lots A, B, F, and Lake Antrim / Memorial Pool parking) will be information of flood risks in the area.	
Impact on Critical Facilities/Lifelines:	This action will enhance the safety and security lifelines by providing emergency guidance for residents and commuters.	
Impact on Capabilities	This action will create a new capability for the Village and will advise residents and commuters about the risks of flooding in the area.	
Impact on Future Development:	Not applicable	
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives	Action	Evaluation
	No action	Current problem remains
	Rent virtual message boards	Cost prohibitive

	Have staff act as flaggers to warn residents and commuters	May put staff at risk; staff may have other responsibilities
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Action 2024-SuffernV-06. Community Emergency Response Team (CERT)

Action Name:	2024-SuffernV-06. Community Emergency Response Team (CERT)		
Description of the Problem:	The Village has finite resources and staff to deploy during emergencies or related responses. The Village has also identified the need for more public outreach and education to inform the public on how to protect themselves during dam failures, disease outbreaks, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfires. Establishing a educates residents about disaster preparedness and trains members in basic disaster response skills.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Develop a Community Emergency Response Team (CERT) to educate people about disaster preparedness and train citizen volunteers to assist their community when professional responders are not immediately available to help.		
Lead Agency:	Village Emergency Services		
Supporting Agencies:	Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	1, 2, 3, 5		
Benefits:	In addition to supporting emergency responders during a disaster, the CERT program builds strong working relationships between emergency responders and the people they serve. CERT program builds strong working relationships between emergency responders and the people they serve.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	One function of the CERT program is to provide assistance to those who may need it during an emergency or disaster event.		
Impact on Critical Facilities/Lifelines:	This action will enhance the safety and security lifelines as CERT teams also help the community year-round by helping with community emergency plans, neighborhood exercises, preparedness outreach, fire safety education, and workplace safety.		
Impact on Capabilities	This action will create a new capability for the Village which can be utilized before, during, and after an emergency.		
Impact on Future Development:	Not applicable		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. CER Teams can assist by providing volunteers to work with emergency responders and the public.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem remains
	Rely on career personnel	Staffing may be overworked
	Accept spontaneous volunteers	Difficult to manage and track

Action 2024-SuffernV-07. Sheltering Materials

Action Name:	2024-SuffernV-07. Sheltering Materials		
Description of the Problem:	Shelters may be activated during dam/levee failures, disease outbreaks, droughts, earthquakes, extreme temperatures, floods, landslides, severe storms, severe winter storms, and wildfires. There is limited timeframe from the point at which a shelter is activated to when it begins hosting occupants and offering services.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Develop emergency kits, purchase materials to accommodate pets, and install kitchen equipment, where needed, at shelters in the Village.		
Lead Agency:	Village Administration		
Supporting Agencies:	Rockland County, American Red Cross		
Estimated Cost:	High		
Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Village Budget		
Implementation Timeline:	Within 3 years		
Goals Met:	1, 2, 5		
Benefits:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during an emergency.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations are often the most at-risk to hazards due to pre-existing conditions and socioeconomic status. Populations may not be able to evacuate during times of emergency and need a safe, nearby location to locate to.		
Impact on Critical Facilities/Lifelines:	This action will provide medical emergency kits at shelters in the Village for use by emergency responders.		
Impact on Capabilities	This action will enhance the Village’s sheltering capabilities, by providing a stocked location which can support resident’s needs.		
Impact on Future Development:	This action results in protection of a critical facility that could support future development.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. Having an operable building with the proper equipment needed for continuity of operations will create a safe environment for those at risk.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem continues

	Build new facility	Cost prohibitive
	Accept donations for materials	Used items may not be sanitary

Action 2024-SuffernV-08. Mahwah River Watershed Management Group

Action Name:	2024-SuffernV-08. Mahwah River Watershed Management Group		
Description of the Problem:	When flooding occurs or intense precipitation leads to overflows during severe storms, excess water travels from the source of flooding into other tributaries and drainage channels in its watershed. Planning for flood issues at the watershed-level accounts for natural drainage capacities and access to other waterbodies and tributaries. Currently, there is no watershed management group for the Mahwah River.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Establish a Mahwah River Watershed Management Group that will collectively address development pressures, stormwater runoff issues and flood control mitigation projects at a watershed (regional) scale. Coordination with the Rockland-Bergen Bi-state River Commission will be part of the group’s tasks.		
Lead Agency:	Village Administration		
Supporting Agencies:	Rockland County, Surrounding Jurisdictions, Rockland-Bergen Bi-state River Commission, NYS DEC		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	2, 3, 4, 5, 6		
Benefits:	This action will create a new, collaborative capability in the Village and in the region, which will assist in addressing issues in the Mahwah River Watershed, including flooding.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The group forming as a result of this action will address themes which impact the total population of the Village. Input from the public will be welcomed to the Mahwah River Watershed Management Group.		
Impact on Critical Facilities/Lifelines:	The Mahwah River Watershed Management Group will discuss and address items connected to the water and utilities lifelines. Further, there may be crossover in topics which would protect or enhance the transportation and safety and security lifelines.		
Impact on Capabilities	This action will create a new, collaborative capability in the Village and in the region, which will assist in addressing issues in the Mahwah River Watershed, including flooding.		
Impact on Future Development:	This action may impact future development as outcomes from discussions could influence municipal code and ordinance changes.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. The Mahwah River Watershed is likely to experience more rains and instances of flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low

Alternatives	Action	Evaluation
	No action	Current problem remains
	Do not coordinate with Rockland-Bergen Bi-state River Commission	Key information and impacts will not be shared
	Address issues outside of the Mahwah River Watershed	Additional members would be needed, and agendas could lengthen significantly, although identifying issues outside of the Mahwah River Watershed may bring to light potential solutions

Action 2024-SuffernV-09. Green Infrastructure Study

Action Name:	2024-SuffernV-09. Green Infrastructure Study		
Description of the Problem:	The Village is susceptible to flooding due to severe storms in multiple areas. There is need to identify locations to implement green infrastructure practices and stormwater storage systems in the Village.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Conduct a feasibility study to determine appropriate locations to implement green infrastructure practices and stormwater storage systems throughout Suffern.		
Lead Agency:	Village Administration		
Supporting Agencies:	NYS DEC		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	2, 6		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to stormwater infrastructure and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood. Green infrastructure practices can help replenish groundwater reserves, relieving stress on local water supplies and reducing the need to import potable water.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding.		
Impact on Critical Facilities/Lifelines:	This action will add to the Village’s water and utilities infrastructure. Furthermore, transportation routes will be more likely to remain open and access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness by stormwater infrastructure moving the flow of floodwaters away and off of roadways.		
Impact on Capabilities	This action will strengthen the Village’s current stormwater management program by providing resilience and environmentally friendly stormwater management options.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No action	Current problem remains
	Remove all infrastructure and install new green infrastructure with increased storage/flow capacity	Cost prohibitive
	Turn areas into green space and remove all infrastructure	Cost prohibitive, may displace residents and businesses

Action 2024-SuffernV-10. Chestnut Street Underpass Drainage Improvements

Action Name:	2024-SuffernV-10. Chestnut Street Underpass Drainage Improvements		
Description of the Problem:	The area near Chestnut Street underpass along Orange Avenue and Route 202 becomes inundated during periods of heavy rain.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Install drainage improvements at the Chestnut Street underpass, along Orange Ave, and along US Route 202 to better protect these transportation assets and to ensure that emergency services have access to these areas.		
Lead Agency:	Village Public Works		
Supporting Agencies:	NYS DOT, NYS DEC, US FHA, Rockland County		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	2, 5		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to drainage infrastructure and roadways during severe events.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding the drainage infrastructure.		
Impact on Critical Facilities/Lifelines:	This action identify options to improve drainage and flood prevention at the Chestnut Street underpass, along Orange Ave, and along US Route 202. Furthermore, transportation routes will be more likely to remain open and access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.		
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Village.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No Action	-
	Remove roadway	Roadway cannot be removed
	Install rain gardens	Rain gardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.

Action 2024-SuffernV-11. Sensitive Environments Program Development

Action Name:	2024-SuffernV-11. Sensitive Environments Program Development	
Description of the Problem:	There are environmentally sensitive areas in Mahwah River Watershed area. These areas may serve as natural flood buffers and be able to absorb precipitation during severe storms, mitigating the potential for flooding. If these areas are developed or removed, there may be an increase in flood risks in the Village.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	Coordinate between the Village, County, and State to develop an environmentally sensitive program to (1) clear the channels of the Mahwah and Ramapo Rivers by removing debris and detritus from their bed and banks as well as from the shores of Lake Antrim; (2) develop a program for the ongoing maintenance of these the rivers. Furthermore, conduct a comprehensive evaluation of the Mahwah River Watershed in conjunction with the Ramapo River Watershed to identify mitigation goals and associated performance metrics, assess existing conditions with respect to erosion and deposition patterns, identify local and watershed-scale stressors, understand patterns of channel evolution, and make recommendations regarding flood mitigation.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County, NYS DEC, Surrounding Jurisdictions	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, NYSDEC Grants, Village Budget, Surrounding Jurisdictional Budgets	
Implementation Timeline:	Within 5 years	
Goals Met:	3, 4, 5, 6	
Benefits:	This coordinated action will provide cleaner waterways and waterbodies in the Village and its surrounding jurisdictions which the Mahwah and Ramap Rivers flow through, as well as the shores of Lake Antrim. Not only will this action beautify the waterways, but it will remove potentially hazardous debris from the waterways, protecting life and property should there be flooding conditions in the future.	
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	This action will benefit populations by removing potentially dangerous or hazardous debris from waterways and waterbodies in the Village, which could otherwise have negative impacts on the Village’s residents.	
Impact on Critical Facilities/Lifelines:	This action will make it safer for first responders to traverse in flood waters, if needed, as debris will be removed as a part of ongoing maintenance from this action.	
Impact on Capabilities	This action will result in a new capability for the Village, which would reduce impacts of floods and clear potentially hazardous debris from waterways.	
Impact on Future Development:	This action will benefit areas of future development by providing a clean aesthetic in the Village and removing potential debris from areas which could be used for future development.	

Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events. Heavier rains can result in increased erosion and debris in the waterways.		
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Coordinate only with surrounding jurisdictions		May not have jurisdiction to enter waterbodies
	Coordinate only with the County and State		Debris up and/or downstream will still impact the waterbodies in the Village

Action 2024-SuffernV-12. Lake Antrim Flood Improvements

Action Name:	2024-SuffernV-12. Lake Antrim Flood Improvements		
Description of the Problem:	The Lake Antrim area is prone to flooding following heavy rains.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Restore Lake Antrim by designing and installing improvements to the surrounding bank and floodplain.		
Lead Agency:	Village Administration		
Supporting Agencies:	Village Engineering, Rockland County, NY DEC		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HGMP, Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2		
Benefits:	This action would reduce the flooding impacts felt by the Village from Lake Antrim.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding from Lake Atrium. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.		
Impact on Critical Facilities/Lifelines:	This action would assist in the reduction of roadway flooding from Lake Atrium, permitting first responders to traverse the roadways safely.		
Impact on Capabilities	Not applicable		
Impact on Future Development:	Future development surrounding Lake Atrium will experience fewer impacts from flood and heavy rain events.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Raise banks of lake to increase storage capacity		Cost prohibitive

	Construct floodwall along lake	Cost prohibitive
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Action 2024-SuffernV-13. Lonegran Drive Drainage Improvements

Action Name:	2024-SuffernV-13. Lonegran Drive Drainage Improvements		
Description of the Problem:	Areas of Lonegran Drive, downtown business district, and the ballfield are prone to flooding and overflows due to heavy rains.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Identify different options to improve drainage and flood prevention in the areas of Lonegran Drive, downtown business district, and ballfield.		
Lead Agency:	Village Public Works		
Supporting Agencies:	Engineering		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA BRIC, HMGP, Village Budget		
Implementation Timeline:	Within 4 years		
Goals Met:	2, 5		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to drainage infrastructure and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding the drainage infrastructure.		
Impact on Critical Facilities/Lifelines:	This action identify options to improve drainage and flood prevention in the areas of Lonegran Drive, downtown business district, and ballfield. Furthermore, transportation routes will be more likely to remain open and access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.		
Impact on Capabilities	This action will upgrade the stormwater management capabilities of the Village.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No Action	-
	Remove roadway	Roadway cannot be removed
	Raingardens	Raingardens are unlikely to be able to absorb enough stormwater to prevent flooding during severe rainfall events.

Action 2024-SuffernV-14. Emergency Response Plan Update

Action Name:	2024-SuffernV-14. Emergency Response Plan Update		
Description of the Problem:	Individuals may require additional or different support and resources to be able to implement the Village’s emergency response plan. For instance, individuals that have mobility issues or depend on medical equipment may be unable to evacuate on their own during a dam/levee failure, earthquakes, flood, landslide, landslide, severe winter storm, or wildfire. Those with underlying medical conditions may require additional protective and precautionary measures to mitigate the risks from disease outbreaks, droughts, and extreme temperatures.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire	
Description of the Solution:	Work with Rockland County to obtain access to the functional-needs registry and enhance emergency response plans for the Village.		
Lead Agency:	Village Administration		
Supporting Agencies:	Rockland County		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	1 year		
Goals Met:	1, 3, 5		
Benefits:	The Village will have the location of registered members of the socially vulnerable population as well as any emergency or medical information the registrant was willing to share.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations are able to register to the functional-needs registry to have important emergency and medical information stored in a secure system for first responders.		
Impact on Critical Facilities/Lifelines:	This action allows first responders to understand the emergency and medical needs of registered individuals should assistance be needed.		
Impact on Capabilities	This action will update an already existing planning capability of the Village.		
Impact on Future Development:	Future development will be protected by the Emergency Response Plan.		
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in an Emergency Response Plan, including in the basic plan and any annexes, may need to be updated.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No action	Vulnerable populations will remain unknown
	Do not download information	Population information will not be available to the Village
	Create new system	Cost and start-up restraints

Action 2024-SuffernV-15. GIS Online Mapping

Action Name:	2024-SuffernV-15. GIS Online Mapping	
Description of the Problem:	Hazard spatial boundaries are not made publicly available on the Village’s website. It is important to residents to know whether they live or work in an area exposed to dam/levee failures, floods, severe storms, severe winter storms, earthquakes, extreme temperatures, landslides, and wildfires, so they can implement mitigation activities and prepare themselves as necessary.	
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input checked="" type="checkbox"/> Severe Winter Storm <input checked="" type="checkbox"/> Wildfire
Description of the Solution:	Work with the Stormwater Consortium of Rockland County and the County Planning Department to expand and disseminate GIS and other hazard information on the internet.	
Lead Agency:	Village Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	Within 2 years	
Goals Met:	3, 5, 7	
Benefits:	This action will benefit the Village as it will permit the creation of maps, analysis of hazards, and information sharing opportunities with local and county agencies.	
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Impact on Socially Vulnerable Populations:	GIS systems may provide the Village with the opportunity to create maps showing where socially vulnerable populations reside in the Village, which could be shared with first responders.	
Impact on Critical Facilities/Lifelines:	This action will bolster the safety and security lifeline.	
Impact on Capabilities	This action will add a new capability to the Village and bolster the County’s current GIS capabilities.	
Impact on Future Development:	GIS systems would allow for in depth land analysis to assist in determining where future land use could be prohibited or encouraged.	

Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. Utilizing GIS technology to update hazard risk analyses will increase the resilience of the Village, its residents, and first responders.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains
	Use ArcOnline		Limited mapping and analysis capabilities
	Contract for GIS services		May experience information-sharing complications with the Stormwater Consortium of Rockland County and the County Planning Department

Action 2024-SuffernV-16. Mahwah River Bank Flood Mitigation

Action Name:	2024-SuffernV-16. Mahwah River Bank Flood Mitigation		
Description of the Problem:	The Mahwah River Bank, along Memorial Drive has signification erosion as a result of flooding from past storms. As a result, the roadway has been closed.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Work with partnering agencies to identify feasible mitigation measures to provide relief from flooding impacts caused by the Mahwah River along Memorial Drive. Cost effective measures will be implemented.		
Lead Agency:	Village Public Works		
Supporting Agencies:	Rockland County, Village Administration, FEMA		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HMGP		
Implementation Timeline:	5 years		
Goals Met:	2		
Benefits:	This action would reduce the flooding impacts felt by the Village from the Mahwah River along Memorial Drive.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding from the Mahwah River along Memorial Drive. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.		
Impact on Critical Facilities/Lifelines:	This action would assist in the reduction of roadway flooding from the Mahwah River along Memorial Drive, permitting first responders to traverse the roadways safely.		
Impact on Capabilities	Not applicable		
Impact on Future Development:	Future development along Memorial Drive would experience reduced flooding impacts from the Mahwah River.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Current problem remains

	Raise banks of river to increase storage capacity	Cost prohibitive
	Construct floodwall along river	Cost prohibitive

Action 2024-SuffernV-17. Dam Owner Partnership

Action Name:	2024-SuffernV-17. Dam Owner Partnership		
Description of the Problem:	There are two dams (Lake Antrim Dam and Ramapo Cirque Dam), which are critical facilities, located in the 1- and 0.2-percent flood hazard areas that contain or are adjacent to existing residential areas. The municipality does not own all the dams in its jurisdictions and cannot itself implement mitigation actions to the structures.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	Work with the owners of the dams to ensure inspections and safety procedures are up to date. Identify mitigation actions to ensure the integrity of the dams and that it is protected up to the 0.2-percent flood hazard area.		
Lead Agency:	Village Emergency Services		
Supporting Agencies:	Village Administration, Dam Owners, NYSDEC		
Estimated Cost:	Low		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 3, 5		
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas of the dams and increase the resilience of responding agencies. It will also increase communication between the municipality and the dam owners, which can be important during hazard events or other emergencies.		
Mitigation Action Type: <i>Check all that apply</i>	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exists.		
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the safety procedures in place for each identified dam.		
Impact on Capabilities	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
Impact on Future Development:	Depending on the result of this partnership, future development near the dams may be provided with better protection from dam failure events due to improved procedures and communication, as well as any physical improvements to the structures.		
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation

	No Action	Village will be unaware of any safety concerns for the dam or its condition
	Utilize information from NYSDEC	Owners may not be required to submit a safety plan to the State
	Utilize information from the National Inventory of Dams	Not all dams are listed on the inventory

Action 2024-SuffernV-18. Physical Protective Measures at the Wastewater Treatment Plant

Action Name:	2024-SuffernV-18. Physical Protective Measures at the Wastewater Treatment Plant		
Description of the Problem:	The Wastewater Treatment Plant is located in the floodplain and is not protected to the 500-year flood or worst-case scenario. This elevates the risk of potential damage or serve interruption at the plant during a flood.		
Hazard(s) of Concern: <i>Check all that apply</i>	<input type="checkbox"/> Dam/Levee Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Extreme Temperature	<input checked="" type="checkbox"/> Flood <input type="checkbox"/> Landslide <input type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire	
Description of the Solution:	The Village will install a proposed flood wall at Wastewater Treatment Plant projected completed date during Second Quarter of 2024.		
Lead Agency:	Village Administration		
Supporting Agencies:	Wastewater Treatment Plant Facility Manager		
Estimated Cost:	High		
Potential Funding Sources:	Village Budget		
Implementation Timeline:	Within 1 year		
Goals Met:	2, 5		
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to the flood hazard and remove or reduce safety risks for first responders.		
Mitigation Action Type: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category: <i>Check all that apply</i>	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Impact on Socially Vulnerable Populations:	Retrofitting or relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities.		
Impact on Critical Facilities/Lifelines:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.		
Impact on Capabilities	This action will reduce the Village’s wastewater treatment plant’s risk to the flood hazard, enhancing its capabilities.		
Impact on Future Development:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events, which could lead to more flooding events.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No Action		Current problem remains

	Floodproof existing structure	May not necessarily reduce risk
	Deployable flood barriers for vulnerable areas	Requires deployment. The facility manager may not have adequate time to deploy.