

SECTION 9. JURISDICTIONAL ANNEXES

9.14 TOWN OF ORANGETOWN

This jurisdictional annex to the Rockland County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Town of Orangetown 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 Town of Orangetown, describes who participated in the planning process, assesses the Town’s risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

9.14.1 Hazard Mitigation Planning Team

The Town of Orangetown identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments. The Superintendent 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 9.14-1 summarizes Town officials who participated in the development of the annex and in what capacity. Additional documentation of the Town’s planning activities through Planning Partnership meetings is included in Volume I.

Table 9.14-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: James Dean, Superintendent/Highway Department Address: 26 W Orangeburg Rd, Orangeburg, NY 10962 Phone Number: 845-359-6500 x4510 Email: jdean@orangetown.com	Name/Title: Stephen Munno, Administrative Assistant/Highway Department Address: 26 W Orangeburg Rd, Orangeburg, NY 10962 Phone Number: 845-359-6500 x4506 Email: smunno@orangetown.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Jane Slavin Address: 26 W Orangeburg Rd, Orangeburg, NY 10962 Phone Number: 845-359-8410 x4302 Email: jslavin@orangetown.com	

9.14.2 Municipal Profile

On September 22, 2020, the Village of South Nyack passed a resolution to dissolve the Village of South Nyack. Since dissolution, the Town of Orangetown assumed all governing duties and police services. Therefore, the Village of South Nyack does not have a standalone annex and any pertinent information regarding the 2019 HMP annex for the Village has been incorporated into the Town's annex.

The Town of Orangetown is located along the southern and western border of Rockland County. The Town is bordered to the north by the Town of Clarkstown and its inclusive villages, to the south by the State of New Jersey, to the west by the Town of Ramapo and its inclusive villages, and to the east by the Hudson River. The following hamlets are found in the Town: South Nyack, Blauvelt, Orangeburg, Pearl River, Palisades, Sparkill, Tappan, and Upper Grandview. Lake Tappan and the Hudson River are major

bodies of water found throughout the Town. The Town has a total area of 31.4 square miles, of which, 24.2 square miles is land, and 7.2 square miles is water. The Town is governed by the Town Board consisting of the town council and the town supervisor.

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 5 percent of the population is five years of age or younger, 19.1 percent is 65 years of age or older, 2.9 percent is non-English speaking, 4.5 percent is below the poverty threshold, and 9.8 percent is considered disabled.

9.14.3 Jurisdictional Capability Assessment and Integration

The Town of Orangetown 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 Town of Orangetown to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Table 9.14-2 summarizes the regulatory tools that are available to Orangetown.

Table 9.14-2. 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	NYS Codes, Town Code Chapter 6 – Building Construction Administration	State and Local	Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The NYS Building Code is intended to establish provisions that adequately protect public health, safety and welfare through the minimum requirements for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs. The 2020 edition is an update to the 2018 edition published by the ICC. It is part of the Uniform Fire Prevention and Building Code.				
Zoning/Land Use Code	Yes	Chapter 43 – Zoning (1/23/2024)	Local	Code Enforcement Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Zoning Ordinance implements the goals and objectives of the Comprehensive Plan and establishes districts and zoning map for the Town. The latest amendment for Chapter 43 was January 23, 2024.				
Subdivision Code	Yes	Chapter 21 – Land Development Regulations (5/22/1967)	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The land development regulates and prevents building in areas that would impair flood hazard areas. Chapter 21 establishes the planning board to review land plats and set specific standards for the approval of plats.				
Site Plan Code	Yes	Chapter 21A – Site Development Plan Approval (9/26/1983)	Local	Planning Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Chapter 21A regulates site development and approval of development that would impair flood hazard areas, in hopes to limit future development in the floodplain.				
Stormwater Management Code	Yes	Chapter 30C – Stormwater Management (2006)	Local	Stormwater Management Officer
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The purpose of chapter 30C is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public within the Town.				
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 and Local	NYS Department of State
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain disclosures under the law or pay a credit of \$500 to the buyer at closing. While the PCDA requires a seller to complete a standardized disclosure statement and deliver it to the buyer before the buyer signs the final purchase contract, in practice, most home sellers in New York opt not to complete the statement and instead pay the credit.				
Growth Management	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
Environmental Protection Ordinance(s)	Yes	Chapter 11B – Environmental Quality Review (10/23/1978)	Local	Town Board
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Chapter 11B regulates actions that have significant effect on the environment. Those actions which are deemed “not having significant effect on the environment” are classified as Type II actions and include, but are not limited to: Zoning district changes, building permit applications, demolition of structures, public parking areas, salt spreading and snowplowing, and more. These actions are reviewed and approved by the Town Board.				
Flood Damage Prevention Ordinance	Yes	Chapter 14B – Flood Damage Prevention (1/28/2014)	Federal, State, Local	Director of the Office of Building, Zoning, Planning Administration and Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The ordinance promotes public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas of the Town. Among other regulations, chapter 14B controls the alterations of natural floodplains and regulates the construction of flood barriers that unnaturally divert floodwaters. This chapter also qualifies the Town to participate in the NFIP.				
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	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	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types	State and Local	Director of the Office of Building, Zoning, Planning Administration and Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town requires that all new construction or substantial improvements of structures in the SFHA must have the lowest floor elevated to or above the base flood elevation. This meetings the State’s mandated BFE +2 feet.				
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Chapter 30C – Stormwater Management (2006); 30C-9 Suspension of access to MS4; 30D-23 Suspension of MS4 discharge access	State and Local	Director of the Office of Building, Zoning, Planning Administration and Enforcement
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Both chapter 30C-9 and 30D-23, within the Stormwater Management ordinance regulates and restricts access and discharge fo the municipal separate storm sewer system for the Town.				
Planning Documents				
General/Comprehensive Plan	Yes	Orangetown Comprehensive Plan Update, 2023	Local	OBZPAE
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The comprehensive plan establishes the Town goals and aspirations for future development and provides a roadmap to achieve community resilience. The most recent comprehensive plan was updated in 2023 through a collaborative process of the planning committee and Town Board. Public engagement was seen throughout the process through workshops and public hearings, to ensure a plan that addresses all concerns for all residents in the community.				

	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
Capital Improvement Plan	No	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				
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	MS4 Stormwater Reports	Local	DEME
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The MS4 stormwater reports for the town consists of reports on systems such as roads with drainage, catch basins, gutters, ditches, and more owned by the Town and includes information on their design and discharge.				
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				
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	-	-	-

	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
<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.)	-	-	-	-
<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> N/A				
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				
Other	-	-	-	-
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> N/A				

Development and Permitting Capability

Table 9.14-3 summarizes the capabilities of Orangetown to oversee and track development.

Table 9.14-3. 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	The Building Department issues development permits and tracks new development.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
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	-

Administrative and Technical Capability

Table 9.14-4 summarizes potential staff and personnel resources available to Orangetown and their current responsibilities that contribute to hazard mitigation.

Table 9.14-4. 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 zoning and planning matters.
Zoning Board of Adjustment	Yes	The Zoning Board considers appeals for variances from the zoning ordinance, appeals of decisions made by the Building Inspector, and requests for zoning interpretations.
Planning Department	Yes	The Office of Building, Zoning, Planning, Administration and Enforcement enforces all Local and State codes, issues permits, conducts inspections, and assists both the Planning and Zoning Boards.
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Environmental Management and Engineering
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Orangetown Highway Department provides safe, courteous, dependable, and economical service, wherever and whenever possible for all residents. The Department maintains all Local roadways, government facilities and grounds, conducts snow plowing operations, and picks up yard waste.
Construction/Building/Code Enforcement Department	Yes	The Office of Building, Zoning, Planning, Administration and Enforcement enforces all Local and State codes, issues permits, conducts inspections, and assists both the Planning and Zoning Boards.

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Emergency Management/Public Safety Department	Yes	<p>The mission of the Orangetown Office of Emergency Management is to maintain a high level of planning and preparedness, to protect the citizens of Orangetown, to reduce loss of life, protect important assets, and reduce any disruption or destruction to local commerce and institutions; all while assisting and supporting the town government and emergency services with preparing, responding, and recovering from a disaster.</p> <p>The Orangetown Police Department works in partnership with the community, to protect life and property, solve neighborhood problems and enhance the quality of life in the town.</p> <p>The Fire Prevention Bureau seeks to provide fire safety inspections to multiple family residences, businesses, and public assemblies to ensure safety throughout the Town at all times.</p>
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Orangetown Highway Department provides safe, courteous, dependable, and economical service, wherever and whenever possible for all residents. The Department maintains all Local roadways, government facilities and grounds, conducts snow plowing operations, and picks up yard waste.
Mutual aid agreements	Yes	Orangetown Highway
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	Yes	There are no job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk.
Other: Historic Areas Board of Review	Yes	The Historic Areas Board of Review seeks to maintain the historic areas within the Town, including the Tappan and Palisades Areas. The Board reviews all land use applications to ensure compliance with the Historic Area Ordinance (Chapter 12).
Other: Department of Environmental Management and Engineering (DEME)	Yes	The Department of Environmental Management and Engineering manages the Town sewer collection and treatment system, provide engineering services to all Town departments and to maintain and repair police cars and other vehicles.
Other: Orangetown Parks Development Advisory Committee	Yes	The Committee oversees park acquisition, development, and alteration. Their major goal is to ensure that the Town’s recreational and open space needs will be wisely and prudently met. The Committee also makes recommendations as needed to the Planning Board regarding proposed subdivisions and the effect on the current inventory of parks and open space sites.
Other: Orangetown Environmental Committee		The Orangetown Environmental Committee (OEC) was formed in 2008 with the mission of protecting and improving our local environment for the health and well-being of all residents. The OEC is an advisory committee comprised of Town-appointed volunteers. The OEC works on several areas of environmental concern focusing on energy, waste reduction and recycling, water, and land use and open space.
<i>Technical/Staffing Capability</i>		
Planners or engineers with knowledge of land development and land management practices	Yes	OBZPAE and DEME
Engineers or professionals trained in building or infrastructure construction practices	Yes	OBZPAE and DEME

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Planners or engineers with an understanding of natural hazards	Yes	OBZPAE
Staff with expertise or training in benefit/cost analysis	Yes	Finance
Professionals trained in conducting damage assessments	Yes	OBZPAE
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	OBZPAE (GIS)
Environmental scientist familiar with natural hazards	No	-
Surveyor(s)	No	-
Emergency Manager		
Grant writer(s)	Yes	Supervisors Office
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

Table 9.14-5 summarizes financial resources available to Orangetown.

Table 9.14-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	N/A

Education and Outreach Capability

Table 9.14-6 summarizes the education and outreach resources available to Orangetown.

Table 9.14-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Contracted
Hazard mitigation information available on your website	Yes	Available on multiple webpages including Office of Emergency Management Committee, Department of Environmental Management and Engineering, Bureau of Fire Prevention, etc. Throughout the website are documents which may contain additional information on hazards.
Social media for hazard mitigation education and outreach	Yes	The Town utilizes various social media outlets, including Facebook and Instagram, to keep residents up to date with what is currently happening in the Town. The Police Department also uses these same outlets to provide the community with information regarding recent crime events, public utility outages, and other hazard related events in the Town and surrounding communities.
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Orangetown Parks Development Advisory Committee, Orangetown Environmental Committee, Historic Areas Board of Review
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	-
If yes, please describe.	N/A	The Town utilizes various social media outlets, including Facebook and Instagram, to keep residents up to date with what is currently happening in the Town. The Police Department also uses these same outlets to provide the community with information regarding recent crime events, public utility outages, and other hazard related events in the Town and surrounding communities

Community Classifications

Table 9.14-7 summarizes classifications for community programs available to Orangetown.

Table 9.14-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
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)	-	-	-

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 9.14-8 summarizes the adaptive capacity for each identified hazard of concern and the Town’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 9.14-8. Adaptive Capacity

Hazard	Adaptive Capacity
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Landslide	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.14.4 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 9.14-1 is responsible for maintaining this information.

NFIP Summary

Table 9.14-9 summarizes the NFIP statistics for Town of Orangetown.

Table 9.14-9. Town of Orangetown NFIP Summary of Policy and Claim Statistics

# Policies	115
# Claims (Losses)	362
Total Loss Payments	\$5,668,545
# Repetitive Loss Properties (NFIP definition)	3
# Repetitive Loss Properties (FMA definition)	33
# Severe Repetitive Loss Properties	5
# Policies Within the 1 percent Annual Chance Flood Boundary	5

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 9.14-10 provides a summary of the NFIP program in the Town of Orangetown.

Table 9.14-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	There are minor to major flood concerns within the Town, especially seen in low-lying areas.
Do you maintain a list of properties that have been damaged by flooding?	No, the Town does not maintain a list at this time.
Do you maintain a list of property owners interested in flood mitigation?	No, the Town does not maintain a list at this time.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	No, the Town does not have any RiskMAP projects underway at this time.
How do you make Substantial Damage determinations?	Building Inspectors would conduct an inspection of the damaged/improved structure(s) and advise that a building permit is required to repair/raise/replace said structures(s). If compliance is not obtained, violations will be issued.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown, at this time.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigation properties, how were the projects funded?	None, at this time.

NFIP Topic	Comments
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes, the flood hazard maps address the flood risks within the Town.
NFIP Compliance	
What local department is responsible for floodplain management?	Yes, Jane Slavin, the Director of the Office of Building, Zoning, Planning Administration and Enforcement. (Building Department)
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Jane Slavin, Director of the Office of Building, Zoning, Planning Administration and Enforcement.
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, the Town has access to resources to determine possible future flooding conditions from climate change.
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? 	Yes, continuing education and any updates to codes/rules/standards of practice.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit/plan review, GIS information as provided to the Town by Rockland County Planning, FEMA Maps available in office, planning and/or zoning reviews as applicable, engineering review, onsite inspections.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Obtain proposed cost of the proposed development and compare to the market value of the structure before. If the total costs exceeds 50 percent of the market value, then it would be considered a substantial improvement.
What are the barriers to running an effective NFIP program in the community, if any?	None, at this time.
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. 	None, at this time.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	June 6, 2024
What is the local law number or municipal code of your flood damage prevention ordinance?	Ch. 14B, adopted 6-28-1982 by L.L. No. 8-1982, as amended 12-14-1987 by L.L. No. 14-1987. 1-28-2014 by L.L. No. 1-2014.
What is the date that your flood damage prevention ordinance was last amended?	Ch. 14B, adopted 6-28-1982 by L.L. No. 8-1982, as amended 12-14-1987 by L.L. No. 14-1987. 1-28-2014 by L.L. No. 1-2014.
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	The floodplain management program meets the minimum requirements.
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?	Yes, the Planning Board, Zoning Board, Building Department and town engineer all support floodplain management.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes, the Town plans to join the CRS program.

9.14.5 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 9.14-11 through Table 9.14-13.

Table 9.14-11. 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.)	
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	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

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

Table 9.14-12. 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
No major development and infrastructure reported.					

* Only location-specific hazard zones or vulnerabilities identified.

Table 9.14-13. 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
No major development and infrastructure anticipated.					

* Only location-specific hazard zones or vulnerabilities identified.

9.14.6 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 Town of Orangetown’s 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 Town are shown in Figure 9.14-1 and Figure 9.14-2. 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 the Town of Orangetown has significant exposure. The maps show the location of potential new development, where available.

Figure 9.14-1. Town of Orangetown Flood and Dam Inundation Hazard Area Extent and Location

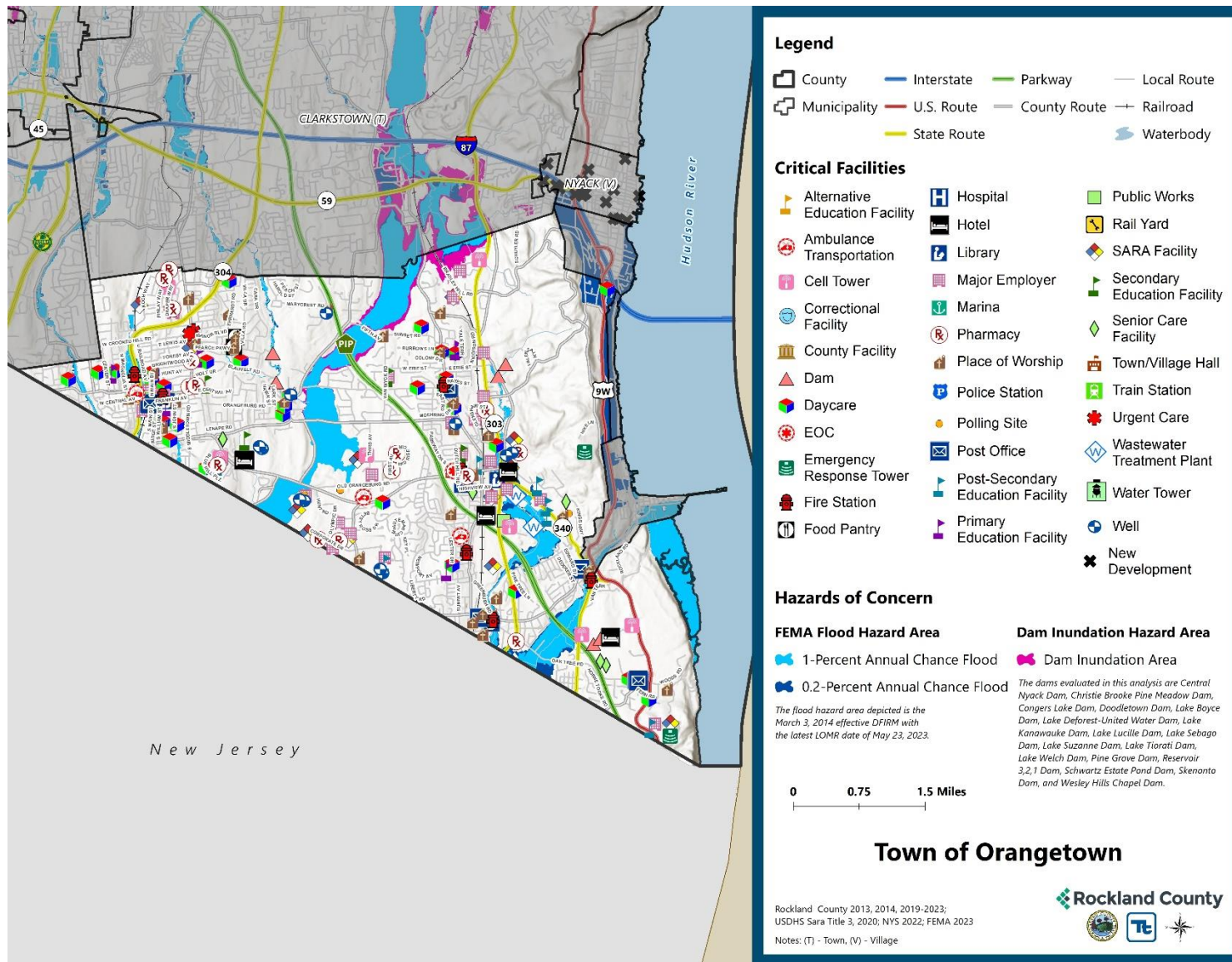
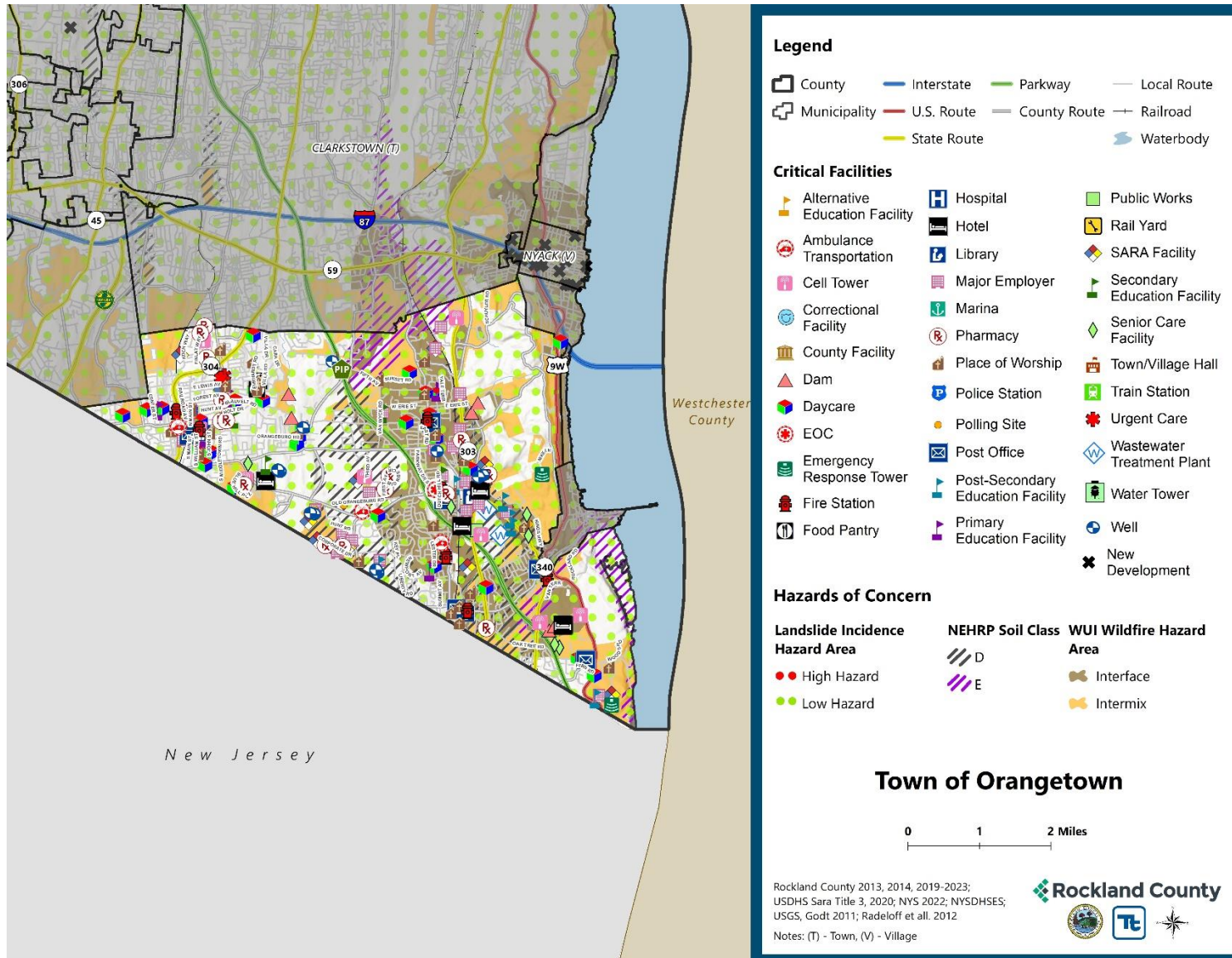


Figure 9.14-2. Town of Orangetown Landslide, Earthquake, and Wildfire Hazard Area Extent and Location



Hazard Event History

The history of natural and non-natural hazard events in the Town of Orangetown is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9.14-14 provides details on loss and damage in the Town during hazard events since the last hazard mitigation plan update.

Table 9.14-14. Hazard Event History in the Town of Orangetown

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Summary of Damage and Losses in the Town
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 Town followed Nationally mandated social distancing and closure of public areas. This impacted the community and economy of the Town. Impacts were also seen to the critical facilities, such as first responding agencies and hospitals due to the spread of the virus.
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.	The Town experienced flood and wind impacts due to the tropical storm.
August 21-24, 2021	New York Hurricane Henri (3565-EM-NY)	Yes	Rainfall from Tropical Storm Henri resulted in widespread flash flooding across southeastern New York, particularly portions of the Lower Hudson Valley. Rainfall totals generally ranged from 2-5 inches, with this rain coming in addition to the 2-5 inches that fell during the predecessor rainfall event the night before.	The Town experienced severe precipitation during the hurricane.
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.	The Town experienced flood impacts from severe precipitation from remnants of this hurricane.

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 Town of Orangetown.

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. Orangetown reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. Table 9.14-15 shows Orangetown’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9.14-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Disease Outbreak	Medium
Drought	Medium
Earthquake	Low
Extreme Temperatures	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 9.14-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 9.14-16. 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		
Henry Kaufman Pond Dam	Dam	Yes	Yes	2024-OrangetownT-06	No
Thofehr Pond Dam	Dam	Yes	Yes	2024-OrangetownT-06	No
John Paulding Engine Company #1	Fire Station	Yes	Yes	2024-OrangetownT-06	No

Source: Rockland County 2023, FEMA

In addition to critical facilities that are exposed to flooding, the following high hazard dams are in or could impact Orangetown:

- First Reservoir Dam, located in Thiells on Horse Chock Brook.
- Lake Deforest Dam, located in West Nyack on the Hackensack River.
- Lake Welch Dam, located in Willow Grove on the Minisceongo Creek.
- Lake Sebago Dam, located in Sloatsburg on the Stony Brook Creek.
- Like Garnerville Dam, located in West Haverstraw on the Minisceongo Creek.
- Tivoli Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Potake Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Lake Kanawauke Dam, located in New Sebago Beach on the Stony Brook.
- Lake Suzanne Dam, located in Spring Valley on the Pascack Brook.
- Lake Lucille Dam, located in Lake Lucille on the Hackensack River.
- Central Nyack Dam, located in Central Nyack.
- Pine Grove Lake Dam, located in Sloatsburg on the Tr-Ramapo River.
- Congers Lake Dam, located in Congers on the E Branch Hack.

Identified Issues

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

- Secondary EOC in the Highway Department building – mitigation action
- Communication protocol for disasters to avoid duplicated efforts during emergencies

9.14.7 Mitigation Strategy and Prioritization

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

Past Mitigation Initiative Status

Table 9.14-17 indicates progress on the Town’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.

Table 9.14-17. 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.
OT-1	Route 303 Culvert Upgrade	Flooding, Severe Storm	Orangetown Highway Department	Undersize culvert on Route 303, which leads to flooding issues along the roadway. The proposed project will upgrade or replace the existing culvert and allow for improved stormwater drainage.	1. Complete – upgrades have been complete – June 2021 – grant funded through Climate Smart Communities 2. N/A	1. Discontinue 2. N/A 3. Completed
OT-2	Villa Drive Culvert Upgrade	Flooding, Severe Storm	Orangetown Highway Department	Undersize culvert on Villa Drive, which leads to flooding issues along the roadway. The proposed project will upgrade or replace the existing culvert and allow for improved stormwater drainage.	1. In Progress 2. Construction will start in January 2024	1. Discontinue 2. N/A 3. Currently underway
OT-3	Blauvelt Road Culvert Upgrade	Flooding, Severe Storm	Orangetown Highway Department	Undersize culvert on Blauvelt Road, which leads to flooding issues along the roadway. The proposed project will upgrade or replace the existing culvert and allow for improved stormwater drainage.	1. No Progress 2. Challenges have been staff availability and time.	1. Include 2. The proposed project will upgrade or replace the existing culvert along Blauvelt Road and allow for improved stormwater drainage 3. N/A
OT-4	Ehrhardt Road Retaining Wall	Flooding, Severe Storm	Orangetown Highway Department	Erosion along the bank may compromise the integrity of the roadway. The Town is looking to construct a stone retaining wall along stream.	1. No Progress 2. Challenges have been staff availability and resources.	1. Include 2. The Town will construct a stone retaining wall along the eroding stream near Ehrhardt Road. 3. N/A

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.
OT-5	Comprehensive Plan Update	All Hazards	CPG member; Town Supervisor	The current comprehensive plan does not incorporate natural disaster mitigation techniques. Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1. Complete 2. Plan has been updated.	1. Discontinue 2. N/A 3. Completed
OT-6	Online GIS Hazard Mapping	All Hazards	CPG member; Town Supervisor	Lack of public knowledge on the spatial extent of hazards. Provide GIS hazard information online for residents and others in the community to view the Town's hazard vulnerabilities.	1. Completed 2. The Town has incorporated maps into the local Comprehensive Plan. These include impervious surfaces, wetlands, and flood maps.	1. Discontinue 2. N/A 3. Completed
OT-7	Public Workshops	All Hazards	CPG member; Town Supervisor	The public may not be aware of the Town's hazard vulnerabilities and planning/zoning decisions. Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	1. Ongoing Capability 2. Town posts on municipal website and social media where appropriate.	1. Discontinue 2. N/A 3. Ongoing capability

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.
OT-8	Residential flood Mitigation	Flooding, Severe Storm	CPG member; Town Supervisor	<p>Repetitively flooded properties place an undue stress on the property owner and Town and efforts should be made to mitigate them.</p> <p>Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.</p>	<p>1. Ongoing Capability 2. FEMA came in to speak to residents</p>	<p>1. Discontinue 2. N/A 3. Ongoing capability</p>
OT-9	Critical Facilities Protection	All Hazards	CPG member; Town Supervisor	<p>If facilities were built before a certain date, they could be more susceptible to damage from a hazard event.</p> <p>Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards and pursue potential mitigation opportunities to protect these sites as funding becomes available.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. Consolidate with old actions (OT-9, 15, and 16) into a single new one to address critical facilities protection (2024-OrangetownT-06).</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.
OT-10	Emergency Response Plan Update	All Hazards	CPG member; Town Supervisor	<p>The current emergency response plans do not implement monitoring or warning systems.</p> <p>Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners' associations, and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.</p>	<p>1. Complete</p> <p>2. Town has an Emergency Operations Plan (EOP) that is updated annually</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Completed</p>
OT-11	Update Town Codes	All Hazards	Jurisdictional CPG member	<p>New vulnerabilities could have emerged, or existing vulnerabilities could have worsened, which could warrant a code update.</p> <p>The Town would like to review and potentially update their existing local codes/ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.</p>	<p>1. Ongoing Capability</p> <p>2. Town updates codes/ordinances when necessary</p>	<p>1. Discontinue</p> <p>2. N/A</p> <p>3. Ongoing capability</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.
OT-12	Flood Damage Prevention Ordinance Update, FIRMs	Flooding	Office of Building, Zoning, Planning, Administration and Enforcement	<p>Future FIRMs could show the need for a more stringent flood ordinance if risk has increased.</p> <p>Update/review floodplain management ordinances to be consistent with potential future new FIRMs.</p>	<p>1. Ongoing Capability 2. No new FIRMs since last HMP; will update when new FIRMs are released</p>	<p>1. Discontinue 2. N/A 3. Ongoing capability</p>
OT-13	Stormwater Management in the Floodplain	Flooding, Severe Storm	Office of Building, Zoning, Planning, Administration and Enforcement	<p>Past development within the floodplain has increased the flood risk over time, designing stormwater storage areas within the floodplain will help to offset this increase.</p> <p>Design stormwater storage within the floodplain to compensate for development that has occurred.</p>	<p>1. No Progress 2. Town uses existing stormwater management ordinance last updated 2006 and floodplain damage prevention ordinance last updated in 2014.</p>	<p>1. Discontinue 2. N/A 3. Town continues to use existing ordinances to inform future development and stormwater storage decisions.</p>
OT-14	Hazard Risk Area Digital Database	All Hazards	Office of Building, Zoning, Planning, Administration and Enforcement	<p>Development in hazard areas can lead to avoidable casualties and property damage.</p> <p>Spatial database of all natural hazard risk areas in the Town will allow land use decision makers to plan safe and resilient communities and developments.</p>	<p>1. Completed 2. The Town has incorporated maps into the local Comprehensive Plan. These include impervious surfaces, wetlands, and flood maps.</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.
OT-15	Privately Owned Critical Facility in the Floodplain	Flooding	Private Property Owners with Support from the Town: Engineering; Office of Building, Zoning, Planning, Administration and Enforcement	<p>There are five critical facilities in the Town located in the floodplain and vulnerable to a flood event. 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>The Town does not have jurisdiction over this facility to mitigate. The Town will notify the facility manager/operator regarding potential mitigation options and funding for implementation to consider. Potential projects may include elevation of structure and/or critical mechanics, floodproofing structure or entries/lowest floor, relocation. The Town to inform owners that NYS requires that any mitigation addresses the 500-year flood event or “worst damage scenario”.</p>	<p>1. No Progress 2. N/A</p>	<p>1. Discontinue 2. N/A 3. Consolidate with old actions (OT-9, 15, and 16) into a single new one to address critical facilities protection (2024-OrangetownT-06).</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.
OT-16	Cherry Brook Drainage Project	Flooding	Engineering; Office of Building, Zoning, Planning, Administration and Enforcement	Flooding along Bright Wood Ave in Pearl River as a result of excess stormwater flowing into the waterway. Investigation into the feasibility of construction open ditches and additional drainage along the Cherry Brook.	1. In Progress 2. Town completed studies in this area; town will utilize the study's recommendations and incorporate those as mitigation actions	1. Include 2. The Town will include the recommendations from the study as mitigation actions 3. N/A
OT-17	Publicly Owned Critical Facility in the Floodplain	Flooding	Engineering; Office of Building, Zoning, Planning, Administration and Enforcement	Wastewater Treatment Plant is located within the 500-year floodplain. Determine which type of mitigation option will prove most effective to protecting the Wastewater Treatment Plant and implement the action.	1. No Progress 2. N/A	1. Discontinue 2. N/A 3. Consolidate with old actions (OT-9, 15, and 16) into a single new one to address critical facilities protection (2024-OrangetownT-06).
Village of South Nyack						
SN-1	Storm drain – South Highland Ave.	Flooding, Severe Storm	Village of South Nyack	Flood concerns on Highland Ave.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.
SN-2	Broadway culvert	Flooding, Severe Storm	Village of South Nyack	Flood concerns on undersized culvert system.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.
SN-3	Upgrade generator in Village Hall/Police Station	All Hazards	Village of South Nyack	Problems with generator in Village Hall/Police Station.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.

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.
SN-4	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	All Hazards	Village of South Nyack	Local comprehensive plan needs updating.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.
SN-5	Expand and disseminate GIS and other hazard information on the internet.	All Hazards	Village of South Nyack	Lack of GIS outreach in the community for floodplain awareness.	1. No progress 2. Village of South Nyack dissolved.	1. Discontinue 2. N/A 3. Village of South Nyack dissolved.

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in Table 9.14-17, Orangetown identified the following mitigation efforts completed since the last HMP:

- Route 303 culvert upgrades completed (June 2021): grant funded through Climate Smart Communities.
- Construction will start in January 2024 for Villa Drive culvert upgrades.
- The local comprehensive plan was updated (2023) to incorporate natural disaster mitigation techniques.
- Town posts on municipal website and social media where appropriate for hazard mitigation techniques and information.
- FEMA came to speak to residents about repetitive loss properties and funding and mitigation opportunities available.
- Town has an Emergency Operations Plan (EOP) that is updated annually.
- Town updates codes/ordinances when necessary.
- No new FIRMs since last HMP; will update when new FIRMs are released.

Since the adoption of the County's first HMP, Orangetown has made significant mitigation progress in the following areas:

- FEMA coordination with property owners.
- Updated comprehensive and EOPs for the Town.
- Increased public engagement.
- Upgrades to stormwater systems.

Proposed Hazard Mitigation Initiatives for the HMP Update

Orangetown 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 Orangetown 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 Town's priorities.

Table 9.14-18 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 9.14-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9.14-18. 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	-	2	-	-	2	-	1	-
Disease Outbreak	-	-	-	1	-	-	1	-	-	-
Drought	-	-	-	1	-	-	1	-	-	-
Earthquake	-	-	-	1	-	-	1	-	-	-
Extreme Temperature	-	-	-	1	-	-	1	-	-	-
Flood	-	4	1	2	2	-	2	1	2	-
Landslide	-	-	-	1	-	-	1	-	-	-
Severe Weather	-	4	1	2	2	-	2	1	2	-
Severe Winter Weather	-	-	-	1	-	-	1	-	-	-
Wildfire	-	-	-	1	-	-	1	-	-	-

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 9.14-19. 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-OrangetownT-01	Replacement of West Washington Avenue Bridge over Pascack Brook	1	1	1	0	0	0	0	1	0	1	1	1	1	1	9	Medium
2024-OrangetownT-02	Blauvelt Road Culvert Upgrade	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-OrangetownT-03	Ehrhardt Road Retaining Wall	1	1	1	0	0	0	0	1	1	1	1	1	1	1	10	Medium
2024-OrangetownT-04	Cherry Brook Drainage Project	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-OrangetownT-05	Stormwater Bioretention Basin	1	1	1	0	0	0	1	1	1	1	1	1	1	1	11	High
2024-OrangetownT-06	Critical Facilities in the Floodplain	1	1	1	0	0	0	0	0	1	1	1	1	1	1	9	Medium
2024-OrangetownT-07	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	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-OrangetownT-01. Replacement of West Washington Avenue Bridge over Pascack Brook

Action Name:	2024-OrangetownT-01. Replacement of West Washington Avenue Bridge over Pascack Brook	
Description of the Problem:	The West Washington Avenue Bridge, which carries County Route 30 over the Pascack Brook has outlived its useful service life and needs replacement. The roadway approaches are sharp turns on steep grades and are difficult to navigate during adverse weather conditions. The channel alignment of Pascack Brook in relation to West Washington Avenue in the vicinity of the bridge results in embankment scour and roadway flooding during extreme storm events.	
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 checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The project will replace the bridge with a new structure having improved hydraulic capacity, alignment, and scour resistance. We anticipate that the new structure will be upstream of the existing bridge with the stream channel adjusted to improve its alignment with the structure and eliminate or minimize the potential for embankment and foundation scour. The bridge will be designed to accommodate all legal loads. The project will realign the approach roadways between Old Pascack Road and Highland Avenue to improve horizontal and vertical curves and consider replacement of drainage systems.	
Lead Agency:	Rockland County Highway Department	
Supporting Agencies:	Town Highway Department	
Estimated Cost:	\$3,000,000	
Potential Funding Sources:	FEMA HMGP, Federal, State	
Implementation Timeline:	Requests for proposals issued late 2023. Construction expected to begin early 2024.	
Goals Met:	1, 2	
Benefits:	This action will replace the existing bridge, including upgrading drainage systems and realigning channels, so that the roadway will be accessible for evacuations, travel, and emergency response during heavy precipitation and severe storm 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:	N/A	
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	N/A	
Impact on Future Development:	Future development in the surrounding area will be less likely to experience damage from flooding and to be isolated due to an impassable bridge.	
Climate Change Considerations:	A warmer atmosphere means more intense precipitation events and storms, which elevates the risk for overtopping.	

Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Severity of access problem continues, failure potential increases
	Remove the structure		Eliminates critical travel route, likely low political and public support
	Replace structure with current alignment		Current access problems continue

Action 2024-OrangetownT-02. Blauvelt Road Culvert Upgrade

Action Name:	2024-OrangetownT-02. Blauvelt Road Culvert Upgrade	
Description of the Problem:	Undersize culvert on Blauvelt Road, which leads to flooding issues along the roadway.	
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 proposed project will upgrade or replace the existing culvert along Blauvelt Road and allow for improved stormwater drainage.	
Lead Agency:	Orangetown Highway Department	
Supporting Agencies:	N/A	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	FEMA HMGP, Federal, State	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2	
Benefits:	High (> \$100,000)	
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 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 would ensure standard of operation for an important roadway that would serve vulnerable populations during an evacuation.	
Impact on Critical Facilities/Lifelines:	Updating the undersized culverts would maintain the roadway for future use and mitigate against future flooding impacts.	
Impact on Capabilities	By updating the culvert, first responders and others will be able to remain operational during severe disaster events.	
Impact on Future Development:	N/A	

Climate Change Considerations:	As climate change is affecting future flood events, this action would work to limit the impacts to the community from severe flooding.		
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists.
	Elevate the roadway.		Not feasible, long timeframe to implementation.
	Remove roadway.		Eliminates critical travel route, likely low political and public support

Action 2024-OrangetownT-03. Ehrhardt Road Retaining Wall

Action Name:	2024-OrangetownT-03. Ehrhardt Road Retaining Wall	
Description of the Problem:	Erosion along the bank may compromise the integrity of the roadway.	
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 Town will construct a stone retaining wall along the eroding stream near Ehrhardt Road.	
Lead Agency:	Orangetown Highway Department	
Supporting Agencies:	N/A	
Estimated Cost:	Medium (\$10,000 to \$100,000)	
Potential Funding Sources:	FEMA HMGP, Federal, State	
Implementation Timeline:	Short Term (<5 years)	
Goals Met:	1, 2	
Benefits:	High (> \$100,000)	
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:	Mitigating the eroding stream will protect the roadway from future flood events and erosion, maintaining standards of operation for socially vulnerable populations to safely evacuate during time of crisis.	
Impact on Critical Facilities/Lifelines:	This action will protect the roadway and ensure functionality during a disaster event.	

Impact on Capabilities	This action will ensure first responders and other staff to remain operational during a disaster event.		
Impact on Future Development:	N/A		
Climate Change Considerations:	As climate change exacerbates flooding and erosion issues, this action will mitigate direct and cascading future impacts felt by the community.		
Priority: Check one	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists.
	Remove the road		Eliminates critical travel route, likely low political and public support
	Fill in eroded bank with sediment		Short-term solution, possible negative environmental impacts.

Action 2024-OrangetownT-04. Cherry Brook Drainage Project

Action Name:	2024-OrangetownT-04. Cherry Brook Drainage Project		
Description of the Problem:	Flooding along Bright Wood Ave in Pearl River as a result of excess stormwater flowing into the waterway. Town completed studies in this area.		
Hazard(s) of Concern: Check all that apply	<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 Town will include the recommendations from the study as mitigation actions.		
Lead Agency:	Engineering Department: Office of Building, Zoning, Planning, Administration and Enforcement		
Supporting Agencies:	N/A		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	FEMA HMGP, Federal, State		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2		
Benefits:	High (> \$100,000)		
Mitigation Action Type: Check all that apply	<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: Check all that apply	<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 road serves as access points for residential areas and evacuation routes, maintaining operation would allow all community members to be able to safely evacuate during a disaster event.		
Impact on Critical Facilities/Lifelines:	This action would mitigate flooding impacts seen to the road to ensure standards of operation during disaster event.		
Impact on Capabilities	This action would ensure that first responders can remain operational through functional road systems during disaster events.		
Impact on Future Development:	N/A		
Climate Change Considerations:	.Climate change will increase severe storm severity and frequency. This action will protect the community from future climate change impacts.		
Priority: Check one	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives	Action		Evaluation
	No action		Problem persists.
	Complete mitigation strategies without considering study.		Likelihood that the problem will not be addressed properly, not feasible/efficient.
	Let private landowners to mitigate flooding.		Lack of resources and knowledge to implement mitigation actions.

Action 2024-OrangetownT-05. Stormwater Bioretention Basin

Action Name:	2024-OrangetownT-05. Stormwater Bioretention Basin		
Description of the Problem:	There is extensive flooding along Mountainview Ave. and Green Bush Rd. that runs along the 303 corridors.		
Hazard(s) of Concern: Check all that apply	<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 Town will install a stormwater bioretention basin to mitigate flood concerns in this area.		
Lead Agency:	Engineering Department		
Supporting Agencies:	Office of Building, Zoning, Planning, Administration and Enforcement		
Estimated Cost:	Low (< \$10,000)		
Potential Funding Sources:	FEMA HMGP, Federal, State		
Implementation Timeline:	Short Term (<5 years)		
Goals Met:	1, 2		
Benefits:	High (> \$100,000)		
Mitigation Action Type: Check all that apply	<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 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 protect critical roadways which serve the community, including vulnerable populations, during disaster events.	
Impact on Critical Facilities/Lifelines:	This action is a nature-based solution project to protect critical roadway used for safe evacuation and day-to-day needs of the community.	
Impact on Capabilities	Installing a stormwater bioretention basin will help to mitigate flooding on roadways to ensure standard of operation for first responders and staff during a disaster.	
Impact on Future Development:	This action will implement flood mitigation measures in a sustainable way to promote stormwater resilience in the community and has a low impact on the environment.	
Climate Change Considerations:	Climate change will impact flooding concerns in the community, increasing stormwater and putting pressure on pre-existing stormwater systems. This action will mitigate future stormwater runoff to the community through a sustainable solution.	
Priority: <i>Check one</i>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Flooding continues.
	Remove the roadways	Eliminates critical travel route, likely low political and public support
	Deploy sandbags around critical infrastructure during storm events	Short-term solution, problem persists, lack of time to deploy during severe event

Action 2024-OrangetownT-06. Critical Facilities in the Floodplain

Action Name:	2024-OrangetownT-06. Critical Facilities in the Floodplain	
Description of the Problem:	The following critical facilities are located floodplain and identified as vulnerable to the flood hazard: Henry Kaufman Pond Dam, Thofehr Pond Dam, and John Paulding Engine Company #1. T	
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 checked="" type="checkbox"/> Severe Storm <input type="checkbox"/> Severe Winter Storm <input type="checkbox"/> Wildfire
Description of the Solution:	The Town will work with facility owners to determine evaluate the need for potential mitigation projects to protect the dams to the 500-year flood or worst-case scenario. Potential feasible projects may include the following: elevations, dry floodproofing, backup power supply, retrofits, or relocation. The owners will need to determine the most cost effective and feasible mitigation action for these facilities.	
Lead Agency:	Building and Engineering Departments	
Supporting Agencies:	Rockland County OFES	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	Town Operating Budget	
Implementation Timeline:	Short-term (< 5 years)	
Goals Met:	2	
Benefits:	Low (> \$10,000)	

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:	N/A	
Impact on Critical Facilities/Lifelines:	This project aims to ensure the ability of the dams to continue functioning during severe storms so as not to lead to additional flooding.	
Impact on Capabilities:	N/A	
Impact on Future Development:	This project can help mitigate potential damage in the inundation areas.	
Climate Change Considerations:	N/A	
Priority: <i>Check one</i>	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives	Action	Evaluation
	No action	Problem persists
	County completes mitigation actions in inundation areas	Does not reduce or eliminate risk

Action 2024-OrangetownT-07. Socially Vulnerable Populations Outreach

Action Name:	Action 2024-OrangetownT-07. Socially Vulnerable Populations Outreach	
Description of the Problem:	The Town 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 Town 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:	Town Administration	
Supporting Agencies:	Rockland County	
Estimated Cost:	Low	
Potential Funding Sources:	Town 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 Town. 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 Town will become educated on hazards risks. The Town 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 Town’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 Town
	Use only a few methods for distribution		Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance